



Edinburgh Napier University, UK
Doctoral (PhD) Thesis

The Role of Interactive Technology in the Co-creation of Experience in Scottish Visitor Attractions

Author:

Ellis Andrew Urquhart BA (Hons)

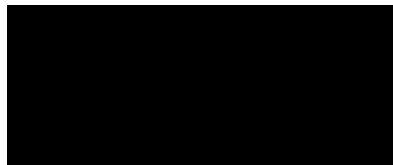
A thesis submitted in partial fulfilment of the requirements of
Edinburgh Napier University, for the award of Doctor of
Philosophy.

Submission Date: May 2019

DECLARATION

I confirm that this thesis is my own work and that no material contained within has been used in any other submission for an academic award. All sources (literary and electronic) have been properly acknowledged, as and when they occur in the body of the text.

Signed:

A solid black rectangular box used to redact the signature of the author.

Print: ELLIS ANDREW URQUHART

Date: May 2019

ABSTRACT

As a theoretical construct, co-creation has received significant attention in the service management field and is increasingly being applied to experiential industries such as tourism. Central to this emerging body of knowledge, is the presence of technology as a mediator in the co-creation of experience. As an experientially-driven sector, visitor attractions (VAs) are increasingly using technology in their interpretative provision however there is a surprising lack of research that questions the use of technology as a mediator in the VA experience and equally, its role in the co-creation of visitor experiences. This study, rooted in the constructivist paradigm, draws on two main areas of research: experiential co-creation theory and interactive technology in VAs, to provide a contribution to VA management research with wider implications for tourism scholarship. Semi-structured interviews with VA managers and visitors were used in four Scottish VAs to explore the role and application of interactive technology in various exhibitions. These sites encapsulate heritage and science-based VA products which traditionally utilise technology as part of their interpretation. The findings of this research indicate a series of management challenges and issues driving technology-adoption in VAs, coupled with a variety of visitor perceptions and determinants that govern how visitors engage with technologies in exhibition spaces. It is argued that the factors of both ‘actors’ within the service relationship have a significant impact on the co-creation of technology-mediated experiences. This research therefore synthesises these influencing factors and identifies an emergent ‘Technology-mediated Co-creative Experience Interface’ with four ‘building blocks’ to encourage successful experiential co-creation in technology-mediated spaces (Active Dialogue, Personalisation, Equitable Resource Integration, and Multi-sensory Engagement). The output of this study brings together the various influencing factors into a conceptual model that provides a valuable contribution to knowledge and associated management practice in VA research.

ACKNOWLEDGEMENTS

There are a number of individuals that deserve to be acknowledged for their support throughout this research. First and foremost, I send my sincere thanks to my supervisory team. To my Director of Studies, Professor Anna Leask, for her tireless efforts in all facets of my academic journey. To Dr Ivana Rihova, whose expertise and empathy has been outstanding throughout the process and to my long-time supporter Dr Shuna Marr who, after 10 years of guidance, continues to keep me right. The dedication of this team has not gone unnoticed. Through the high-points and low, they have offered the words of wisdom that has made me a more confident academic, and person in general.

Sincere thanks must go to the network of participants and gatekeepers both at the chosen VAs and across the sector who have assisted in the study. In particular, David McLeod and the members of the Scottish Museums Federation who have helped enormously throughout the process.

To my colleagues at Edinburgh Napier University's Business School, namely: Dr Joan McLatchie; Lindsay Cole; Professor Jane Ali-Knight; Pauline Gordon; and Dr Constantia Anastasiadou, I send my thanks for their continued encouragement and motivation. Outside of my immediate group, I send warm thanks to Norma D'Annunzio-Green, Dr David McGuire and Dr Janice McMillan for their support during the formal review stages, and to Jim Doyle for his administrative support. To my fellow PhD students throughout the journey namely: Kat Rezai; Maria Vieira; Kelvin Zhang; Kristen Marshall; and Jane Devlin, I say thank you for your good humour and support throughout the journey.

Finally, sincere thanks must go to my dear friends, especially Sarah Laing, Amy Anderson and Jason McColm who have sustained many a complaint about PhD life in recent years. To my parents, Jenn & Brian, and my sister Deri, who were the driving force behind this endeavour – I would not have made it to the end of this journey without you all.

TABLE OF CONTENTS

DECLARATION.....	II
ABSTRACT	III
ACKNOWLEDGEMENTS	IV
TABLE OF CONTENTS	V
TABLE OF FIGURES	IX
LIST OF IMAGES.....	X
LIST OF TABLES.....	XI
LIST OF ABBREVIATIONS.....	XII
CHAPTER 1. INTRODUCTION AND CONTEXT	1
1.1 Background and Thesis Rationale.....	1
1.2 Thesis Aim and Objectives	2
1.3 Research Approach	3
1.4 Originality and Value.....	3
1.5 Structure of Thesis.....	4
CHAPTER 2. THE CO-CREATION OF EXPERIENCE.....	7
2.1 Introduction	7
2.2 Developments in Experience Research	7
2.3 Dominant Logics and Co-creation	13
2.4 The Experiential Perspective on Co-creation	23
2.4.1 <i>Defining Co-created Experiences</i>	27
2.4.2 <i>Reconsidering Actors and Roles in Co-creation</i>	38
2.4.3 <i>The Management of Co-Created Experiences</i>	41
2.5 Technology-mediated Experience Co-creation	43
2.6 Co-creation and Tourism Research.....	50
2.6.1 <i>Hospitality Sector</i>	53
2.6.2 <i>Festivals and Events</i>	55
2.6.3 <i>Visitor Attractions</i>	56
2.7 Chapter Summary.....	57
CHAPTER 3. INTERACTIVE TECHNOLOGY IN A VISITOR ATTRACTION CONTEXT....	59
3.1 Introduction	59
3.2 The Visitor Attraction Context.....	59
3.2.1 <i>Visitor Attraction Management Challenges</i>	62
3.2.2 <i>Exploring the Visitor Attraction Product</i>	70
3.3 Visitor Attractions and Interpretation	71
3.4 Embedding Technology in Attractions	79
3.4.1 <i>Application of Interpretative Media</i>	84
3.5 Visitor Choice and Preference	88
3.6 Authenticity in Technology-mediated Interpretation	93
3.7 Chapter Summary.....	99

3.8 Conclusions from the Literature Review	100
3.8.1 Gaps in Existing Research	101
3.8.2 Development of a Theoretical Framework	102
CHAPTER 4. METHODOLOGY	104
4.1 Introduction	104
4.2 Research Questions	105
4.3 Research Philosophy	106
4.4 Ontology and Epistemology	109
4.4.1 Philosophical perspectives in tourism research	109
4.4.2 The constructivist paradigm as a philosophical position	111
4.4.3 Critique of the constructivist paradigm	115
4.5 Qualitative Inquiry	116
4.5.1 Common methodological approaches	120
4.6 Research Process of the Qualitative Study	124
4.6.1 Sampling	127
4.6.2 VA Profiles	136
4.6.3 Range of technology within the sample	145
4.7 Chapter Summary	149
CHAPTER 5. RESEARCH METHODS	150
5.1 Introduction	150
5.2 Research Methods	150
5.2.1 Semi-structured interviews	150
5.3 Data Collection	155
5.3.1 Pilot Study	155
5.3.2 Context-provider – Observation in Exhibition Spaces	156
5.3.3 Qualitative Phase 1 – Management Interviews	160
5.3.4 Qualitative Phase 2 – Visitor Interviews	161
5.4 Data Analysis	165
5.4.1 Transcription and Computer-Assisted Qualitative Data Analysis Software (CAQDAS)	165
5.4.2 The Template Analysis Technique	166
5.5 Ethical Considerations and Research Integrity	170
5.6 Evaluating the Research	172
5.7 Reflections on the Data Collection Process	175
5.8 Chapter Summary	176
CHAPTER 6. FINDINGS & DISCUSSION - MANAGEMENT CHALLENGES & ISSUES	177
6.1 Introduction	177
6.2 Management Challenges & Issues – Dominant Themes	177
6.3 Motivating Factors	178
6.3.1 Value of technology as an interpretative tool	178
6.3.3 Widening access agenda	182
6.3.4 Funding	185
6.4 Operational Issues	188

6.4.1 Interpretative layering.....	188
6.4.2 Technology failure	191
6.4.3 Organisational processes.....	194
6.5 Experience Expectations	196
6.5.1 Engagement with the subject matter.....	196
6.5.2 Narrative creation	199
6.5.3 Dynamism.....	201
6.6 Chapter Summary.....	204
CHAPTER 7. FINDINGS & DISCUSSION - VISITOR PERCEPTIONS & DETERMINANTS.....	206
7.1 Introduction	206
7.2 Visitor Perceptions & Determinants – Dominant Themes	206
7.3 Environmental.....	207
7.3.1 Access	207
7.3.2 Visitor route	210
7.3.3 Interpretative overload.....	214
7.4 Technology Use	216
7.4.1 Visitor preference	216
7.4.2 Behaviours.....	222
7.4.3 Usability.....	224
7.5 Experiential Desires	227
7.5.1 Degree of choice	227
7.5.2 Interactivity	229
7.5.3 Memorable experiences.....	232
7.6 Chapter Summary.....	234
CHAPTER 8. CONTRIBUTIONS AND CONCLUSIONS	235
8.1 Introduction	235
8.2 Conceptual Model.....	235
8.2.1 Overall Structure and Design	237
8.2.2 VA Management Challenges & Issues.....	239
8.2.3 Visitor Perspective & Determinants.....	246
8.3 The Technology-mediated Co-creative Experience Interface	253
8.3.1 Active Dialogue	254
8.3.2 Personalisation.....	255
8.3.3 Equitable Resource Integration.....	256
8.3.4 Multi-sensory Engagement.....	257
8.4 Contributions of Study	258
8.4.1 Contributions to Knowledge & Understanding	258
8.4.2 Contributions to Professional Practice	261
8.5 Broader Applications of the Technology-mediated Co-creative Experience	265
8.6 Reflection on Aim and Objectives.....	268
8.7 Limitations of the Research	270
8.8 Future Research Directions	272

8.9 Concluding Remarks	274
REFERENCES.....	275
Appendix 1. Interview Guide A) Visitor Attraction Management	327
Appendix 2. Interview Guide B) Visitor	328
Appendix 3. Coding Template (Initial)	329
Appendix 4. Coding Template (Final)	331
Appendix 5. Potential Ethical Issues and Management Approach	333
Appendix 6. Participant Information Sheet.....	335
Appendix 7. Participant Consent Form	337
Appendix 8. Criteria for Excellent Qualitative Research	339

TABLE OF FIGURES

Figure 1. Key Concepts in Tourism Experience Research	8
Figure 2. Dimensions of the Experience Economy	11
Figure 3. Overview of Dominant Logics	15
Figure 4. The DART Model of Co-creation	27
Figure 5. Comparing co-production and co-creation	33
Figure 6. The co-production to co-creation matrix	38
Figure 7. Domain of Experience	42
Figure 8. Use of ICTs in customer-centric approach to tourism	48
Figure 9. The tourist on-site co-creation experience: a conceptual framework	52
Figure 10. Characteristics of tourism services and experience encounters	54
Figure 11. Structure of the VA System	60
Figure 12. Elements affecting the VA experience	71
Figure 13. The Tourism Technology Adoption Model	80
Figure 14. Types of interpretation and examples	85
Figure 15. Conceptual Model for Evaluating User Experience of Museum Website	89
Figure 16. Theoretical framework derived from literature review	103
Figure 17. Paradigms in Tourism Research	109
Figure 18. Philosophical positioning	112
Figure 19. Overall Research Process of the Study	126
Figure 20. Gender division of visitor interview participants	163
Figure 21. Age range of visitor interview participants	164
Figure 22. Country of origin of visitor interview participants	165
Figure 23. Management Challenges & Issues – Themes and Sub-themes	178
Figure 24. Visitor Perceptions and Determinants – Themes and Sub-themes	207
Figure 25. The Technology-mediated Co-creative Visitor Attraction Experience model	236
Figure 26. VA Management Strategies for Technology-mediated Experience Co-creation	262

LIST OF IMAGES

Image 1. NMS Explore Gallery (from above). Flickr Creative Commons, 2016.	139
Image 2. Collection cascade, NMS. Author photograph, 2016.	140
Image 3. Entrance to BodyWorks®. Author photograph, 2017	141
Image 4. Interactive Pod 'Brain Explorer'. Author photograph, 2017	142
Image 5. Interactive Touchscreen 'Men of Discovery'. Author photograph, 2017	143
Image 6. Discovery Point themed space. Author photograph, 2016	144
Image 7. Discovery Point presentation case. Author photograph, 2016	144
Image 8. Visitor Route at Discovery Point Museum. Author photograph, February 2017 ...	212
Image 9. Xbox Style Interactive, DP. Author photograph, 2016	218
Image 10. Xbox Style Interactive (close-up), DP. Author photograph, 2016	219

LIST OF TABLES

Table 1. Refinement of Foundational Premises in SD Logic	16
Table 2. Definitions of experiential co-creation	29
Table 3. Co-creation and co-production in relation to stage of service	36
Table 4. Engagement platforms, examples and interactions	45
Table 5. Traditional vs. Experience Innovation	46
Table 6. Tilden's Six Principles of Interpretation	74
Table 7. Roles of Technology	81
Table 8. A Network of Basic Assumptions in the Subjective-Objective Debate in Social Science.....	108
Table 9. Overview of Methodological Approaches: Experience Co-creation.....	122
Table 10. Overview of Methodological Approaches: Visitor Attraction Interpretation & Technology Adoption	123
Table 11. Sampling criteria for VA sites	130
Table 12. Range of technology present in the sample sites	148
Table 13. Challenges in visitor research based on the pilot study.....	156
Table 14. Observation dates and locations.....	159
Table 15. Management Interviews: Collection & Expertise	161
Table 16. Overview of visitor interview participants	162
Table 17. A-priori coding	167
Table 18. Coding and analysis strategy	168

LIST OF ABBREVIATIONS

ASVA	Association of Scottish Visitor Attractions
CD	Customer Dominant (Logic)
DP	Discovery Point, Dundee
GD	Goods Dominant (Logic)
GSC	Glasgow Science Centre
NMS	National Museum of Scotland, Edinburgh
SD	Service Dominant (Logic)
SHM	Surgeons' Hall Museum, Edinburgh
VA	Visitor Attraction

CHAPTER 1. INTRODUCTION AND CONTEXT

1.1 Background and Thesis Rationale

In the service marketing/management field, the co-creation of experience (Azevedo, 2010; Prahalad & Ramaswamy, 2000, 2004a; Sfandla & Björk, 2013; Stewart & Pavlou, 2002) offers a unique lens through which tourism activity can be examined. This concept has emerged as a result of paradigm shifts in the marketing discipline that attempted to blur the divisions between customer and service provider (Vargo & Lusch, 2004). From this perspective, an experience is not predetermined or packaged, it is actively co-created as a result of the interactions and engagements between the service provider and the customer (Stewart & Pavlou, 2002). Furthermore, value is no longer embedded in tangible products, but attributed by the individual as a result of their individual experience.

To mediate the co-creative process, the literature points to a range of engagement platforms that can support the co-creation of experience. These can be described as the physical or virtual structures which support and foster interaction between the customer and the service provider (Prahalad & Ramaswamy, 2004a). Increasingly, technology can be seen as a being embedded in daily life, however the contemporary role of technology as a mediator in the service relationship has only begun to receive research from the co-creative perspective. As such there have been a number of calls to critically question the role of technology in experiential contexts (Bødker & Munar, 2014; Gretzel, 2011; Yoo, 2010), and this is particularly relevant in tourism and visitor attractions (VAs) specifically.

As a central component of the tourism industry, VAs not only as economic magnets for destination development but also represent a core motivation for travel to particular regions and areas (Connell & Page, 2009; Leask, 2010; Prideaux, 2008). As argued by Sharpley (2007), VAs can increase visitation, particularly in rural areas, and encourage sustainable development in destinations. In contrast to other providers in the industry, VAs largely provide an experiential product rather than tangible goods or services. In an

increasingly competitive marketplace, VAs are increasingly turning to interactive technologies to enhance the visitor experience (Swarbrooke, 2002; Wanhill, 2009c; Xu, 2010), however in-depth studies into this development are lacking in the VA literature. VAs use technology in a particularly unique way within the tourism industry. In this context, technology is often used in interactive exhibits as part of the sites interpretation. In contrast to other sectors, technology is therefore not used exclusively for communication or transactions, but also as a tool to present a VAs story and to engage visitors with the core messages of the site (Knudson, Cable, & Beck, 2003; Kuo, 2002; Stewart & Pavlou, 2002; Weiler & Walker, 2014). Despite the proliferation of co-creation research in neighbouring fields, it has rarely been applied to VAs. This thesis thereby provides an in-depth understanding into the factors influencing the co-creation of technology-mediated VA experiences to extend current knowledge in co-creation, technology-mediation and VA management.

1.2 Thesis Aim and Objectives

Based on the conceptual issues raised in the background, the aim of this PhD thesis is:

‘To examine the role and application of interactive technology in the co-creation of visitor experiences in Scottish visitor attractions.’

To achieve the aim above, a series of research objectives have been identified to support and direct the study. These objectives are as follows:

1. To critically review the literature surrounding the co-creation of tourism experiences in the context of VAs
2. To examine the role and application of interactive technology within different VA exhibition spaces
3. To develop a conceptual model that explores the factors influencing the co-creation of technology-mediated experiences in VAs
4. To contribute to the development of knowledge in VA research by debating how interactive technology can be further developed as a co-creative platform in Scottish VAs

1.3 Research Approach

Grounded in the constructivist paradigm and driven by a qualitative approach, this thesis makes a firm contribution in the form of exploratory research. An extensive literature review identified several gaps in tourism experience research and specifically, in VA management. A series of research questions provided a framework for the inquiry and led to the selection of in-depth semi-structured interviewing and observation as the most appropriate research methods. Data analysis was conducted through the template analysis technique and the emergent themes led to the development of a conceptual model exploring the technology-mediated co-creative VA experience. The research concluded by identifying the theoretical and practical contributions drawn from the study and a consideration of avenues for future research.

1.4 Originality and Value

This study blends various streams of literature from tourism, service management and visitor attraction research to expand theory into new directions. The research surrounding technology-mediated experience co-creation has yet to be applied to the VA sector and offers a unique perspective to enhance existing research in the field. The ways in which interactive technologies are used in VAs are particularly unique as are the factors influencing the co-creation of experience. As such, this thesis targets this currently under-researched area by providing a contemporary analysis based in the Scottish VA study. This thesis critically analyses the relationship between the VA and the visitor, with interactive technologies acting as a mediating force. As such this is one of the first studies to explore both the management and the visitor perspectives within technology-mediated experience co-creation. This unified multi-actor approach led to the development of the Technology-mediated Co-creative Visitor Attraction Experience Model which mapped the VA management challenges and issues with visitor perspectives and determinants related to technology-mediated experience co-creation. The study further conceptualises the Technology-mediated Co-created Experience Interface which presents four concepts (Active Dialogue, Personalisation, Equitable Resource Integration and Multi-

sensory Engagement) that act as building blocks for experiential co-creation in technology-mediated environments. The factors emerging from this qualitative study place a firm contribution into the literature surrounding visitor attraction management, with implications for the wider tourism, leisure and service management fields.

1.5 Structure of Thesis

This thesis is divided into the eight chapters that act to structure the research:

- *Chapter 2 – The Co-creation of Experience*

The following chapter draws together various streams of academic literature to examine the existing body of knowledge in co-created experiences and tourism technology. Through an in-depth critique of existing studies and academic contributions, this chapter provides a comprehensive overview of two distinct literature streams. Initially, the co-creation of experience approach and dominant logics in service management provide a theoretical base for the thesis. These perspectives present a new way to view the service relationship as a dynamic and organic process that can be mediated by various platforms.

- *Chapter 3 – Interactive Technology in a Visitor Attraction Context*

Chapter 3 extends the literature review into the VA context. Initially, the experiential nature of the VA product is considered before a critique of. Thereafter, the literature review examines the role of interactive technology in existing tourism/VA research and considers the extent to which this can mediate visitor experiences. The analysis presents the key academic perspectives driving this research in the form of a theoretical model and identifies the gaps which this study has addressed.

- *Chapter 4 – Methodology*

Chapter 4 presents the methodological approach developed for this study. An initial discussion locates the researcher and the study within an ontological and epistemological framework which supported the research process. Key issues, constraints and concepts are evaluated within the context of the research questions and propositions. The qualitative nature of this study, emerging from

the constructivist paradigm is evaluated in the context of existing studies in experiential co-creation and interpretation/technology adoption in VAs.

- *Chapter 5 – Research Methods*

In Chapter 5, the selected research methods and analytical technique are discussed at length. In line with the qualitative underpinning of this thesis, semi-structured interviews and observations are identified as the dominant methods. Chapter 5 also evaluates the use of the template analysis technique for analysing the rich collected data. The chapter closes by evaluating the research methods employed and the ethical considerations that were managed throughout the research process.

- *Chapter 6 – Findings and Discussion: Management Challenges & Issues*

Chapter 6 addresses the collected data from the first actor within the service relationship. This chapter presents and analyses the management challenges and issues emerging from the VA manager interviews conducted at the four Scottish VAs. The emerging factors illuminate the role of VA management in the selection, adoption and operation of interactive platforms in an exhibition context and identify the challenges that are associated with these.

- *Chapter 7 – Findings and Discussion: Visitor Perceptions and Determinants*

Chapter 7 addresses the second actor within the service relationship. Where Chapter 6 focussed on the management dimension, Chapter 7 moves to explore the visitor perceptions in the technology-mediated co-creative experience. The data from visitor interviews and observations is presented and analysed to uncover the factors and determinants influencing their role in the co-creation of technology-mediated VA experiences.

- *Chapter 8 – Conceptual Development & Conclusions*

Chapter 8 synthesises and concludes the findings presented in the analytical chapters and considers the key contributions that have been made to both theory and practice. A conceptual model that bridges the two actors prominent within the study is presented and four building blocks that facilitate the

technology-mediated co-creative VA experience are identified. Furthermore, this chapter re-contextualises the findings of this thesis into wider experiential research and identifies the key implications for VA management.

CHAPTER 2. THE CO-CREATION OF EXPERIENCE

2.1 Introduction

The following two chapters critically analyse the academic literature relevant to this study and focus on two streams of existing research, the co-creation of experience and interactive technology in a VA context. The literature review begins in Chapter 2 with an extensive analysis of the key experiential theories underpinning the thesis. Following a critique of key developments in experience research, service dominant (SD) logic is introduced and within that, the co-creation theory is extensively reviewed. As discussed in Chapter 1, conceptual developments in the service management/marketing fields have provided new ways of viewing the service relationship. Where once the connection between customers and service providers was viewed as a tangible exchange, there is now greater emphasis placed on the dynamic relationship that exists between these 'actors'. The process of co-creating experiences in a tourism context is an area gaining momentum in the academic literature and Chapter 2 adds to this discussion by focussing on the mediating platforms (namely technologies) that influence this process. The chapter closes with an evaluation of existing co-creation studies in the tourism context and highlights its relevance for the development of VA research.

2.2 Developments in Experience Research

It is widely acknowledged in the tourism literature, that the creation of memorable and enriching experiences is at the heart of the industry (Jorgenson, Nickerson, Dalenberg, Angle, Metcalf, & Freimund, 2018; Mossberg, 2007; Otto & Ritchie, 1996; Pizam, 2010; Ritchie, Tung, & Ritchie, 2011; Ryan, 2010). A comprehensive review conducted by Ritchie and Hudson (2009) identified a number of key works in tourism experience research which act as foundations for contemporary perspectives. As presented in Figure 1, provides an overview of some key concepts in experience research that have become firmly embedded in ongoing tourism research. To provide an overview of the development of scholarly work in experience, a number of seminal works

have been analysed. The literature indicates a progressive body of knowledge that has questioned the nature of experiences, the position of the customer and the role of management. Current thinking has moved to evaluate how experience are formed as dynamic processes however, early concepts still underpin much of this enquiry. As such, early works cannot be overlooked as key contributions to the field.

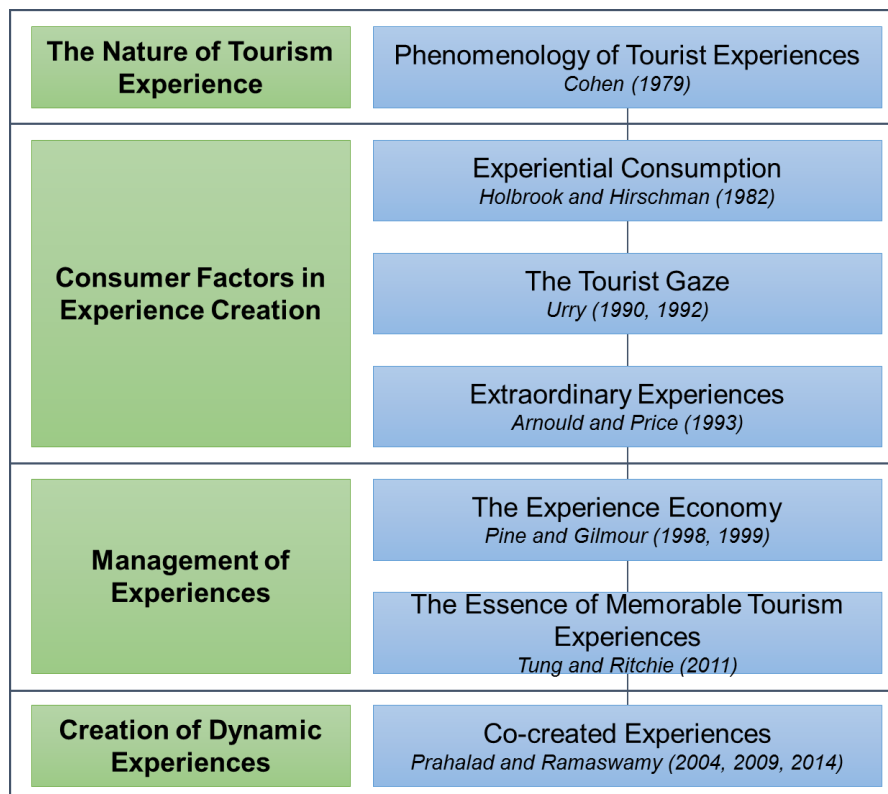


Figure 1. Key Concepts in Tourism Experience Research
Based on: Ritchie et al. (2011)

Prior to the development of tourism research as a distinct field, a number of experience-based studies appeared in leading sociology journals. A prime example is the work of Cohen (1972, 1979) whose 'Phenomenology of Tourist Experiences' has remained influential in experiential research. The author identifies tourism activity as unique in society and stress tourism experiences are a conscious departure from an individuals' daily routine. Cohen presented a typology based on the varying degrees of novelty and familiarity present in the travel experience. These ranged from mass-market pleasure-seeking

pursuits, to customised and individualised acts of 'pilgrimage'. This approach was one of the first to highlight the rich variety of tourism experiences, particularly in relation to the individual motivations of the tourist. Although an early example, the phenomenology reflects broader consumer trends that increasingly favour customised experiences and active participation (Poon, 1993), as opposed to mass market and pre-packaged tourism products (Holloway & Humphreys, 2012).

An alternative approach is presented by Holbrook and Hirschman (1982) who devised a conceptual model of experiential consumption. Drawing on a number of other consumer models, the authors identified the environmental and consumer inputs that contribute to the formation of consumption experiences. However, this particular work identified a mediating force (described as the 'intervening response system') for consumers. The authors suggest that the factors mediating consumer behaviour are crucial in understanding how experiences form. Through cognitive (knowledge/memory vs. subconscious perception), affective (attitude/preference vs. emotion/feelings) and behavioural (purchase decisions/choice vs. consumption experience/activities) factors, this study identifies some of the key factors driving experiences. The approach provided a vital meaning-based counterpoint to the established literature in service consumption (Obenour, Patterson, Pedersen, & Pearson, 2006) and widened the debate about what contributes to the development of individual tourism experiences (Lugosi & Walls, 2013; Snepenger, Murphy, Snepenger, & Anderson, 2004; Snepenger, Snepenger, Dalbey, & Wessol, 2007).

From a broader perspective, the 'Tourist Gaze' (Urry, 1990) provided a unique way to view of the consumption of tourism. The research identifies the tourist gaze as a 'way' of seeing tourism activity, and suggests that the way tourists view and consume tourism, can be understood and interpreted through the application of sociological principles (Urry, 1990; 1992). In particular, tourists consume tourism based on their social, cultural, historical and economic background in addition to mediating forces such as the mass media (Larsen, 2014). Urry (1990) identified the shift from producer-led, mass produced and

commodity-based views on consumption to consumer-led, differentiated and service-based consumption. Although this does continue to place customers in a 'consuming' and passive role, there are similarities with paradigm shifts found in the later experiential marketing literature.

Based firmly in the consumer perspective, Arnould and Price's (1993) study has been widely cited as providing insight into the nature of extraordinary experiences. The authors stress that memorable and cherished experiences are developed over time and are highly individualised to the hedonic motivations of the consumer including enjoyment, excitement, awe, nostalgia and so on (Coghlan, Buckley, & Weaver, 2012; Lee, 2015; Vittersø, Vorkinn, Vistad, & Vaagland, 2000). Similarly, Pullman and Gross (2003, 2004) conducted a series of studies questioning the impact of staging practices on consumer loyalty and satisfaction. In agreement with Arnould and Price, the authors recommended a need for service providers to understand and meet the emotional needs/motivations of consumers to better tailor service provision. These examples suggest a shift within the literature towards an increasingly customer-centric view of services. However, the ways in which these were managed and operationalised remained unclear.

In a new wave of experience research, scholars began to consider the management function and the ways that practitioners could plan and design successful experiences. A number of contributions proved highly structural in nature and explicitly related the various roles inherent to services to positions found in theatrical productions (Goffman, 1959; Lovelock, 1983). This new practice-based 'dramaturgy' was further developed to include the people and processes commonly found in the service environment (Grove & Fisk, 1992). The literature placed consumers into a clearly defined role as a recipient of the service (Deighton, 1992), in addition to management being cast as the designers of the experience. The perspectives shared common views on the structure of the service relationship. Consumers were seen as the audience, the service personnel as actors, the service space was the stage and stage management were present to control the environment.

Perhaps one of the most notable applications of the dramaturgical approach is the 'Experience Economy', in which Pine and Gilmour (1998, 1999) provided principles for 'staging' a successful service experience. The authors described a progression of economic value in society and suggested that companies, such as Walt Disney, had capitalised on this by selling enhanced experiences rather than tangible goods. At the heart of the experience economy, was the segmentation of consumer experiences into four dimensions. As shown in Figure 2, these dimensions were based on how absorbing or immersive an experience was, coupled with the level of customer participation. Pine and Gilmour further identified a 'sweet spot' that encompassed elements from each of the four dimensions. This was suggested to be the optimal blend for the best possible experience. The concepts of active participation and immersion reappear throughout experience-based studies and are particularly relevant to the work of Csikszentmihalyi (1997, 2000, 2002).

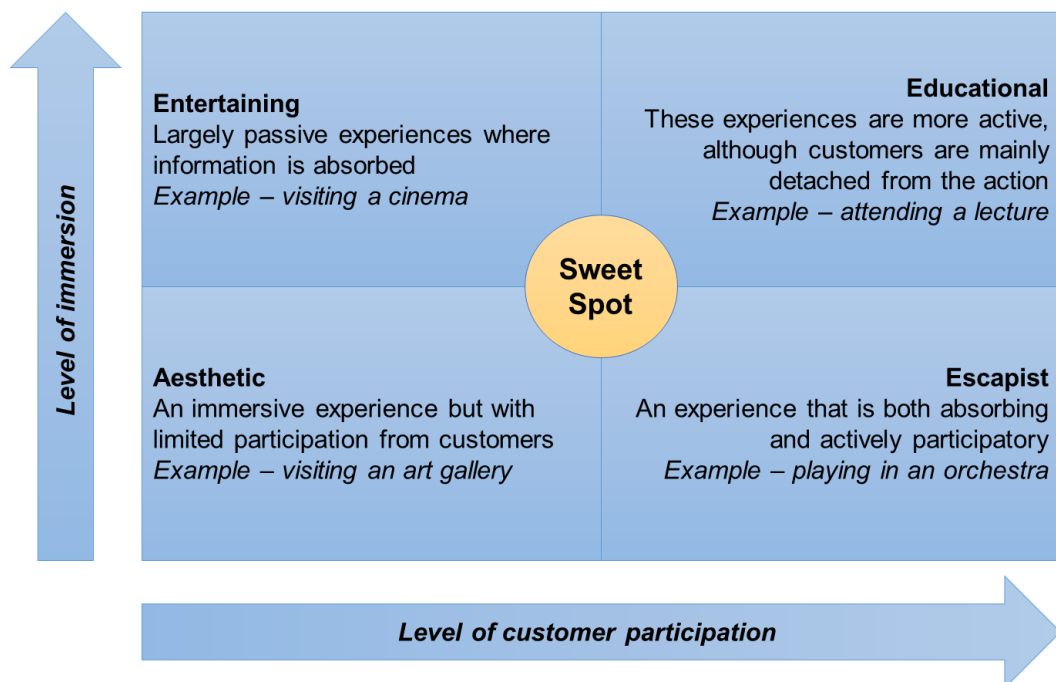


Figure 2. Dimensions of the Experience Economy
Based on: Pine and Gilmour (1998; 1999)

Csikszentmihalyi refers to the concept of 'flow' in human experiences. This can be described as a positive emotional state in which consumers are fully engaged and immersed in an activity. The consumer can become so involved with the experience, that time gradually becomes less important as engagement with the activity takes precedent. Interestingly, Csikszentmihalyi (1997) suggested that for a 'flow' experience to successfully develop, the customer must activate and use their individual skills to engage with the activity without becoming anxious, bored or negative. The flow concept further led to the 'experience sampling method' which has been used in selected studies to understand how customers evaluate their experiences in relation to the principles of 'flow' (Fave, 2007; Larson & Csikszentmihalyi, 1983; Rihova, 2013). This suggests that not only has experience research made valuable contributions in terms of academic theory, but also in dedicated methodologies that focus on the complexities of human experiences.

It could be argued that the structural nature of the dramaturgical perspective has made it particularly appropriate for industry application. However, the reliance on these studies in tourism research has had a segregating effect. By positioning individuals into defined roles such as "stage managers" and "audiences", dramaturgical theory has limited our view of the holistic experience. This is particularly relevant with regards to contemporary study that promotes fluidity in the roles and relationships found in the service environment. While there is undoubted novelty to these dramaturgical approaches, their rigid structure largely fails to acknowledge the organic and individualised nature of tourism experiences.

However, contemporary studies have borrowed certain aspects of the dramaturgical perspective and challenged the traditional theories. Edensor (2000) and Haahti (2003) draw attention to the staging capabilities in services as a crucial management factor. These enable and support customer experiences through the careful design and presentation of the service space. Similarly, within the domain of management control, is the need to develop a narrative that customers can engage with. As suggested by Stuart and Tax (2004) and Stuart (2006), in some service environments there is an

expectation of storytelling and as such it becomes necessary to structure the experience space through some degree of staging, however the extent to which the construction of experience environments can contribute to a co-creative experience is less well known. Moisio and Arnould (2005), acknowledged the need for greater consumer participation and a more dominant role in the service exchange, but maintains the structure of dramaturgical theory as an 'organising' resource useful for the planning function.

2.3 Dominant Logics and Co-creation

Since its popularisation in the marketing literature by Prahalad and Ramaswamy (2000, 2003), the concept of co-creation has rapidly become a prominent term in various academic fields. In a service marketing/management context, co-creation can be described as an interactive and collaborative process involving both the customer and service provider, which subsequently generates value (Prahalad & Ramaswamy, 2004a). The conceptual development was greatly advanced by wider theoretical shifts in the marketing discipline. Post-2000 saw a significant increase in conceptual research that provided new ways to view services and service systems (Berthon & Hulbert, 2003; Vargo & Lusch, 2004; Vargo & Morgan, 2005). Central to this emerging trend was the development of 'dominant logics' in marketing. These evolutionary perspectives provided vital stepping-stones for embedding co-creation into the academic literature.


The literature charts a gradual shift from a goods-centred model of exchange, to a service-centred approach with an increasing movement towards customer-focussed perspectives. With each stage, our academic understanding of the models of exchange have developed. As presented in Figure 3, the development of the dominant logics represented shifting worldviews on the nature of services and the processes that underpin them. Through Goods-dominant (GD) Logic, academics focussed on the tangible outputs of exchange. As considered by Vargo and Lusch (2008b), the core relationship in this logic, was between production and consumption. The consumer assumes a highly passive role, and the business views 'services' as

either an intangible good, or as means to enhance the value of their products. Put another way, from a GD perspective, services can be described as the 'packaging' for goods and of secondary importance to the product.

In contrast, Service-dominant (SD) Logic aimed to validate and justify the importance of services as the primary focus of economic exchange (Lusch, Vargo, & O'Brien, 2007). Seen as a key contribution to the development of marketing theory (Moussa & Touzani, 2010; Williams & Aitken, 2011), SD Logic posits that reciprocal service is the modern basis of economic exchange. Karpen, Bove, Lukas and Zyphur (2015, p. 90) expand on this process:

“SD logic provides a service-based view of marketing phenomena that regards service as the core reason for exchange, enabled primarily by operant resources such as knowledge and capabilities and actualized through value co-creation processes.”

A key feature of the SD approach is reciprocal relationships and as such, the sharing of operant (or intangible) resources between parties is of critical importance. From this perspective, value is not embedded in tangible commodities but in the service relationship that surrounds them (Grönroos & Gummerus, 2014; Gummesson, Lusch, & Vargo, 2010; Kryvinska, Olexova, Dohmen, & Strauss, 2013). It is an alternative worldview that attempts to blur the division and distance of power between the customer and the business in the service relationship. In summarising the key differences between the paradigms, Greer, Lusch and Vargo (2016, pp. 1–2) describe GD *“as a logic of separation... [whereas] SD logic implies interactivity and togetherness between service provider and beneficiary”*. Despite the theoretical arguments which emphasises multi-actors relationships in co-creation, there is a surprising lack of studies in tourism which consider both actors equally within the analysis. It is argued throughout this study, that only by acknowledging the perspectives of both the service provider (here the VA management) and the customer (the visitor) can an in-depth understanding of the factors influencing co-creation be achieved.



	Underlying Logic	Nature of value creation	Business-customer relationship	Key concepts
Goods-dominant (G-D) logic	Traditional perspective that focusses on the tangible nature of goods and economic exchange. Value embedded in the product and transactions.	<i>Value-in-exchange</i> Value is based on the tangible exchange of goods/products for monetary gain.	Business provides value propositions. Customer is the recipient of value.	<ul style="list-style-type: none"> • Tangibility • Transactional • Operand • Static • Rigidity
Service-dominant (S-D) logic	Perspective focusses on the intangible nature of services, the co-creation of value and the relationship between actors in the business network.	<i>Value-in-use</i> Value is actively co-created between the customer and the service provider and based on the use of the good/service.	Business provides opportunities Customer becomes an active co-creator of value	<ul style="list-style-type: none"> • Intangibility • Competence • Dynamic • Relational • Operant • Integration of resources
Customer-dominant (C-D) logic	Places the customer at the heart of the process rather than goods/services. Role of the business is to align with the social context of the customer.	<i>Value-in-life</i> Value is not created, it is formed. It is a behavioural process where customers interpret their experience and attribute value to it.	Customer creates their own value based on their context, activities, practices and experiences, alongside the service provider's activities.	<ul style="list-style-type: none"> • Customer independence • Customer-centric • Holistic value creation • Value realisation

Figure 3. Overview of Dominant Logics

Based on: (Berthon & Hulbert, 2003; Gummerus, 2013; Heinonen, Strandvik, Mickelsson, Edvardsson, Sundström, & Andersson, 2010; Li & Petrick, 2008; Vargo & Lusch, 2004, 2008b; Voima, Heinonen, & Strandvik, 2010)

The theoretical base of SD Logic was presented through a series of foundational premises (FPs). Originally, eight FPs were developed in Vargo and Lusch's (2004) paper, with an additional two being identified in 2006 (Vargo & Lusch, 2006). Since then, the FPs have come under intense scrutiny from the academic community. There have been criticisms, namely from O'Shaughnessy and O'Shaughnessy (2009, 2011) as to the foundational and theoretical implications of SD Logic. The authors reject many of the FPs as lacking in originality and academic rigour. In more recent publications, the ten FPs have since been altered and refined into four axioms (Vargo & Lusch, 2014) which reignites the theoretical debate in SD studies. As presented in Table 1, the refinement of the FPs indicate the gradual development of SD Logic into a state of maturity (Olexova & Kubickova, 2014), but the new axioms have attempted to both simplify and stimulate additional research into the area. While some authors suggest that co-creation can be viewed as a standalone concept (Ramaswamy & Ozcan, 2014), an understanding of the FPs in SD Logic provide a context for the development of co-creation as an area of academic study.

Original FPs <i>(Vargo & Lusch, 2004)</i>	Revised FPs <i>(Vargo & Lusch, 2008)</i>	Current Axioms <i>(Vargo & Lusch, 2014)</i>
FP1. The application of specialized skills and knowledge is the fundamental unit of exchange	FP1. Service is the fundamental basis of exchange	Axiom 1. Service is the fundamental basis of exchange
FP2. Indirect exchange masks the fundamental unit of exchange	FP2. Indirect exchange masks the fundamental basis of exchange	Axiom 2. The customer is always a co-creator of value
FP3. Goods are distribution mechanisms for service provision	FP3. Goods are a distribution mechanism for service provision	Axiom 3. All economic and social actors are resource integrators
FP4. Knowledge is the fundamental source of competitive advantage	FP4. Operant resources are the fundamental source of competitive advantage	Axiom 4. Value is uniquely and phenomenologically determined by the beneficiary
FP5. All economies are service economies	FP5. All economies are service economies	
FP6. The customer is always a co-producer	FP6. The customer is always a co-creator of value	
FP7. The enterprise can only make value propositions	FP7. The enterprise can not deliver value, but only offer value propositions	
FP8. A service-centred view is customer orientated and relational	FP8. A service-centres view is inherently customer orientated and relational	
	FP9. All social and economic actors are resource integrators	
	FP10. Value is uniquely and phenomenologically determined by the beneficiary	

Table 1. Refinement of Foundational Premises in SD Logic
Based on: Vargo and Lusch (2004; 2008; 2014)

An initial distinction between the GD and SD Logics is the understanding of value. As suggested by Grönroos (2006), traditionally value was based on the principles of exchange. Essentially, value was embedded in the good or product that was being exchanged between the customer and the firm. From the SD perspective, value is seen as emerging from use. Customers attribute value based on their use of a product or service. In a service context, this suggests that value is actively generated between the customer and the business, as opposed to being rooted in the tangible product (Vargo & Lusch, 2004). Whilst a vital development for SD Logic, the value-in-use principle failed to acknowledge the contextual elements that can impact how customers use goods/services. As can be seen through FP10, efforts were made by Vargo and Lusch (2008) to reflect these inconsistencies, and more recent texts often use the term 'value-in-context' in an attempt to recognise situational and contextual factors (Chandler & Vargo, 2011; Vargo, 2009). There are alternative views on the 'value-in-' discourse that appear throughout the literature, notably in relation to the process and mediating factors through which value is created. The value-in-experience approach is one such iteration. With more holistic reference to the customers' lived experiences, this approach highlights the individuality in how people perceive value. In this perspective, value is generated as a result of the holistic service experience in relation to the personal motivations, preferences and drivers of the individual customer (Helkkula, Kelleher, & Pihlström, 2012). In comparison to the widely held value-in-use approach, this perspective is less developed in the academic literature. Nevertheless, the value-in-experience viewpoint is particularly relevant to experiential products/services, such as those found in the VA sector. As such, this study is firmly grounded in the value-in-experience perspective to best reflect the sector under inquiry.

SD Logic posits a reciprocal relationship in value creation – particularly focussing on how it is generated between parties. However, further analysis is needed to understand how value is actually generated between the customer and the service provider. The literature surrounding co-creation identifies the relationship between 'value propositions and value realisations' as a main contributor to value creation. With reference to FP7, SD Logic suggests that

value cannot be supplied by the service provider, likewise it cannot be consumed by the customer. The firm can only provide 'value propositions', described by Mele and Polese (2011) as a mix of resources that are promised to the customer. These resources can be varied but are focussed on intangible benefits such as excitement. The crucial mechanism in this relationship is how these value propositions are received and evaluated by the customer. Value realisation refers to the ways in which the customer react to and reflects on the service they receive in comparison to the value propositions (Ballantyne, Frow, Varey, & Payne, 2011; Frow, McColl-Kennedy, Hilton, Davidson, Payne, & Brozovic, 2014). Through interaction and engagement between the firm and the customer, resources are shared and as such value is co-created in a reciprocal relationship (Gummesson, 2007; Verhoef, Reinartz, & Krafft, 2010).

The integration of resources is an important theme in the co-creation literature. As referred to in FP4, FP9 and Axiom 3 in Table 1, resources are a fundamental component of the service-based approach. Vargo and Lusch (2006) classify these resources as either operand or operant. The authors align operand resources closely with GD Logic, as these are primarily physical in nature and are acted upon to produce an effect. In contrast, operant resources are predominantly intangible and dynamic. More attuned to SD Logic, these resources are employed to act upon other resources to produce effects. Put simply, operand resources are instrumental in producing outputs, whereas operant resources are applied in the process of service provision (Lusch & Vargo, 2011). Crucial to this distinction is the position of customers as resources. Historically, customers were viewed as operand – they could be acted upon, targeted and directed. Through SD Logic, customers are seen as operant in that they can act upon other resources. This change in perspective positions the customer as an active contributor and co-creator of the value creation process (Lusch et al., 2007). As discussed by Gummesson and Mele (2010, p. 192):

“Value co-creation occurs by integrating actor resources in accordance with their expectations, needs and capabilities”

This is supported by Vargo (2008) who viewed resource integration from a network level. The various actors present in the service network (e.g. customers, firms, suppliers, distributors) contribute resources through co-creative practices and processes. Thereafter value is generated based on the success or failure of that resource integration, and the subsequent evaluation of value propositions against the perceived experience (Karpen et al., 2015; Kohli, 2006; Vargo & Lusch, 2014). Despite these arguments, less is understood as to the extent to which resource integration can influence co-creation, particularly in experiential contexts. Furthermore, the degree to which customers are empowered to integrate their resources with the value propositions offered by the service management is in need for further research.

A central tenet of the co-creation approach is the changing position of the customer and the service provider in the service relationship. The shifting role of the customer was simply but effectively summarised by Prahalad and Ramaswamy (2000, p. 3) who stated, *“consumers can now initiate the dialogue; they have moved out of the audience and onto the stage”*. The use of terminology here undoubtedly posed reference to the roles identified in dramaturgical service theory, which had previously dominated the service management literature. Nevertheless, the equalisation of roles within the service encounter is a common theme running through the co-creation literature. For example, Saarijärvi, Kannan and Kuusela (2013) suggest that customers can constantly reconfigure their roles, shifting simultaneously between customer, contributor and creator depending on the context. Similarly Vargo and Lusch (2010) discuss the complex web of value-creating relationships that have redefined the historically rigid roles of “consumers” and “service providers”. The authors go on to stress the collaborative and reciprocal nature of this co-creative relationship that is reliant on a proactive levelling of the customer/producer roles.

However, Binkhorst and Den Dekker (2009) take a different view with what they term ‘a network approach’. This is an example of the contemporary co-creation literature attempting to further dissolve the rigid terms in the service relationship such as: customer; consumer; producer; host; supplier; or

intermediary. The authors align with contemporary publications that suggest merging these terms into collective actor-to-actor (A2A) relationships (Gummesson & Mele, 2010; Gummesson, Mele, & Polese, 2018; Kohli, 2006). Although the service ecosystem approach (which stresses the interrelation and connectivity of actors within a business network) is developing in the academic literature (Breidbach, Brodie, & Hollebeek, 2014; Frow et al., 2014; Kuppelwieser & Finsterwalder, 2016; Vargo & Lusch, 2010, 2016), there are difficulties with removing such terms as customer and service provider. As indicated by Vargo and Lusch (2008), finding a suitable alternative to represent these roles and aligning them with SD Logic remains complex. On a basic level, the unification of these terms to all encompassing 'actors', would make it very difficult to recognise the individual inputs made by various parties. The co-creation of experience involves the interplay between the platforms offered by the service provider and the customer as an individual. To remove these titles completely would under-acknowledge the subtle roles that various stakeholders have in establishing co-created relationships (Pires, Dean, & Rehman, 2015). As such, further understanding of the multi-actor co-creative relationship can be seen as a budding area for future research (Frow et al., 2014; Pera, Occhiocupo, & Clarke, 2016; Storbacka, Brodie, Böhmann, Maglio, & Nenonen, 2016) and it is therefore necessary for this study to equally acknowledge both the visitor and the VA manager within the co-creative process.

There is evidence in the literature of a new dominant logic in service marketing that acknowledges the crucial role of the customer in the value creation process. Customer-dominant (CD) Logic provides an alternative viewpoint to the service-dominant perspective. Voima et al. (2010) argues that SD Logic is inherently firm-centric and fails to fully recognise the dynamic nature of the customer in the service relationship. Put forth by Heinonen et al. (2010) and Heinonen, Strandvik and Voima (2013), CD Logic places the customer at the heart of the relationship. Furthermore, the focus of this perspective is about what customers are doing with the service, rather than what the service is doing for the customer.

CD Logic views value as being formed as opposed to being created and places great emphasis on the broader social context of the customer, such as life experiences, motivations and values (Schlager & Maas, 2012; Tynan, McKechnie, & Hartley, 2014). As Heinonen et al. (2013, p. 109) states:

“Value emerges through customers’ behavioural and mental processes when customers interpret experiences and reconstruct an accumulated customer reality where value is embedded.”

CD Logic is firmly rooted in interpretivist teachings in which there are multiple realities that are socially constructed and interpreted individually (Botterill & Platenkamp, 2012). This contextual theme reoccurs throughout the literature surrounding CD Logic. For example, Edvardsson, Tronvoll and Gruber (2011) suggest that customer value is formed as result of the experiential and phenomenological position of the customer in relation to their social context. The social actors, structures and systems that surround the customer in their specific context will therefore impact how they perceive the value of a product/service. This is furthered by Voima et al. (2010) who suggest a ‘value-in-life’ perspective, in which the context of the customer is extended to incorporate their individual history, personal values, behaviours and attitudes. The authors suggest that each of these contextual factors impact the customers’ value formation processes and subsequently affect how customers attribute value to a service experience.

There have however, been criticisms of CD Logic for its applicability to industry (Anker, Sparks, Moutinho, & Grönroos, 2015) and its potentially extreme view of the customer position (Gummerus, 2013). Theoretically, CD Logic posits that value creation is solely determined by the customer. It could be argued that this under-appreciates the role of the service provider in the co-creation process. From this view, the business acts to support the customer in creating their own value and can only react to needs and wants of the customer (Heinonen et al., 2010). This conflicts with much of the wider co-creation literature that promotes equal involvement and interaction from both actors in the relationship. While the CD perspective provides a useful direction for customer-centric research, it is argued that the service provider in certain

experience-based sectors (such as tourism and VAs) plays a more important role than a 'supporter' to the customer. As such, more research is required to understand the joint contributions made by both the customer and the customer in the co-creation of experiences. SD logic is well-placed to explore this mutual relationship and acts as the driving theory for this study.

While undoubtedly a unique way to examine the service relationship, the co-creation concept and related research has faced criticisms over its applicability. In the Journal of Service Management, Grönroos and Ravald (2011, p. 6) notably said that *"the concept of value co-creation has to-date been treated on a level of abstraction too far removed from theoretical and practical analysis"*. This indicates that even after a decade of academic research, the concept of co-creation remains ambiguous and with scope for further refinement. Similarly, Ordanini and Pasini (2008) argue that despite the co-creative ethos being acknowledged, there is a significant gap between theory and practice. Whilst academia is focussing on driving emerging co-creation theory forward, practitioners are more focussed on exploring the applicability of co-creation as a rewarding business model. To counteract this, an objective of this study is to not only provide a new theoretical conceptualisation of experience co-creation, but also to provide key contributions to professional practice through management strategies.

From a conceptual standpoint, Alexander (2012) suggests that part of the ambiguity is due to the lack of consistent terminology. At present there is a lack of consensus as to the similarities or differences between terms such as: prosumption (Ritzer & Jurgenson, 2010; Zwick, Bonsu, & Darmody, 2008); co-creation; co-production (Chathoth, Altinay, Harrington, Okumus, & Chan, 2013); co-construction (Chronis, 2005a); co-invention (Scott, Laws, & Boksberger, 2009); and co-destruction (Plé & Chumpitaz Cáceres, 2010). Even within co-creation studies there are further inconsistencies in the terminology used to identify parties within the relationship. The use of 'customer', 'consumer' or 'actor' have very different connotations within the literature and represent different theoretical standpoints in co-creation research. The tourism context adds further complexity by adding 'visitor',

'tourist', and 'traveller' into the discussion. A number of these are used interchangeably throughout the literature, which has led to confusion over the conceptual position of such research and how they align with mainstream service management terms. Where possible, visitor is the preferred term of choice in this thesis, however due to the use of interdisciplinary theory from various fields, it has been unavoidable to omit the use of 'customer' and 'consumer' entirely.

As shown throughout this section, the concept of co-creation has moved forward significantly from its origins in the service marketing/management fields. The core concept has been sub-divided into a number of perspectives, iterations and research streams. In a systematic bibliometric review of 421 peer-reviewed articles on co-creation published between 2000 and 2012, Galvagno and Dalli (2014) concluded that the co-creative approach had almost reached a paradigmatic status which poses significant opportunities for fields such as tourism. For instance, when applying the co-creative approach to the tourism industry and more specifically VAs, that are based on experiences, greater focus must be placed on the co-creative process from an experiential perspective. This is an area which has scope for development in the tourism literature. Existing research has so far largely relied on experience concepts developed from within the field, rather than exploring conceptual developments from neighbouring disciplines.

2.4 The Experiential Perspective on Co-creation

The literature surrounding co-creation has become increasingly fragmented. While this makes the study of co-created processes, relationships and environments complex, it has also generated niches and iterations that can be applied to a variety of contexts. One distinction that has been made with clear applications to tourism research is the concept of co-created experiences. What distinguishes this approach from the widely published value-orientated perspective, is the shift in focus from goods and service-centric studies towards those grounded in the experience that is generated as a result of interactions between the service provider and the customer (Dumitrescu, Stanciu, Țichindelean, & Vinerean, 2012). Put another way, the focus of this

stream of co-creation places the importance on the actions and platforms that facilitate customers in actively producing experiential outcomes (Dahl & Moreau, 2007).

In an extensive literature review of experience research in tourism, Adhikari and Bhattacharya (2015) identified two main streams of academic literature. The authors suggest that one area of research views experiences as a product attribute, whereas the other views an experience as a product in of itself. The authors suggest that the latter stream of research often questions 'how' experiences are formed. Studies in co-created experiences often fall into this category. For example, Mathis, Kim, Uysal, Sirgy and Prebensen (2016) question the underpinning constructs of experience co-creation, particularly with regards to potential outcomes. The authors suggest, that for experiences to be truly co-created between parties there must be: increased customer participation; a feeling of trust and equity between the customer and the service provider; an environment that facilitates an open dialogue/exchange; and opportunities for enhanced social interaction. The outcomes of this process can be varied, however there is evidence to suggest that authentically co-created experience not only support customer satisfaction (Dong, Evans, & Zou, 2008; Grisseemann & Stokburger-Sauer, 2012) but can also have positive effects on customer loyalty (Blazquez-Resino, Molina, & Esteban-Talaya, 2015). Despite these viewpoints, less is known about the influencing factors that can contribute to the co-creation of experience in various contexts. As such, this study aims to identify the various factors (both individual and shared) which can influence and potentially foster experience co-creation in VA contexts specifically.

The emerging value-in-experience literature provides a key distinction in the co-creation approach. As discussed by Ramaswamy (2011, p. 195):

“The fundamental shift here was going beyond the conventional ‘services’ mindset to an experience mindset – defining value based on human experiences rather than service processes”

This is reflected in the considerable body of literature exploring the co-creation of the customer experience. As suggested by Prahalad and Ramaswamy (2003), it is the interactions and engagements between the firm and the customer that co-create the experience; thereafter value is attributed by the individual based on their experience. This perspective of co-creation is therefore focussed on the interactions between actors in the creation of memorable and unique experiences (Helkkula et al., 2012; Jaakkola, Helkkula, & Aarikka-Stenroos, 2015a). Furthermore, it posits that the attribution of value is deeply individual and emerges as a result of individual customer judgements. This echoes the works of Gupta and Vajic (2000) and Woodside and Dubelaar (2002), who proposed that individuals build an experience incrementally, through interactions with context-specific factors provided by the service provider. A number of authors have identified contributing characteristics, which make the study of customer experiences complex. Factors including: consumer attitudes; motivations; price sensitivity; customer involvement; time; and cultural variations (Akaka, Vargo, & Schau, 2015; Boswijk, Thijssen, & Peelen, 2005; Palmer, 2010; Verhoef et al., 2009; Volo, 2009) can make generalising in experience research inherently complex. In accordance with these arguments, this study has employed a qualitative, interpretative research methodology that celebrates the individual social constructions of participants, which will be discussed in Chapter 4.

Whilst still an emerging area of study, a number of authors have drawn parallels with the wider co-creation literature. Gentile, Spiller and Noci (2007) discuss the company's role in providing 'value propositions vs. value realisations' and the customer's role in balancing 'value perceptions vs. value expectations'. Similarly, Chen's (2011) value-in-experience research is based on extending the ten foundational premises of SD Logic (cf. p16), to acknowledge the 'efforts' made by the service provider and the customer in co-creating in a physical experience rather than just determining its value. Both works demonstrate links to the dominant co-creation of value concept and overarching SD Logic, however there are subtle differences. The experience-centric focus presents value as being embedded in the customer experience (Poulsson & Kale, 2004; Prahalad & Ramaswamy, 2004a). Likewise, the types

and levels of customer participation in the experience are emphasised in these works. As considered by Füller, Hutter and Faullant (2011), individuals take part in creative, interactive activities to fulfil hedonic needs for enjoyment, competence and autonomy. From a co-creation perspective, these relate to the level of control, freedom of choice and range of interactive opportunities that consumers can engage with to generate an individualised and customised experience (Etgar, 2008; Niininen, Buhalis, & March, 2007; Prahalad & Ramaswamy, 2004b; Sandström, Edvardsson, Kristensson, & Magnusson, 2008).

A widely cited model of co-creation is presented by Prahalad and Ramaswamy (2004a, 2004b). As shown in Figure 4, the DART model identifies four criteria that influence the co-creation of value. The authors suggest that successful co-creation requires meaningful and mutual *dialogue* between the firm and the consumer. In addition, the DART model encourages a shift in focus from owning products to *accessing* information and experiences. With enhanced dialogue and access comes the need for *risk assessment*. The authors argued that as a consumer becomes more involved in the co-creation of the service, there is the heightened potential for harm or dissatisfaction. Finally, *transparency* is seen as critically important to co-creation. The authors argued that for co-creation to manifest equitably, there must be a level of trust between the firm and the consumer. This is particularly relevant with regards to pricing, costs and expectations. While these components have been integral to the academic understanding of co-creation, they have been criticised for their relation to practice and in particular, their lack of transferability to tourism, hospitality and events sectors (Mazur & Zaborek, 2014). Furthermore, this thesis argues that these criteria need to be adapted to address the experiential nature of the tourism industry and VAs in particular. As such, this thesis has explored the factors which influence the co-creation of experience from both the visitor and management perspective, and synthesised these to identify four building blocks which extend the DART model into a technology-mediated and experiential context. It is however necessary to define experience co-creation specifically, to act as a theoretical framework for the thesis.

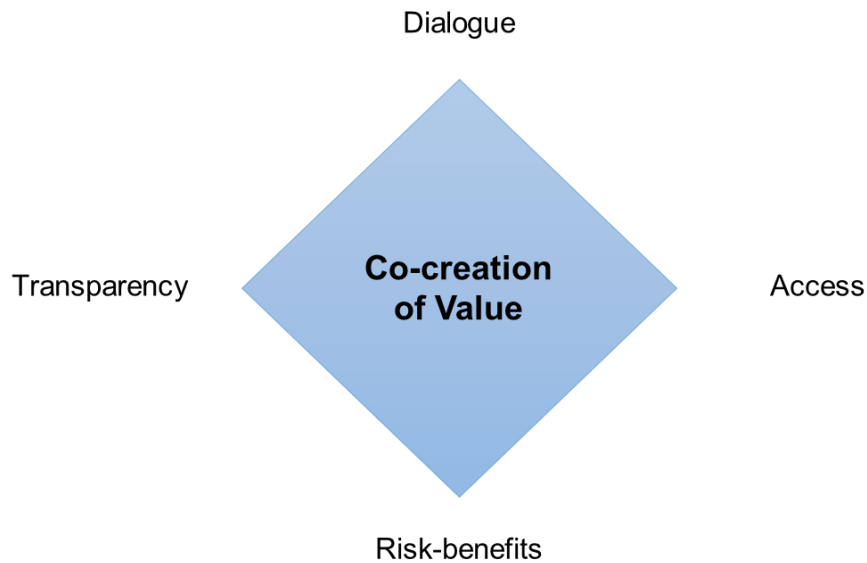


Figure 4. The DART Model of Co-creation
Replicated from: Prahalad & Ramaswamy (2004, p. 9)

2.4.1 Defining Co-created Experiences

As a widely debated concept, co-created experiences can be defined in a multitude of ways. Table 2 synthesises many of the main definitions currently in the academic literature and considers their relevance to this study. As identified in Section 1.2, the aim of this study is to examine the role and application of interactive technology in the co-creation of visitor experiences in Scottish visitor attractions, as such it is necessary to evaluate the various definitions and conceptualisations of experiential co-creation that act as a theoretical framework for this thesis. Section 2.4.1 closes with the working definition of experience co-creation that has been developed for the purpose of this study.

Table 2. Definitions of experiential co-creation

Author(s), Year	Focus	Definition	Relevance
Prahalad & Ramaswamy (2004a)	Co-creation as a source of competitive advantage and the value of experience environments.	"High-quality interactions that enable an individual customer to co-create unique experiences with the company are the key to unlocking new sources of competitive advantage. Value will have to be jointly created by both the firm and the consumer...Creating an experience environment in which consumers can have active dialogue and co-construct personalized experiences; product may be the same (e.g., Lego Mindstorms) but customers can construct different experiences." (p7-8)	The environment plays a critical role within the co-creative process.
Gentile et al. (2007)	The personal interactions, involvement and engagement between actors in the experiential process.	"The Customer Experience originates from a set of interactions between a customer and a product, a company, or part of its organization, which provoke a reaction. This experience is strictly personal and implies the customer's involvement at different levels (rational, emotional, sensorial, physical and spiritual). Its evaluation depends on the comparison between a customer's expectations and the stimuli coming from the interaction with the company and its offering in correspondence of the different moments of contact or touch-points." (p397)	Highlights the various layers of customer involvement that can contribute to experience co-creation.
Binkhorst & Den Dekker (2009)	Consumer-orientated perspective that suggests individual context governs co-creation.	"The co-creation experience results from the interaction of an individual at a specific place and time and within the context of a specific act. A real co-creation experience is neither company nor product centred. The better companies focus on the consumer context and match with the individual's living environment, the more the co-creation experience value increases." (p315)	The importance of context (both individual and sectoral) on the co-creation of experience.
Tynan & McKechnie (2009)	Role of customer in the co-creative process.	"...S-D logic requires a totally different approach in terms of working with the customer as partner to configure the offer including an extended range of value from sensory, emotional, functional/utilitarian, relational, social, informational, novelty and utopian sources, communicating and developing that offer, co-creating the negotiated experience, and understanding and evaluating the experience post-purchase." (p512)	Dialogical relationship inherently linked to negotiated experiences.
Prebensen & Foss (2011)	Consumer perspective and a focus on the actions and interactions that contribute to customer-driven co-creative experiences.	"Co-creation of experiences, as a theoretical construct, reflects the consumer as taking an active part in consuming and producing values ... and deals with customer involvement in defining and designing the experience." (p55)	A need for active involvement in experience co-creation.

Sfandla & Björk (2013)	Process-based view on co-creation that identifies the interrelationship between firms and tourists.	"Firms, in their facilitation processes, are interlinked through adding and exchanging value to support the co-creation of experiences with tourists, whereas tourists, in their processes, are interlinked in using firms' resources, performances and experiential components for achieving positive experiences. The co-creation of experiences here arises during exchanges, usage and interactions between facilitators and tourists in relational processes supported by value notions and value- in-conceptions." (p502)	Service provider acts as a facilitator. Need for relational exchange.
Calver & Page (2013)	Experiences uniquely created through active involvement.	"Visitors are dynamically involved in the creation of their own experience from the stimulus provided by the attraction, in order to derive enjoyment for themselves and their social group. This research suggests that heritage attractions of either orientation can facilitate visitor enjoyment and the hedonic aims of the visitor by actively encouraging involvement in the heritage corpus." (p34)	Service management cast as facilitators who can provide the stimuli for the experience, but not the experience itself.
Mustak, Jaakkola, & Halinen (2013)	Customer involvement in co-creation.	"[From the theoretical perspective of co-creation] customer participation in the creation of offerings refers to a customer's activities or provisions of tangible or intangible resources related to the development or creation of offerings." (p352)	Integration of resources for the co-creation of product offerings.
Minkiewicz, Evans, & Bridson (2014)	Explores the process of experiential co-creation from the consumer perspective.	"...conceptualising co-creation from a consumer perspective and suggesting three dimensions. These dimensions are conceptualised in terms of an individual consumer's active participation in one or more activities performed in the experience (co-production), psychological state of cognitive and emotional immersion (engagement), and tailoring of the experience to meet their needs through customisation, interaction with service representatives, and technology (personalisation)." (p49)	Considers the consumer actions contributing to co-creation: co-production; engagement; and personalisation.
Jaakkola, Helkkula, & Aarikka-Stenroos (2015b)	Conceptualisation of generic service experience co-creation.	"Service experience co-creation occurs when interpersonal interaction with other actors in or beyond the service setting influences an actor's subjective response to or interpretation of the elements of the service. Service experience co-creation may encompass lived or imaginary experiences in the past, present, or future, and may occur in interaction between the customer and service provider(s), other customers, and/ or other actors." (p193)	Co-creation emerges as a result of multi-actor interaction and can be diffused across various stages of the experience.
Campos, Mendes, Valle, & Scott (2015)	Psychological perspective of co-creative tourism experiences that identified consumer antecedents contributing to co-creation.	"A co-creation tourism experience is the sum of the psychological events a tourist goes through when contributing actively through physical and/or mental participation in activities and interacting with other subjects in the experience environment." (p391)	Co-created experiences are personal and individually determined through physical and mental processes.

Table 2. Definitions of experiential co-creation

As shown in Table 2, many of the definitions of experience co-creation have similar components but are linked to specific perspectives (such as consumer-focussed, psychological, resource-based or process-orientated). A dominant theme running through each of the definitions is shifting position of the consumer from a passive recipient to an active participant in their own experience. This is well established in the co-creation/SD Logic literature (Lusch & Vargo, 2006; Prahalad & Ramaswamy, 2004b; Vargo & Lusch, 2008a); how this manifests in practice is less agreed upon.

A number of authors advocate the need for dialogue and/or active participation in the co-creative experience, whereas Gentile et al. (2007) goes further by suggesting that customers can become involved in a multitude of ways, such as emotionally, physically, spiritually or on a sensorial level. Sfandla and Björk (2013) explores the dyadic tourist-firm relationship and its impact on co-creation, whereas Jaakkola et al. (2015b) questions the macro-level perspective where co-creation exists as a multi-actor process. Lastly, Prahalad and Ramaswamy (2004a) stress the importance of the experience environment at an organisational level, while Binkhorst and Den Dekker (2009) focus more exclusively on the consumer context and lived environment as contributing to experience co-creation.

The plethora of definitions for experiential co-creation make it particularly difficult to ground this thesis in one particular perspective. Furthermore, despite the theoretical development of experiential co-creation in tourism, hospitality and events, the existing definitions are fragmented and fail to highlight the various interactions, actors and processes that contribute to experience co-creation. As such, the working definition below has been synthesised from the perspectives shown in Table 2, to acknowledge the variety of characteristics that contribute to the successful co-creation of visitor experiences. This definition has been developed on the basis of those presented in Table 2 and provides a more coherent theoretical frame for the purpose of this study:

Experience co-creation is a multi-actor process that is afforded by active physical and/or virtual interaction, relational dialogue and participation within defined experiential environments. The visitor, in collaboration with the service provider (as a facilitator), and other stakeholders integrate their individual resources in the creation of unique and personalised experiences.

The definition above integrates the interactional/relational basis of co-creation with a multi-actor approach (based on Gentile et al., 2007; Jaakkola et al., 2015b; Tynan & McKechnie, 2009). Collaboration, dialogue and participation are cited (based on Campos et al., 2015; Minkiewicz et al., 2014; Prebensen & Foss, 2011), in addition to the experiential environment and the importance of an individual context (based on (Binkhorst & Den Dekker, 2009; Prahalad & Ramaswamy, 2004a). Finally, the role of the service provider as a facilitator is reaffirmed (based on Calver & Page, 2013; Sfandla & Björk, 2013) alongside the need for individualised resource integration (based on Mustak et al., 2013). The definition is firmly grounded in the experiential perspective of co-creation, as opposed to value, and recognises the iterative, individual and subjective experiences that exist within the VA context. It acknowledges the multi-actor relationship that exists within co-creation and emphasises the integrative nature of this process. This definition encapsulates many of the perspectives currently present in academia, it provides a suitable base for this exploratory study which questions technology-mediated experience co-creation in the VA context.

- *Co-creation versus Co-production*

In addition to the various definitions of experiential co-creation identified in Table 2, a distinction does need to be made between *co-creation* and *co-production*. Kohtamäki and Rajala (2016) argued that, under SD Logic, co-production is considered as a sub-process of co-creation. In effect, the authors suggested that value propositions could be co-produced through multi-actor collaboration, whereas the experience (and value assessment) of these propositions emerged through their use and through active co-creation. Whilst often used synonymously in the service management literature, the two terms are quite different in how they manifest within the customer-business relationship and the level of customer input within the service offering.

Similarly, Minkiewicz, Evans and Bridson (2014) argued that acts of co-production were part of the overall co-creation experience. The authors suggested that physical interaction and participation went some way to actively co-producing elements of the VA product that contribute to the overall experience. This does however highlight the theoretical complexity associated with separating these concepts and a need to view co-creation and co-production as ends of a wider continuum of actions.

	Co-production	Co-creation
(1) Value creation	Extraction of economic value Quality products and services	Creation of unique personalized experiences
(2) Customers' role	Passive (rely on the physical environment provided) Perceived as a resource	Active (provide input to service provider before, during, and after the service) Information provider Value creator
(3) Customers' participation	Mainly at the end of the value chain	Repeated interactions and transactions across multiple channels Serves as an operant resource
Customers' expectations Key actors	Suit their needs to what is available Managers and employees	Co-create products and services with customers Customers, managers and employees
(4) Focus	Production and company centric	Customer and experience centric Engaging customers High level of information processing
(5) Innovation	Led by the firm	Co-innovate and co-design with customers Learning from customers (opinion leaders and trendsetters) and the process
(6) Communication	Listening to customers Less transparent	Ongoing dialogue with customers Open and transparent communication

Source: Dellande et al. (2004), Friesen (2001), Grönroos (2008), Lusch and Vargo (2006), Payne et al. (2008), Prahalad and Ramaswamy (2004a,b), Vargo and Lusch (2008a), Xie et al. (2008).

Figure 5. Comparing co-production and co-creation
Source: Chathoth et al. (2013, p. 15)

As identified in Figure 5, a number of key theoretical distinctions exist between co-production and co-creation. The following sections consider the theoretical differences with reference to the VA context and end- with a justification for the choice of co-creation as the dominant perspective for this study.

- Output vs. service experience

A critical distinction between co-production and co-creation is the focus placed on the output or the service experience that can generate an output. Lehrer, Ordanini, DeFillippi and Miozzo (2012) suggested that co-production has a closer affinity with design-intensive service sectors that focus on collaborative innovation and user-centred innovation. This is particularly relevant for IT services where part of the service offering involves multi-actor collaboration for the design of customised services for clients. Ranjan and Read (2016) agreed, by highlighting the integration of knowledge, skills and expertise from various actors, to support the development of new services as a central component of co-production. To summarise this key theoretical difference, co-production is more closely aligned with the development of service outputs (Hunt, Geiger-Oneto, & Varca, 2012; Parry, Bustinza, & Vendrell-Herrero, 2012) whereas co-creation is more focussed on the experiential journey that leads to the output.

- The role of the customer and their activities

A further distinction can be made as to the role of the customer and their activities within the co-productive or co-creative perspective. Chathoth et al. (2013) argued that the two perspectives implied different customer roles and levels of activities. Under co-production, the customer can be viewed as more passive and reactive to the firm. They are perceived as a resource that can assist the firm in the generation of outputs and as such they largely participate toward the end of the value chain (ibid, 2013). In contrast, under co-creation, the customer is viewed as an active co-creator who is dominant within the service experience (Akaka et al., 2015). Rather than being viewed as a passive resource, customers in this perspective can integrate their own knowledge, skills and expertise upon other resources (such as technology) which leads to value co-creation (Ordanini & Pasini, 2008). In viewing co-production as a contributor to co-creation, Harrison and Waite (2015, p. 516) caution service providers against excessively relying on consumers to produce outputs:

“Co-production is thus a double-edged sword: on the one hand, it can be empowering and liberating for some consumers leading to value co-creation, but for others, it can be confusing, paralysing and exploitative and actively contribute towards the destruction of value.”

This does reignite questions over the level of activity that customers engage in and highlights a need for a balance between firm-designed engagement platforms that provide opportunities whilst guarding against customers feeling exploited.

- Stage of the service

A further distinction between co-production and co-creation can be identified at the point in which they occur within the service experience. Etgar's (2008) work considered co-production practices as being largely reserved to the production process which precedes the consumption/usage stage of the service. In contrast, co-creation and its associated practices exist within the on-site usage stage (Shaw, Bailey, & Williams, 2011). While this does delineate the scope of co-production/creation into the initial and on-site stages, it could be argued that it neglects to acknowledge the post-service experience. In applying Etgar's (2008) interpretation to the VA context, it could be further said that co-production can exist in both pre-visit and post-visit stages, whilst the personalised nature of the on-site experience is more closely linked to the co-creative perspective. Table 3 provides examples of activities associated with both co-production and co-creation within the pre, in-situ and post-visit stages of the VA environment, to illustrate how the stage of the service can dictate the nature of interaction between actors.

	Pre-visit	In-situ	Post-visit
Concept	Co-production	Co-creation	Co-production
Manifestation	Engagement of actors in the production of new products, services or innovations.	Participation in the on-site experience mediated by interactive technology.	Reflection and post-visit engagement that leads to development of new outputs.
Examples of visitor activities	<ul style="list-style-type: none"> • Input into exhibition design/development. • Participation in pre-visit activities such as social media 	<ul style="list-style-type: none"> • Interaction with engagement platforms (physical or virtual) • Customisation of experience through tailored activities. 	<ul style="list-style-type: none"> • Development of user-generated content. • Involvement with future projects/ master planning.
Examples of VA management activities	<ul style="list-style-type: none"> • Integration of knowledge/expertise into exhibition content. 	<ul style="list-style-type: none"> • Selecting and providing opportunities for engagement, interaction and dialogue • Exhibition design 	<ul style="list-style-type: none"> • Hosting evaluation events to direct future development • Engagement of stakeholders in new product development

Table 3. Co-creation and co-production in relation to stage of service
Source: Author

- Dialogue and flow of communication

In final reference to the criteria listed in Figure 5, a distinction that can be made between co-production and co-creation is the role, direction and depth of dialogue and communication within the service experience. The key difference relates to how multi-actor dialogue is being used and encouraged within the service. Co-productive perspectives would argue that customer dialogue can be exploited to lead to the creation of outputs (for example collecting customer feedback exclusively for new product development). In contrast, co-creative perspectives view dialogue as a part of the service experience (for example encouraging customers to engage with service personnel or other touch-points) (Payne, Storbacka, & Frow, 2008).

Transparency also emerges as component that separates co-production and co-creation. As identified in the DART model (cf. p27), transparency of information is critical to co-creative processes. Within the co-productive perspective, the more sporadic flow of communication between customer and firm can be seen as less transparent in the extent to which it influences real change. Put another way, co-productive communication is largely based on being reactive to customers whereas co-creative communication is about

proactively engaging customers in mutual dialogue. Opportunities for consistent and meaningful communication is seen as more transparent and acts as a foundation for successful co-creative experiences (Ramaswamy & Ozcan, 2018).

For the purpose of the thesis, the co-creation perspective is used as opposed to co-production to align more closely with experientially-driven research. The focus of this study is to explore how interactive technology contributes to the co-creation of the visitor experience, rather than how a tangible good/service is co-produced between two actors. In considering the four key differences above, the study focussed on the experience that is co-created rather than tangible outputs that are co-produced. It places the visitor at the heart of the process, while the VA management provide opportunities and the space for engaging experiences, the exact nature of that experience is determined uniquely by the visitor. The study explores the in-situ stage of the experience where technology forms part of the product offering and acts as a mediating force for co-creation. Finally, the study argues that dialogue is facilitated by interactive technology for enhancing experiential benefits (as in the co-creative perspective) as opposed to being managed for the production of new products, services or innovation.

The positioning of this research can be further illustrated against Chathoth et al.'s (2013) co-production to co-creation matrix. As indicated in Figure 6, the authors argued that continuous involvement and dialogue coupled with value being attributed within the consumption/usage stage led to a strong co-creative approach. In the VA context captured within this study, the value can be seen as emerging as a direct result of the experience as it is perceived by visitors. Similarly, VAs support continuous involvement/dialogue through their use of engagement platforms, interactive technology and service personnel. As such, the co-creation perspective, rather than co-production, aligns more closely with the unique experiential nature of the VA product explored within this thesis.

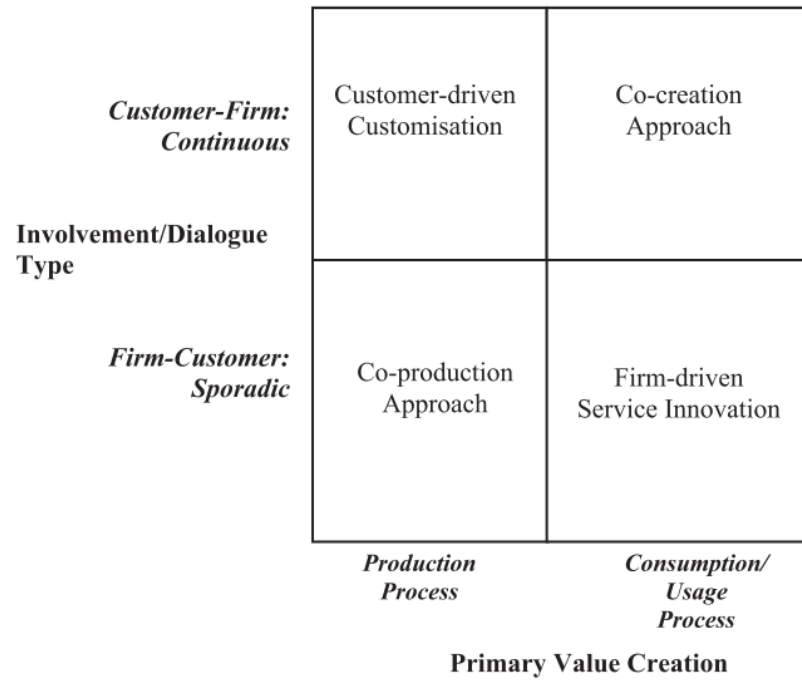


Figure 6. The co-production to co-creation matrix
Chathoth et al. (2013, p. 16)

2.4.2 Reconsidering Actors and Roles in Co-creation

As discussed throughout Section 2.4.1, co-creation of experience involves a multi-faceted relationship between a variety of actors in the service environment. This mutual relationship (built on dialogue, engagement and customisation), can lead to the co-creation of value. Early works in co-creation focussed on the dyadic relationship between firm (including employees) and customer as two chief actors in the co-creative process (such as: Cova & Dallı, 2009; Payne, Storbacka, & Frow, 2008). Further work by Vargo and Lusch (2008b) expanded the potential actors beyond the business-customer level to include wider human agents and groups including communities, societies and nations. Similarly, Chandler and Vargo (2011) elevated the range of actors further by considering ‘systems of actors’ which included external stakeholders (such as consultants and policy-makers) and wider contexts (markets, legislative frameworks and networks). However, while the majority of current thinking in co-creation has largely focussed on human actors, emerging research has increasingly begun to question the role of non-humans (specifically machines) in the co-creative process.

In considering actor relationships from a systems theory approach, Tronvoll (2017, p. 3) argued that *“humans possess knowledge, skills and other resources that can be leveraged for self-benefit or to benefit other actors”*. It could be argued that technology, increasingly, could meet similar criteria as an independent ‘actor’. As technological capabilities become more advanced, sophisticated platforms can indeed possess knowledge (through content and data) and skills (through algorithms) which are beneficial to itself (for example in self-monitoring, reporting and updating) or others (end users). Early work by Latour (1992) considered technology as an equal actor in social systems, as it has the power to mediate relationships between human actors and other devices. Similarly, from an interaction design perspective, Bannon (2005) argued that scholars need to change their thinking to incorporate technology as both the subject and as the object in experiences. Much of these arguments correlate with the socio-technical systems perspective that argues that technology should be viewed as interconnected with human activity. As considered by Strijbos (2006, p. 108):

“Technology is not a gadget or apparatus that stands separated from us as an external object, it is not a tool in our hands, but it is the environment or ‘the house’ in which we all dwell today. Technology determines the public space of our existence.”

While the perspective above is alluring, it is not widely shared amongst scholars in co-creation. Drawing on SD Logic, Edvardsson et al. (2011) argue that the actors in value co-creation are resource integrators (i.e. individuals who can draw upon both tangible and intangible resources in the mutual co-creation of value), as such technology and associated platforms are viewed as a resource which actors can engage in the co-creative process. Similarly, Saarijärvi et al. (2013) maintained that technology facilitates the mechanisms of co-creation between actors and as such acts as a tool for actors to engage their own resources. Other authors in service marketing/management consider technology as a mediator (Tussyadiah & Fesenmaier, 2009), facilitator (Auh, Bell, McLeod, & Shih, 2007; Nambisan & Baron, 2007; Sigala, 2009), or enabler (Neuhofer, Buhalis, & Ladkin, 2012; Peña, Jamilena, & Molina, 2014) in the process of co-creation; however largely do not claim that technology, in itself, acts as a standalone actor within the relationship.

Where the boundary between actor and mediator becomes blurred is the presence of autonomy and agency. Kleinaltenkamp et al. (2012, p. 2) addressed the complexities surrounding the role of technology in resource integration and co-creation:

A key question is the essentiality of human agency...and specifically whether technology can itself be a resource integrator and can forge relationships between other things embedded with knowledge capabilities. This difficulty in conceptualizing the nature of the role of technology is a recurring theme in considering several aspects of resource integration.

As noted above, much of the ambiguity surrounding technology as an equal actor refers to its ability to build relationships with other actors. The presence of technological agency and autonomy in co-creative processes has begun to attract more research in line with digital advancement. As suggested by Ramaswamy and Ozcan (2018), the proliferation of 3D virtual reality, artificial intelligence and the Internet of Things (IoT) is driving non-human actors to becoming closely intertwined with value co-creation. The authors also argue that as technology continues to become more autonomous it may be necessary to reframe our understanding of technology as a resource to an active agent. This view is however contested; Maglio, Vargo, Caswell and Spohrer (2009) refute such claims by arguing that in a service system approach, technology remains a physical resource that is treated as property. Similarly, Storbacka et al. (2016, p 311/312) make a clear distinction between an actor and an engagement platform by arguing that

“...platforms do not engage themselves but foster engagement between two or more actors...actors participate in the engagement activities whereas platforms do not”.

While this thesis acknowledges the evolving role and conceptualisation of technology in service settings, the study continues to view technology as an engagement platform as opposed to an active ‘third-actor’ in the co-creative relationship. In line with the arguments put forward by Breidbach et al. (2014) and Ramaswamy (2011), co-created experiences are seen in this study as human and social experiences that are incrementally built as a result of interactions with various engagement platforms. This view is widely accepted

in the business and management literature, however future research may challenge this belief, particularly considering autonomous and ubiquitous technologies (such as artificial intelligence and robotics) becoming embedded in both experiential contexts and into daily life.

2.4.3 The Management of Co-Created Experiences

A further theme within the literature, is the role of management in co-created experiences. As suggested in Ramaswamy and Gouillart's (2010) 'Co-creation Manifesto', service managers must adopt a co-creative ethos which places customer experiences at the heart of products, processes and functions. Similarly, the work of Carù and Cova (2006, 2015) discuss the role of the service provider in terms of 'facilitators' of experience. The authors suggest that for the customer to be fully immersed into an experience, managers can position points of reference, guides and rituals across the service encounter to support and engage customers. This reaffirms the vital role of service management in nurturing co-creative experiences. It is therefore critical for the purpose of this study to acknowledge the management challenges and issues that influence the selection, adoption and implementation of engagement platforms (such as interactive technology) in experience co-creation.

An additional way in which this concept has developed beyond the core co-creation approach, is the emphasis placed on the environmental dimension in experience creation. As presented in Figure 7, Prahalad and Ramaswamy (2003) introduced the experiential environment, which acts as the service landscape that is mediated by various engagement platforms. In an academic context, these environments can be identified as the spaces in which the customer-provider relationship can flourish, through dialogue and resource integration (Scott et al., 2009). It is emphasised that the co-creation of experience approach is less reliant on the good/service divide, favouring a more holistic view that sees the potential for valuable experiences in a multitude of settings and contexts.

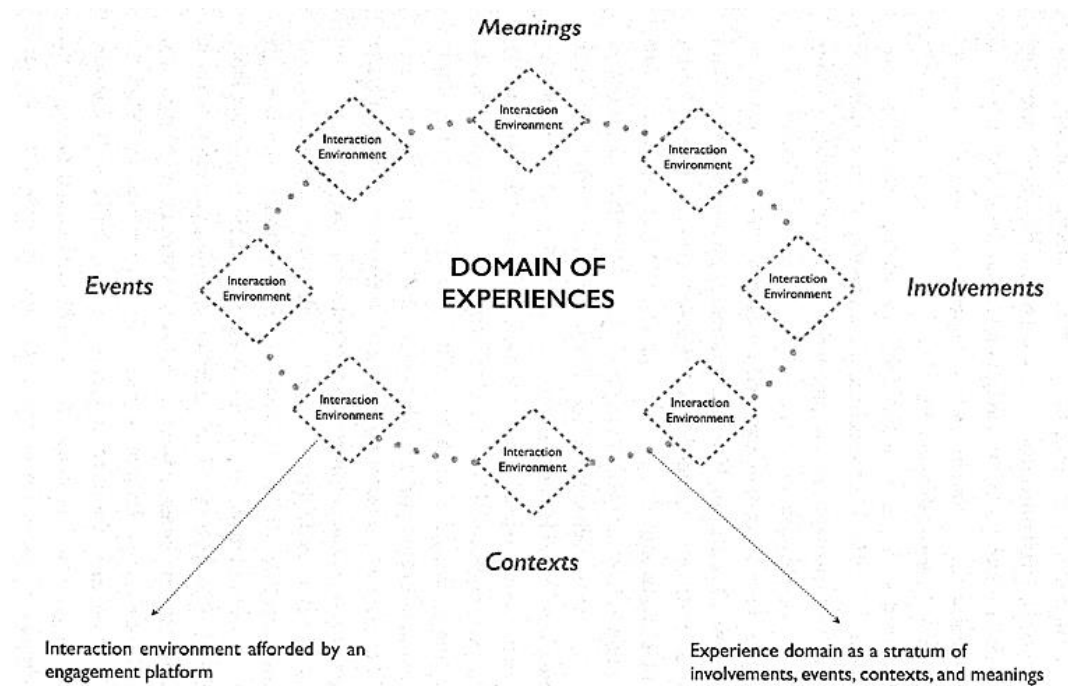


Figure 7. Domain of Experience
Source: Ramaswamy and Ozcan (2014, p. 53)

The study of the service environment in experience creation is not a new phenomenon. Scholars in service management have consistently recognised the importance of the surroundings and physical components in purchasing behaviour (Bitner, 1992; Prentice, Witt, & Hamer, 1998; Wakefield & Blodgett, 1996; 2016). From a contemporary perspective, this structural dimension has continued to interest academics. As suggested by O'Dell (2005) and later examined by Mossberg (2007), the concept of 'experiencescaping' refers to the management of the landscapes in which experiences are formed. Not only does this refer to the physical components (such as the built environment), but also the sensory (e.g. sights, sounds, smells) and ambient factors (e.g. heat, cold, ambience) which contribute to the customer experience (Agapito, Mendes, & Valle, 2013). Furthermore, the impact of mediating service personnel and fellow customers is also considered as a key environmental dynamic (Ooi, 2005).

Much of this environmental research corroborates a founding principle in the study of co-created experiences. The service provider can create the space and opportunities for an experience, but not the experience itself (Edvardsson & Olsson, 1996; Fernandes & Neves, 2014; Hennes, 2010; Pullman & Gross,

2004; Zomerdijs & Voss, 2010). Thus, experience research cannot provide a formula for a perfect customer experience, but only highlight the ways in which businesses can increase the probability of successful experience formation (Tung & Ritchie, 2011). However, despite the plethora of research into service design, the impact of environmental factors on the successful co-creation of experience is under-researched. This has particular relevance to this study, as the physical design of VAs has a significant impact on their product offering and therefore it is important to capture the impact of experience environments on experience co-creation.

2.5 Technology-mediated Experience Co-creation

Apparent in the literature surrounding co-created experiences, is the need for participation and active customer involvement in the creation of service offerings (Fliess, Dyck, & Schmelter, 2014; Prahalad & Ramaswamy, 2004; Saarijärvi et al., 2013; Stewart & Pavlou, 2002; Voase, 2002). As considered by Mustak, Jaakkola and Halinen (2013), customer participation in the creation of service offerings is a contested area in the literature. Through a systematic review of 163 articles on the subject, the authors found inherent difficulties in how to conceptualise customer participation. The nature of participation coupled with situational factors relating to the service (such as industry sector) make it difficult to understand how customers participate in the service encounter. However, for the purpose of this research, customer participation refers to the actions and activities that relate to the development or creation of service offerings (ibid, 2013). In short, participation can be viewed as the interactions that take place within the service environment, to assist in shaping the customer experience (Zatori, Smith, & Puczko, 2018).

The relationship between the firm and the customer can therefore be seen as based on a series of interactions and engagements. From the co-creation literature it is possible to identify the presence of engagement 'platforms' that have a mediating effect on this relationship. Ramaswamy and Ozcan (2014, p. 34) define these platforms as:

“...an assemblage of persons, processes, interfaces, and artifacts, whose engagement design affords environments of interactions that intensify agential actions in value creation.”

A number of issues can be drawn from the statement above. Firstly, the platforms of engagement identified by the authors are viewed collectively. It could be argued that these platforms do not impact on the customer experience in isolation; it is the collective interactions that help shape a memorable experience. Furthermore, the platforms do not necessarily need to be physical or fixed touch-points. A prime example of this would be virtual interfaces, mobile applications or an online presence - described by Breidbach et al. (2014) as ‘virtual engagement ecosystems’. The environmental dimension is also acknowledged, which alludes to the strategic positioning of platforms throughout the service encounter as part of the product offering. An example of this in a VA context include physical touch-points such as displays, static exhibits and interactive media, coupled with personal interaction from attraction personnel. Lastly, it is important to recognise the purpose of engagement platforms within the overall service relationship. It is customer interactions with the platforms that both contribute to the experience and the subsequent value that is attributed (Ramaswamy & Ozcan, 2014).

However, despite these claims, less is known as to the management issues that drive technology adoption in VAs alongside the visitor perceptions of such engagement platforms and importantly, how these influence the co-creation of experience. This study therefore questions the role of interactive technology within the co-creation of experience by exploring both the management and visitor perspectives, before identifying four building blocks that unify the two actors in the technology-mediated co-creative experience interface.

It is important to acknowledge the variety of engagement platforms that are identified in the co-creation literature. As presented in Table 4, the relationship between the customer and the service provider can be influenced and potentially mediated through a variety of touch-points. In applying these platforms to a VA context, Table 4 identified some examples to act as a broad framework. This is by no means exhaustive and this study cannot hope to

consider all the potential platforms, however the following four types are the most prevalent in the co-creation literature.

Platform Type	VA Examples	Interaction
Persons	Service personnel (tour guides, welcome hosts, retail and catering staff)	Relational
Processes	The visitor journey (orientation, visitor flow, facilities, structures and ambience)	Atmospheric
Interfaces	Communication channels (printed guides, websites, social media, mobile applications)	Physical and Virtual
Artefacts	Physical platforms (audio-visual displays, graphic panels, touch-screen exhibits, mechanical displays, virtual reality experiences)	Multi-Sensory

Table 4. Engagement platforms, examples and interactions
Adapted from: Ramaswamy and Ozcan (2014)

Conceptually, the platforms that are involved in the service experience have been researched considerably. Throughout the literature, various terms have been used to identify interaction points within the service environment such as: service prerequisites (Edvardsson & Olsson, 1996); interactive tools (Gupta & Vajic, 2000); service inputs (Goldstein, Johnston, Duffy, & Rao, 2002); or customer touch-points (Frow & Payne, 2007). However, research which questions the extent to which these platforms can act as co-creative tools, are less prominent in the academic literature. A number of authors (e.g. Brodie, Hollebeek, Jurić, & Ilić, 2011; Morosan & DeFranco, 2016; Zhang, Lu, Wang, & Wu, 2015) advocate the need for more academic research focussing on how customers engage with objects, people and platforms in the service environment, to better understand how they can stimulate co-creative relationships. In particular, an emerging body of knowledge that focusses on interactive technology and its role in mediating co-created experiences is developing in the service management literature.

This technology-mediated approach considers the practices and structures that are positioned within the service environment to foster co-created

experiences (Ramaswamy & Gouillart, 2010; Stewart & Pavlou, 2002). Similarly, Candi, Beltagui and Riedel (2013) discuss the interactions that contribute to the customer experience. The authors identify various structures that can support experiential value such as the physical, sensory, relational and virtual touch-points. Equally, this perspective stresses the importance of emerging technology in services and, in particular, its capabilities as a co-creative platform (Frow, Nenonen, Payne, & Storbacka, 2015). Prahalad and Krishnan (2008) describe this as the ‘technical architecture’ of the firm and suggest that this should be viewed with equal importance to the physical design of the service environment. As shown in Table 5, followers of this perspective view technology as an enabling and facilitating force, which can enhance the levels of interaction between the firm and its customers.

	Traditional Innovation	Experience Innovation
Focus of Innovation	Products and processes	Experience environments
Basis of Value	Products and services	Co-created experiences
View of Value Creation	Firm creates value Supply-chain-centric fulfilment of products and services Supply push and demand pull for firm's offerings	Value is co-created Experience environments for individuals to co-construct experiences on contextual demand Individual-centric co-creation of value
View of Technology	Facilitator of features and functions Technology and systems integration	Facilitator of experience Experience integration and enhancement
Focus of Supply Chains	Supports fulfilment of products and services	Experience network supports co-construction of personalised experiences

Table 5. Traditional vs. Experience Innovation
Adapted from Prahalad and Ramaswamy (2003)

The majority of research into technology-mediated co-creation refers to ICTs or Information Communication Technologies. This encapsulates forms of technology-based communication channels such as the internet and online environments. Sawhney, Verona and Prandelli (2005) present a strong case for virtual environments to be recognised as a new landscape for customer engagement. The authors stress the flexibility of online systems in fostering continuous dialogue between customers and businesses. Similarly Saarijärvi et al. (2013) view technology as a co-creative mechanism that can assist in the integration of resources from various actors in the service system.

Likewise, Cabiddu, Lui and Piccoli (2013) suggest that ICT has a vital role in knowledge management and sharing that can allow for co-creative relationships in business-to-business (B2B) networks.

Further research by Reay and Seddighi (2012) and Gemser and Perks (2015) suggest that ICTs facilitate and empower consumers to help shape new product/service development. However, a number of authors have called for greater insight into the role of ICTs in value co-creation. Examples of this can be seen in the management field, where ICT enabled co-creation has been identified as a vital area for organisational learning, training and development (Grover & Kohli, 2012; Harrison & Waite, 2015; Kohli & Grover, 2008; Zhang et al., 2015). From a counterpoint, Heidenreich, Wittkowski, Handrich and Falk (2015) suggests the potential risks in co-created services. The authors posit that the more engaged and invested a customer is in an experience, the greater the potential for disappointment as a result of failure in its delivery. This is particularly relevant in the context of ICT malfunction, breakage or lack of access.

In the tourism literature, the role of technology as a co-creative platform has only recently begun to receive in-depth academic attention (Cabiddu et al., 2013). Buhalis and O'Connor (2005) identified a number of ways in which technology can be used in a customer-centric approach in the tourism industry. As shown in Figure 8, the authors consider three key areas in which ICT can be used in relation to the customer.

KNOWLEDGE & INFORMATION EXCHANGE

- Dynamic packaging
- Travel/destination information
- Interaction with suppliers
- Feedback channels
- Marketing and promotion

EFFICIENCY

- Flexible and adaptive service delivery
- Cost savings
- Automated communications

PERSONALISED SERVICES & CUSTOMISATION

- Customer relationship management (CRM)
- Visitor preference and consumer choice
- Customisation of travel arrangements

Figure 8. Use of ICTs in customer-centric approach to tourism
Based on: Buhalis and O'Connor (2005)

However, the examples identified above are largely based on online platforms and internet communications. This is representative of much of academic literature focussed on customer-facing technology. For example, Binkhorst (2006) suggests that the internet now represents an 'experience environment', through which dialogue can contribute to co-created visitor experiences. From a hospitality perspective, Coussement and Teague (2013) posit that the internet and increasingly, mobile-enabled systems, have created a 'constantly-connected consumer' that businesses can continuously interact with through various platforms. Similarly, Wang, Xiang and Fesenmaier (2014) found that smartphone use was becoming embedded throughout all stages of the travel experience and encourage destination managers to integrate this into their planning and development. Likewise, Morosan and DeFranco (2016) argued that m-commerce systems should be embedded throughout hospitality experiences to encourage the co-creation of value. These examples are based on the view that technology can act as a supporting tool in the service interaction or as a means to foster communication between parties (Bitner, Brown, & Meuter, 2000) leading to mutual benefits and enhanced customer-relationship management (CRM) practices (Grissemann & Stokburger-Sauer, 2012; Nambisan & Baron, 2007). However, a related perspective considers how technology can actively shape the tourism experience.

In an attempt to address the lacking research in technology-mediated tourism experience, Neuhofer, Buhalis and Ladkin (2012, 2013, 2014, 2015) developed a typology of technology-enhanced destination experiences that set the tone for future research in the field. This research has illuminated the role of ICTs in the pre-, on-site, and post-travel experience. While these publications have provided fascinating insight into the role of ICTs in the tourism experience, they are limited in their scope. The studies were collected predominantly in the hospitality sector and focussed on internet and online platforms. Furthermore, a central tenet in each of these papers suggested that the tourism experiences with the highest value emerge with intense co-creative practice and enhanced technology implementation. An interesting statement is made in one of the recent papers:

“...this study puts forth the term Fully Technology-Enhanced Tourism Experience, as the ultimate and most desirable type of experience generating the highest level of value” (Neuhofer et al., 2013, p. 552)

This thesis challenges this premise, by suggesting that in the VA industry the use of interactive technology can be interlinked with the attraction product, and in many cases embedded in the visitor route. As such, the application of this technology is seen as part of a larger system of touch-points that can contribute to positive and memorable experiences. There is a need to understand the extent to which interactive technologies can act as a mediating force for co-created experiences. Therefore, analysis into the various applications of technology in different VA environments would give a more holistic understanding of how visitors engage with the platforms and subsequently how they influence the co-creation of experience.

Much of the academic research surrounding co-creative technology has focussed on its role for distribution, communication and CRM in the tourism industry. However, in reference to the VA context, technology also represents a vital component of the product through interpretative media. The extent to which these emerging interactive technologies can act as co-creative platforms has yet to be fully explored in the tourism literature and represents a significant gap in the study of VAs.

2.6 Co-creation and Tourism Research

Tourism research has had a long history of experience-based study. Alongside the conceptual papers that offered perspectives on the nature of the tourism experience, a neighbouring stream focussed on their management. While the co-creation literature stresses the importance of experiences developing organically, there is a vital place for the management function in tourism. As suggested by Ooi (2005), tourism mediators (i.e. the businesses/providers) play a significant role in framing the experience. By providing the options, markers, directions and guidance to facilitate tourists in creating their own experiences. This extends the earlier works Beeho and Prentice (1997) who suggest that managers have a defined role as “engineers of experience”. While the authors acknowledge the supporting role that the tourism provider can play in visitor experience, it is clearly grounded in the more traditional view of experience design rather than co-creation. Nevertheless, the premise is still important - tourism managers have a particularly important role as mediators but also as partners in the co-creation of memorable experiences (Buonincontri, Morvillo, Okumus, & van Niekerk, 2017; Kim, Ritchie, & McCormick, 2010; Sfandla & Björk, 2013). As discussed by Tung and Ritchie (2011, p. 1369), the central role of tourism planners is to:

“Facilitate the development of an environment...that enhances the likelihood that tourists can create their own memorable tourism experiences.”

This concept of facilitating tourists emerges throughout the extant literature in tourism experience. A number of authors take a practitioner-based view to this concept, Morgan (2006) for instance recommends embedding abundant choice, moments of amazement and opportunities for shared experiences into the service encounter. Whereas Connell and Meyer (2004) draw a distinction between the tourism managers’ role in controlling internal factors but also recognising the external factors that contribute to visitor experiences. Lane (2007) argues that management have a more substantial role than merely facilitating; they can actively engage with the customer across various levels to ‘shape’ memorable experiences. This suggests a level of uncertainty as to the appropriate level of management involvement in the experience creation

process. Accordingly, this study considers the role that VA management has in the selection and implementation of engagement platforms to question their role in fostering the co-creation of technology-mediated experiences.

Recently however, the concept of co-creation has begun to appear in the tourism literature as a more central theoretical component (Eide, Fuglsang, & Sundbo, 2017; Hwang & Seo, 2016). This is illustrated by the work of Prebensen and Foss (2011) and Prebensen, Vittersø and Dahl (2013). The authors question the process of co-creation in a tourism context and the various components that can influence the process. From a broader perspective, Lin, Chen and Filieri (2017) explored the resident-tourist relationship through the lens of co-creation. The authors argued that the social interaction between residents and tourists within a destination has a significant impact on value co-creation and provided yet another way to apply co-creation theory to tourism research. However, these studies question how travellers (as customers) co-create *value* with the organisation, whereas considerably less attention is paid to how they co-created their *experiences*. Furthermore, a number of interdisciplinary studies that blend together tourism and marketing research are challenging the previously rigid divide. Li and Petrick (2008) draw together alternative approaches to tourism marketing to provide avenues for future research. The authors cite SD Logic and co-creation as a crucial area for further investigation in tourism. Furthermore, they support the recent trend towards applying concepts from more established academic fields to expand horizons in tourism studies. In additional works, a recent study by Liang (2017) applied SD logic to the agritourism sector in attempt to identify co-creative behaviours in an immersive 'lived' experiential setting. Particularly interesting in this study was the use of service blueprinting to map co-creative opportunities in the tourism experience.

In focussing on the application of experience co-creation research in tourism, Campos, Mendes, Valle and Scott (2015) provide a state-of-the-art review of existing works. From the psychological perspective, the authors debate the internal processes that a customer goes through during the co-creation of experience. Figure 9 presents a process model that indicates the

environmental dimensions governing co-creative relationships. Within the experiencescape, the link between multi-sensory provision and experiential co-creation in tourism has rarely been explored in the academic literature. Chathoth et al. (2013) suggested the example of multi-sensory dining experiences in addition to other activities that can contribute to successful co-creation processes, but do not explore how this can be achieved. Similarly, in their review of existing empirical work on the sensory dimension of the tourist experience, Agapito, Mendes and Valle (2013) found little work from the co-creative perspective and highlight the abundance of research grounded in experience design principles. Accordingly this study considers the multi-sensory quality that interactive technology offers argues that, in certain contexts, can fundamentally support experience co-creation.

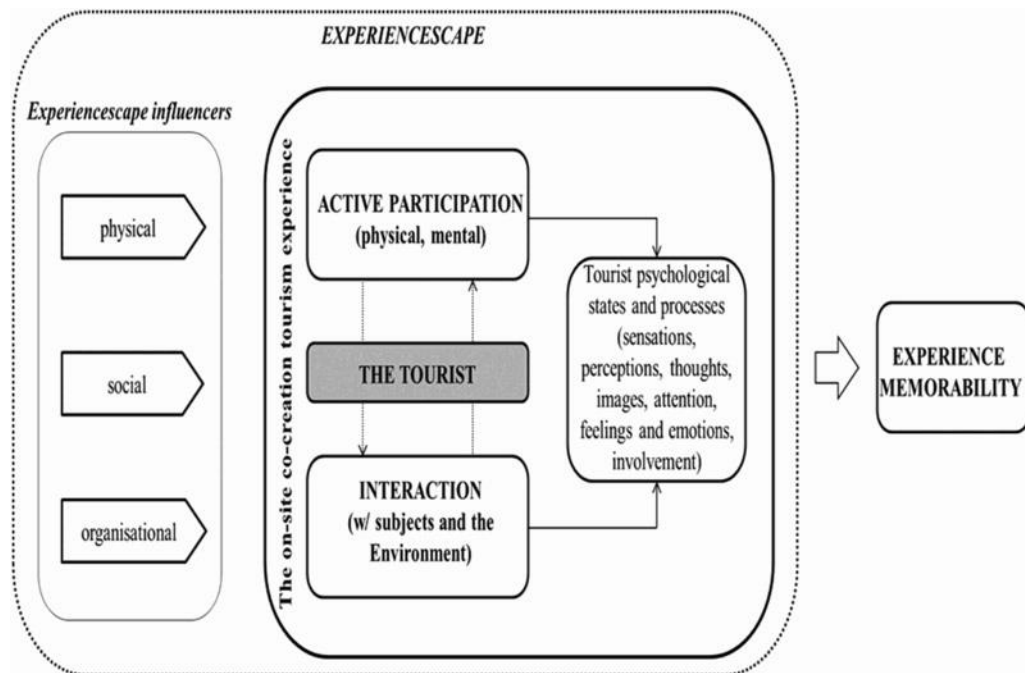


Figure 9. The tourist on-site co-creation experience: a conceptual framework
Source: Campos et al. (2015, p. 24)

Within the model (Figure 9) the internal emotions of the customer are also acknowledged adding strength to the proposition that is it that personal and emotional involvement can lead to memorable tourism experiences (Bertella, 2014; Campos, Mendes, Valle, & Scott, 2017; Del Chiappa, Andreu, & G. Gallarza, 2014; Kim, 2014; Servidio & Ruffolo, 2016). The extensive literature

review provided by Campos et al. (2015) displays the current progress tourism research has made in understanding the co-creation of experience. However, the authors recommend further research into the on-site participation and interactions that contribute to the co-creative relationship. As such, this study focusses on the on-site experience and questions the interactions that visitors have with VA management-led engagement platforms. Prebensen and Xie (2017) took the concept of participation in co-creation further in their study into adventure tourism activities. The authors add to the notion of active participation by suggesting that tourists not only want to participate, but to master tasks and activities. This view elevates the tourist from participant to expert in their own experience. However, the ways in which visitors participate in technology-mediated experience co-creation is less well-known. This study questions the visitor perceptions and determinants that influence how visitors actively participate with technology and how this feeds into a co-created experience.

2.6.1 Hospitality Sector

Arguably, the strongest application of co-creation in tourism research can be found in the hospitality sector (Campos et al., 2015). It is unclear as to why there are proportionally more studies in this sector, although this could be as the result of the broader trend toward product diversification in the hospitality industry (Chathoth et al., 2013) and greater focus on competing with individualised experiences. A number of these studies are resource-based, for example FitzPatrick, Davey, Muller and Davey (2013) examined the potential of 'intellectual capital' (the invisible assets contributing to company value) in the co-creation of value in a number of hotels. This provides insight into the intangible components of the co-creation process, however once again the focus on value overlooks the experiential undercurrent inherent in tourism activity. A similar approach is taken by O'Cass and Sok (2015) and Johnson and Neuhofer (2017) who debate the value propositions and practices that can impact competitiveness in the accommodation sector. The authors suggest that hospitality firms must identify their individual value propositions that will not only be appropriate for their customers, but also lucrative for their business. Furthermore, Lugosi (2014) extends knowledge by arguing that that consumer

culture and identity are central to the co-creation of experience in hospitality and that these need to be debated further in the literature.

In contrast, Sørensen and Jensen (2015) base their analysis firmly in the experiential realm. The authors distinguish between service encounters and experience encounters in tourism. As shown in Figure 10, the authors differentiate between superficial service encounters that are rigid and mass produced, and a new wave of experience encounters that are personalised and grounded in the co-creative approach. The authors consider some of the managerial choices and approaches that could contribute to a ‘culture of co-creation’ in a hotel context. Many of the recommendations align with the theoretical principles identified in the literature (such as encouraging active dialogue and interaction), which makes Sørensen and Jensen’s study not only conceptually rich but also with strong practical implications for industry.

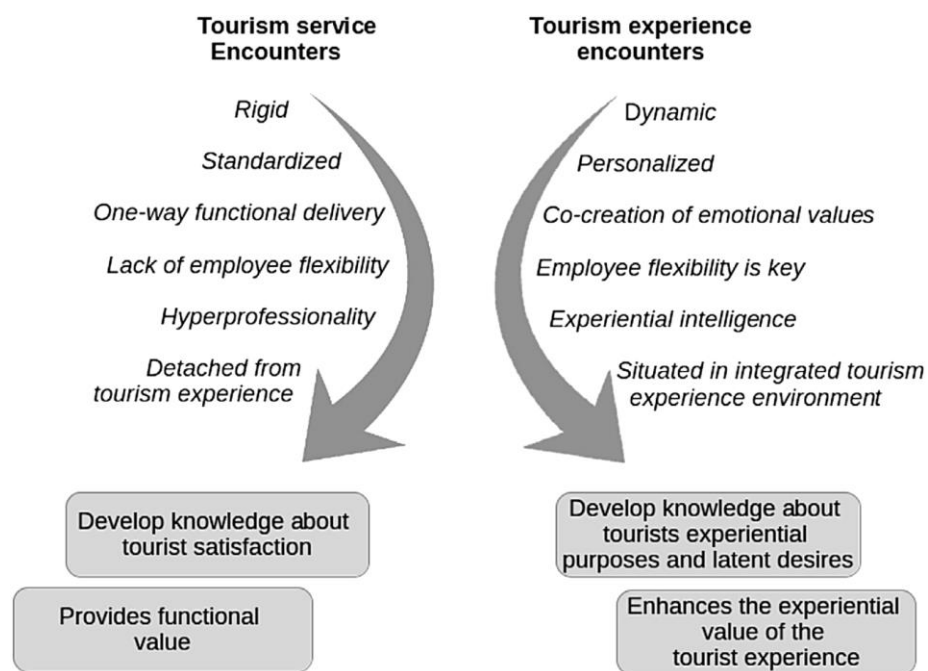


Figure 10. Characteristics of tourism services and experience encounters
Source: Sørensen and Jensen (2015: p. 340)

Finally, a study by Shaw, Bailey and Williams (2011) questions the applicability of SD Logic and co-creative processes in the hotel industry. The authors

examine the various ways in which hotels use the customer interface to promote a co-creative relationship. The use of feedback channels and user-generated content (such as social media) on hotel websites is considered as an emerging trend and an innovative practice. Although producer focussed, this study provides useful insight into the strategic impacts of new product developments in a hotel setting and the role of co-creative platforms as a result of this. The authors do however advocate further study into the customer impacts as a result of increased technology-mediated interaction in tourism.

2.6.2 Festivals and Events

In the context of festivals and events, the application of co-creation research has steadily increased in recent years. Crowther and Donlan (2011) contextualise events within the SD paradigm, particularly in terms of value creating spaces. The authors suggest that the value of events as an environment for enhanced interaction and engagement makes them particularly co-creative. Although, this can be hindered by management practices inherent to large-scale events. In a similar vein, a study by Björner and Berg (2012) sets the potential for co-creation at events apart from other components of the tourism industry. The authors cite the greater role of customer-to-customer (C2C) relations in a festival/events environment. This expands the traditional co-creation process to include shared experiences or 'communitas' as a contributing factor in generating co-creative experiences.

This social dimension in the co-creative relationship has been further examined in a number of papers in the events field (such as: Rihova, Buhalis, Gouthro, & Moital, 2018; Rihova, Buhalis, Moital, & Gouthro, 2013, 2015) and adds to the debate surrounding social practices as a vital component to value creation. This social dimension can be extended to the host/guest relationship, as Stadler, Reid and Fullagar (2013) discuss. The authors argue that the co-creative relationship that can exist between festival organisers and host communities can be particularly powerful. As a result, an integrated approach to festival/event planning that captures the views of various actors in the event setting is crucial to having the support of local residents. In an addition to the studies above, Van Winkle and Bueddefeld (2016: p. 237) suggested that

“personal, social, cultural, physical, place, and arts presentation domains come together to add value to the festival experience” in their study into co-creative festival experiences. The authors also argued that marketing and management strategies need to include these domains in their planning to support co-creative experiences in social festival contexts.

2.6.3 Visitor Attractions

The co-creative experience approach has rarely been applied to VAs exclusively and this can be seen in the dearth of studies grounded in the VA context. Among the few examples is the work of Minkiewicz, Evans and Bridson (2014) who applied the concept of co-created experiences to the heritage attraction sector. This innovative work is one of the few that not only moves beyond the value-based view of co-creation towards an experiential perspective, but also applies this to the VA industry. This study aimed to examine the individual visitor factors and circumstances that affect co-creation. Although a vital development in the VA field, the study does have its limitations. The research was customer-focussed and did not integrate the VA management dimension in the study. Whilst this provides a rich customer perspective, it is argued that to provide a holistic understanding of how an experience is co-created, it is necessary to explore the equally valid role of the service provider in the relationship.

In a different study, Calver and Page (2013) applied the concept of SD Logic to the heritage attraction industry in the UK. The study examined the relationship between customers' prior knowledge and hedonic motivations, with its effects on lasting visitor behaviour. The SD approach was incorporated to reflect the changing nature of the customer in tourism, with active participation and individuality being cited frequently in their analysis. However, the study aligns closely with visitor satisfaction research and coupled with its quantitative approach, fails to capture the individual perceptions, interactions and processes that are integral to extend our understanding of co-created experiences. Whilst undoubtedly an important contribution, there is scope for a more integrated study that positions the co-creation concept at the heart of the VA research agenda.

Whilst rarely mentioned in the 'mainstream' co-created experience literature, the development of shared narrative and stories appears as an emerging research thread in the tourism field. This should be distinguished from the internal tourist narrative that is generated throughout an experience. This differs from the narrative found in a VA context. As Moscardo (2010) discusses, VAs can establish narratives, stories and themes as a way to present information to visitors. This narrative framework provides the platform from which visitors can attribute meaning and individual context to the information. Increasingly however, this narrative has become more fluid and open to interpretation in VAs. The work of Chronis (2005a, 2005b, 2012) examined this concept at a number of VA sites, but notably in the heritage sector. The author suggests that even in engineered environments (such as VAs), the personal narratives should be heterogeneous. That is to say, a core message running throughout the presentation of the site, but broad enough to be interpreted in multiple ways based on the cultural and social background of the visitor (Hunter, 2012). This allows and actively encourages visitors to generate their own individualised narrative of the events they participate in (Strauss, 1996) rather than it being predetermined by the designers. This visitor autonomy has definite links to the concept of co-created experiences and is particularly relevant to interpretation design in a VA context.

Finally, Thyne and Hede (2016) considered the role of authenticity in the co-creation of museum experiences. The authors are some of the few that explicitly consider management strategies for supporting the co-creation of experiences in a museum setting, however they do not focus on technology as a mediating force. The authors recommend that managers consider the various needs of visitors with regards to authenticity and how these can impact the visitor experience.

2.7 Chapter Summary

Experience research has seen a wealth of theoretical development in recent years. Early contributions suggests an academic perspective that sees experiences as being designed and potentially engineered in advance. However, advances in the field of service marketing/management have

challenged this long-established view and elevated the position of the customer in the experience creation process. The seminal works of Prahalad and Ramaswamy (2000; 2003; 2004) and Vargo and Lusch (2004; 2008) provide unique insight into the changing nature of the service relationship. From once passive and static positions, customers now have the potential to become active co-creators of individualised experiences.

Of key importance is the need to view both the management and customer perspective in co-creation research. The previous literature identifies that both of these actors, whilst having individual motivations and desires, engage within an equitable relationship in the pursuit of co-creation. However, the shared factors which unify these disparate actors has been largely overlooked in previous scholarly work. This study therefore considers the individual perceptions of both VA managers and visitors before re-contextualising these to identify shared building blocks that can support the co-creation of technology-mediated experiences. Furthermore, the existing literature highlights the significant role of experience environments for supporting the co-creation of experience. As a fundamental tenet of co-creation research, service providers can only provide the space for experience but not the experience itself. However, the way that this space is constructed can have a significant impact on the successful co-creative process. As such, there is a need to acknowledge the unique environmental dimension within the context of this research.

Beyond our understanding of the co-creative process is the role of engagement platforms that have a powerful mediating effect on the service relationship. In the contemporary tourism industry, interactive technology has rapidly become a key influencing factor in visitor experiences. Yet the extent to which this can enrich, support or shape the experience in a VA setting is still largely unknown. Of the few studies that explicitly question co-created experiences in VAs, none have focussed exclusively on the role interactive technology can play. This gap in research provides a clear direction for in-depth scholarly research.

CHAPTER 3. INTERACTIVE TECHNOLOGY IN A VISITOR ATTRACTION CONTEXT

3.1 Introduction

Chapter 3 evaluates existing research surrounding interactive technology in the VA context. As technology has developed, it has become increasingly embedded in our daily lives. As such, VAs alongside the rest of the service industry, have had to adapt and innovate to ensure their product is facilitated by the technologies that today's visitors have come to expect. Whilst many technological platforms are found across various sectors, VAs have a unique channel in which technology plays a vital role. The way in which an attraction uses interpretation to tell its "story" is a key management challenge and can be a critical success factor for the survival and competitiveness of the site. Chapter 3 explores the role of interactive technology in VA interpretation and, questions how various platforms contribute to the product offering. The chapter concludes by reiterating the existing gaps in research across both themes, which the thesis subsequently aims to address. Finally, a theoretical framework illustrates the process of experience co-creation with reference to the mediating forces and factors that have been identified in the existing literature.

3.2 The Visitor Attraction Context

Despite being a core component of the tourism system (Gunn, 1972; Leiper, 1979, 1990; MacCannell, 1976), VAs have received considerably less academic research compared to other areas within the industry (Fyall, Leask, & Garrod, 2002; Leask & Fyall, 2006; Pearce, 1998; Richards, 2002). This is evident from the number of authors drawing attention to the scarcity of academic studies in VA management generally, and in particular what makes them successful (Leask, 2010; McKercher & Ho, 2006; Richards, 2002). Similarly, a number of academics have highlighted the lack of theoretical development in the VA field in comparison to other areas of tourism research (Benckendorff & Pearce, 2003; Lennon, 2004; Swarbrooke, 2001; Timothy &

Boyd, 2006). The reasoning for this lack in research is unclear considering the importance of VAs for attracting visitors to destinations and for regional development (Gunn, 1972; Walsh-Heron & Stevens, 1990). This does however create opportunities for in-depth studies to continue raising the profile of VA research as a unique area within tourism. Studies in the destination planning literature have long stressed the importance of VAs to both the destination and tourism activity in general (Gunn, 1972). A number of early studies identified the VA sector as a key component of a much larger tourism system (Leiper, 1979, 1990; MacCannell, 1976). As presented in Figure 11, this sub-system of the tourism industry can be seen as having three main components - the visitor, the nuclei and the marker.

The visitor takes the crucial role within the VA system. As discussed extensively in Chapter 2, the pursuit of memorable and extraordinary experiences are inherent in tourism activity (Arnould & Price, 1993; Pizam, 2010; Ritchie et al., 2011; Ryan, 2000; Schmitt, 1999). The VA sector is particularly aware of this, as often the prime motivator for visiting an attraction is for an experience (Leask, 2010). As highlighted by Voase (2002, 2008) and Leighton (2007), this poses a particular challenge for VAs. How does the attraction (as a business), shape, design and structure its product offering to meet the needs/wants of contemporary visitors who are seeking unique experiences?

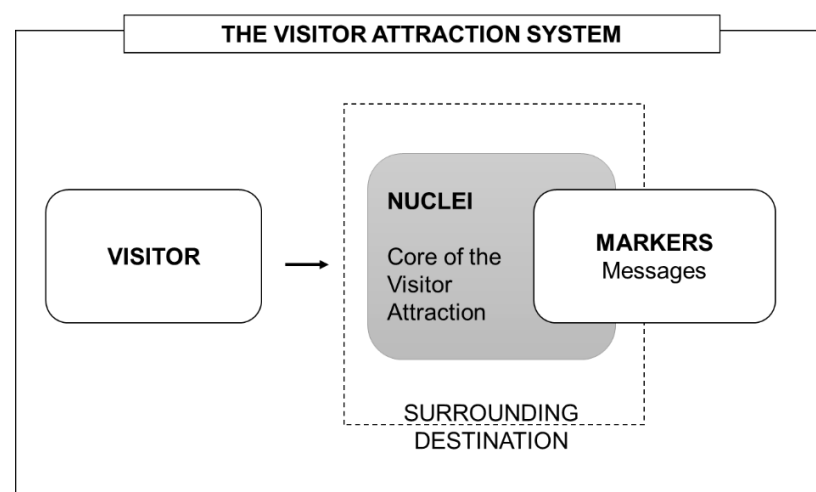


Figure 11. Structure of the VA System
Based on: Gunn (1972), Leiper (1990) and Lew (1987)

The nuclei can be identified as the core of the VA. This may refer to a particular built site (such as a museum, gallery, science centre) or to a particular natural or scenic location that attracts visitors (Fletcher, Fyall, Gilbert, & Wanhill, 2013; Page & Connell, 2014; Swarbrooke, 2002). While this is important in presenting the diversity of attractions throughout the industry, the lack of unified definitions and categories has led to difficulties for comparative work and benchmarking. Nevertheless, to illustrate the scope and breadth of the sector, Leask (2010: p.157) provides a series of broad categories including:

- Theme / amusement parks (including water parks)
- Museums and galleries (arts, culture, virtual)
- Natural (gardens, national parks, forests, fauna)
- Animal (wildlife parks, zoos, aquaria)
- Visitor centres (industrial, cultural, transport)
- Religious sites (churches, cathedrals, places of worship, sacred sites)
- Heritage attractions (castles, palaces, historic/stately homes, dark, military, cultural heritage sites)

This is not an exhaustive list, with some commentators choosing to include special events in their categories (for example: Holloway & Humphreys, 2012 and Swarbrooke, 2002) or to break the broad categories into small niches for analysis. However, the categories provided by Leask (2010) provide a supporting framework that acknowledges the range of sites within the VA sector and their diverse product offerings.

The markers illustrated in the attraction system can either be viewed in isolation or embedded in the wider destination through integrative marketing or promotion. Take for example a managed historic VA - within the site there may be informative and experiential markers that tell the story of that site. However, broader marketing messages may reinforce this story at a destination level by promoting the image of the VA as a national landmark. Thus, Figure 11 positions the markers in the VA system both at the heart of the attraction itself, but also beyond to the surrounding destination.

For the purpose of this thesis, VAs are defined as “...a *permanent resource, either natural or human-made, which is developed and managed for the primary purpose of attracting visitors*” (Hu & Wall, 2005: p.619). While, there are multiple definitions in the academic literature, this definition highlights the permanence of the site thereby removing special events from the analysis. In addition, the management role is acknowledged alongside the core visitor-orientated purpose of the site. This would remove sites that offer visitor services as a secondary product (such as religious sites or places of worship).

3.2.1 Visitor Attraction Management Challenges

As discussed by Connell and Page (2009), a number of factors influence the success or failure of VAs. The authors highlight the challenges faced by the VA industry in creating memorable, enriching visitor experiences, in particularly difficult and competitive operating conditions. The specific challenges faced by VA management have received considerable attention in the academic literature. Hughes and Carlsen (2010) identified nine critical success factors for cultural heritage tourism that bring associated challenges to VA operation. Similarly, Leask (2010) presented a series of VA management challenges that were synthesised from an extensive literature review. The following section synthesises seven areas of challenges faced by VAs from the publications above. While this is not an exhaustive list, they represent the main management challenges reported in the academic literature and provide a necessary base for exploring the VA product.

- *Competition and fluctuating demand*

As analysed by Leask (2016), visitor demand and the diversity in VA markets represents a significant management challenge for VAs. In his study into the North American theme park sector, Milman (2001) argued that fluctuating demand coupled with increasing competition was likely to drive diversification in the VA industry. As such, the need for innovative products, services and, most importantly, experiences were seen as a key priority for future VAs (ibid).

As suggested by Leighton (2007), the mass growth of leisure and tourism opportunities has flooded the marketplace and as a result visitor motivations, preferences and desires have become significantly more complex. This would

support the findings of Shulga, Busser and Kim (2017) who argued that, VA managers and marketers need to be aware of various demographic cohorts' behaviour and differentiate the product offering accordingly. Such a call has been manifested in an increasing body of work that questions the demand behaviours of various VA markets such as: Generation Y (Leask, Fyall, & Barron, 2014, 2013; Pendergast, 2010); children and families (Sterry & Beaumont, 2006; Sutcliffe & Kim, 2014); and senior visitors (Jang & Wu, 2006; Littrell, Paige, & Song, 2004; Prayag, 2012).

The diversity in VA markets is compounded by an inherently competitive marketplace for tourism experiences (Lennon & Graham, 2001; Lennon, 2004; Weidenfeld, Williams, & Butler, 2014a). As highlighted by Swarbrooke (2001), VA managers must be aware of the threats of not only direct competition (other VAs) but also indirect competition (leisure facilities, sporting venues, events, retail etc). In light of the competitive operating environment, VAs must consider collaboration and partnerships to maximise the likelihood of commercial success (Gradén & O'Dell, 2016; Hausmann, 2007; Weidenfeld, Butler, & Williams, 2011).

- *Service experience, expectations and product offering*

As argued by Nowacki (2009) the provision of quality visitor experiences is of critical importance to VA managers. In their study into the heritage tourism experience, Kempiak, Hollywood, Bolan and McMahon-Beattie (2017) found that satisfaction with the visitor experience led to greater word-of-mouth referral or return visitation. These represent two additional VA management challenges and indicate how quality experiences are linked to commercial benefits for VAs (Ma, Scott, Gao, & Ding, 2017; Richards & Wilkes, 2008).

Weidenfeld, Williams and Butler (2014) highlight the importance of visitor experiences as a competitive tool for the success of VAs. The authors cite the perishability of attraction experiences as a critical factor in their competitiveness. As visitors cannot store or retain anything tangible from the experience, VAs are challenged with providing a product that is not only satisfying but also memorable. This echoes Swarbrooke's (2001) paper, which identified the creation of the 'wow factor' and a unique selling proposition as a

crucial challenge for developing attractions. Recent research by Postma (2014; p.445) reiterates this by specifically questioning the future challenges of visitor attractions. The author suggests that future attractions must strive for complete experiential immersion and innovative techniques:

“From the moment visitors start queuing, they have to be immersed in a completely different world by tantalizing all their senses in a unique environment, with multi-dimensional experiences.”

In addition, Overskaug, Holt, Hagen, Næss and Steffensen (2010) highlight the need for museums to constantly renew and expand their product offering to sustain visitor numbers. Similarly, Whitfield (2009) argued that VAs need to diversify their products in order to respond to fierce competition in the marketplace. Increasingly, interpretation can be seen as one management technique to diversify the product offering. However, less is known about the role that interpretation has within the wider visitor experience at VAs. The need to explore innovative interpretation to meet the needs of new visitors relates to the work of Message (2006), who argued that museums needed to reinvent themselves over time to meet the changing needs of the market. Moreover, in their study of national park experiences, Wolf, Stricker and Hagenloh (2013) found that modern interpretation was well received with visitors, especially if it could be customised to their individual interests. Similarly, Calver and Page (2013) proposed that contemporary museums can fulfil both entertaining and intellectually stimulating experiences through the use of diverse and innovative interpretative techniques. Section 3.3 focusses specifically on interpretation and its role within the VA product.

An additional management challenge involved meeting and exceeding visitor expectations. As discussed by Swarbrooke (2001, 2002) this is particularly challenging for VAs as expectations change over time and are linked to individual motivations. Furthermore, there is a perceived change in the link between expectations and satisfaction. Historically, merely meeting visitor expectations largely satisfied customers, however today's visitors hope for their expectations to be exceeded - even though such expectations have increased (ibid). While meeting visitor expectations may represent a management challenge, less is known about how this challenge manifests into

the design, development and management of the VA product offering. As such, this study is particularly interested about how a VA management desire to meet/exceed expectations flows through to interpretation selection and technology adoption within this.

- *Management capabilities*

As discussed by Watson, McCracken and Hughes (2004), VAs require a variety of management competencies and capabilities that are unique within the tourism industry. In addition to managing the human resource (Graham & Lennon, 2002; Mayer, 2002), VA managers require a series of unique operational skills (Watson & McCracken, 2002). The literature surrounding VA management capabilities indicate several prominent research areas. Stakeholder management and collaboration with local communities represent a significant area of expertise for VA managers (Fyall, Leask, & Garrod, 2001; Garrod, Fyall, Leask, & Reid, 2012) similarly, the recruitment and co-ordination of volunteers are increasingly being relied on in VAs (Rhoden, Ineson, & Ralston, 2009; Smith & Holmes, 2012). Additional management capabilities cited in the literature involve revenue management skills (Heo & Lee, 2009; Leask, Fyall, & Garrod, 2013) and the application of work-process knowledge as a strategic tool in the VA sector (Marr, 2011). The management challenges apparent in VAs are often closely linked to the category of ownership such as public, private or charity (Garrod, Fyall, & Leask, 2002), with particular issues emerging from stakeholder engagement and multi-actor negotiation (Leask, 2010). While the challenges associated with VA manage structures have been identified in the literature, less is known about how these can potentially impact the success or failure of co-creation. This study has therefore sought to capture the VA management perspective that acknowledges the limiting factors associated with management capabilities, expertise and skills that either support or limit the co-creative process.

A key management capability involves conducting robust visitor research and effective feedback practices to acknowledge individual visitor expectations (Leask, 2016). The typical measures assessed in visitor research include: dwell time; visitor route tracking; quantitative satisfaction scores/ratings; repeat

visitation analysis, GPS location and; other evaluation techniques (Connell & Page, 2008; Mckercher & Lau, 2008; Wolf et al., 2013). Each of these can provide valuable data for assessing visitor interest, engagement and satisfaction, which is particularly relevant for VAs to engage in benchmarking practices for international comparative research (Leask & Fyall, 2006; Pearce & Benckendorff, 2006).

A number of authors have also attempted to create evaluation tools specifically for visitor perceptions in VA environments. Taheri et al. (2014) devised a visitor engagement scale that evaluates visitor engagement not only with interpretation, but the other facets of the VA experience. Similarly, Pallud and Monod (2010) created an 18-point research instrument that assessed visitors user experiences of IT-enabled media in a heritage context; their phenomenological scale provides a useful tool for evaluating holistic visitor experiences. Such measures aid in supporting VA managers in long-term development and strategic decision-making.

- *Funding landscape and pressures*

The presence and indeed the lack of suitable funding streams in the VA sector is a critical management challenge. In particular, the finite levels of Government funding for the cultural and heritage sectors in addition to fierce competition is been a well-documented management challenge (Leask, 2010; Lennon, 2004; Swarbrooke, 2001). Similarly, as argued by Swarbrooke (2002), there is a perception that investment in VAs can be seen as a 'high-risk' strategy for the private sector as a result of several high profile failures (e.g. The Millenium Dome, London). Furthermore, the financial pressures in the UK attraction sector are under heightened scrutiny as a result of Brexit and the limiting of access of EU cultural funding schemes (Anstey, 2016).

In a tense financial climate, effective revenue management and financial planning, particularly for VAs that are not-for-profit, is a vital management challenge. As such, the movement toward private external funding streams and ancillary revenue generation through commercial activity is becoming the norm (Connell & Page, 2009; Leask et al., 2013). Similarly, the VA sector is becoming increasingly focussed on innovate revenue generation practices and

this is reflected in the literature on crowdfunding in the cultural sector (Marchegiani, 2018), visitor donations (Apostolakis & Jaffry, 2013) or dual pricing strategies for museum visitors (Sharifi-Tehrani, Verbič, & Chung, 2013). This is however a contentious subject in the VA sector, with Leask (2016) highlighting the lack of focus on VA funding issues appearing in the academic literature. To address this gap, this study has explored the nature of VA funding with reference to the selection, provision and management of technology-mediated platforms to question whether funding pressures have a direct impact on experience co-creation processes.

- *Conflicting management approaches*

A significant management challenge involves the perceived conflict between the custodial role of VAs and their emerging role as sites for entertainment, learning and/or visitor enjoyment. VAs are becoming increasingly visitor-orientated and focussing on the visitor experience alongside the preservation of core resources (Gilmore & Rentschler, 2002; Radder & Han, 2015; Reussner, 2003). Research by Sheng and Chen (2012) agrees by suggesting a change in outlook among traditional heritage-based sites (such as museums/galleries) toward a new phase of 'museology' that focusses on innovation and a visitor-orientation. Moreover, Mencarelli and Pulh (2012) suggest that hybridised edutainment-based sites that offer significant variety in the product offering, can appeal to much wider diverse audiences. However, Camarero, Garrido and Vicente (2015) argue that there should be a degree of balance in museum strategy. While the authors advocate the need for museums to become visitor-focussed and innovative, they do highlight that maintaining a secondary role as custodians of knowledge can maintain the high-quality reputation of the museum. To acknowledge this division in the literature, a range of VA management roles have been acknowledged within the study (curatorial, learning, technology-management) to capture the various perspectives toward technology-mediated experience co-creation and the various roles that contribute to this process.

The perceived tension surrounding curatorial differences ignites questions put forth by Staiff, Bushell and Kennedy (2002) and revisited by Staiff (2014),

which debate who is curating messages and for whom. These works argue that traditional approaches to interpretation are formed based on a hierarchical relationship between those with knowledge (the curator) and those without (the visitor). This power distance immediately places the curator in a dominant position over the visitor. This appears to become problematic when strict curatorial control produces exhibition content that is too complex for visitors. However, as suggested by Kotler and Kotler (2000), in the new visitor-oriented approach in museums, management shift their mindset from being solely focussed on the artefacts to providing opportunities for immersive experiences. This is supported by calls from scholars who encourage VAs to use interpretation to provide accessible messages, aiding in the creation of multiple visitor narratives (Reisinger & Steiner, 2006; Welsh, 2005).

- *Access, overcrowding and visitor management*

Visitor management and overcrowding is a challenge affecting not only VAs but the destinations that they serve (Albrecht, 2017). The literature argues that overcrowding can not only create a negative perception of the visitor experience, but also compromise the core resource (Garrod & Fyall, 2000; Shackley, 1998). The ways in which VAs manage their visitors is therefore an important management challenge (Manning, Wang, Valliere, Lawson, & Newman, 2002). As discussed by Kuo (2002), a range of visitor management techniques are available however there is a clear distinction between 'hard' (regulation, barriers and zoning) and 'soft' (education, interpretation and guidance) approaches. However, Mason (2005) argues that to preserve the best possible visitor experience, 'soft' approaches to visitor management are optimal if they are well planned and implemented. As such, there is an increasing focus in VA research to explore alternative technologies for supporting visitor management, such as mobile-enabled visitor guidance (Tan & Law, 2016) in an attempt to minimise overcrowding and its associated negative impacts. However, despite technology being seen as a tool to support access and to diffuse visitors across a physical space, less is known about the visitors who fail to access interactive touchpoints and the extent to which this may limit the co-creation of experience.

Accessibility in tourism has become a key management challenge for service providers (Buhalis & Darcy, 2011). In VA research, much of the existing work on disability access and experience is based in the heritage sector. As highlighted by Foster (2004), the fragility and building restrictions of historic properties make them particularly susceptible to accessibility challenges. The accessibility of the on-site experience is an equally important management challenge. The attitude of VA staff, the physical layout and on-site facilities can be seen as potential barriers for engaging disabled visitors (Austin, 2002; Poria, Reichel, & Brandt, 2009; Walters, 2009). Increasingly, accessible VA experiences are viewed beyond the physical constraints and question services for sensory-impaired visitors such as those with limited vision (Mesquita & Carneiro, 2016; vom Lehn, 2010). Accessibility does not only apply to visitors with special needs, the provision of foreign language services and translation has also been cited as critically important for VAs targeting international visitor markets (Quétel-Brunner & Griffin, 2014; Swarbrooke, 2001). Furthermore, Alkahtani, Xia, Veenendaal, Caulfield and Hughes (2015) questioned whether socio-demographic factors influenced access to VAs and highlight the need to support (where possible) access by a wide range of audience types.

- *Conservation and preservation*

The need for the conservation and preservation of core resources is widely discussed in the VA literature (Leask, 2016). This is particularly relevant to VAs from the heritage and nature-based sector where conservation represents a critical management challenge (Ballantyne, Packer, & Hughes, 2009; Garrod & Fyall, 2000; Swarbrooke, 2002; Wijeratne, Van Dijk, Kirk-Brown, & Frost, 2014). Equally, the drive to maintain a quality visitor experience alongside conservation activity is high on the VA management agenda (Connell & Page, 2009; Firth, 2011).

Central to the academic discussion surrounding conservation of original resources is authenticity (Bryce, Curran, O’Gorman, & Taheri, 2015). Latham's (2015) study questions how visitors perceive and experience ‘the real thing’ (TRT) in a museum context. The author highlights the importance of physical objects for providing materiality, physical proximity and tangible evidence for

visitors. This was furthered by Candlin (2017) who investigated the motivation for visitors to touch museum artefacts without permission. The study found that visitors often felt a need to touch exhibits to check for authenticity, to discover more about the objects and to make physical contact with the past.

However, this is not the case in all VAs. Research by Hampp and Schwan (2014, 2015) suggests that the historical significance of exhibits in science-based sites was less important than the factual accuracy of the content. From a broader experiential perspective, Thyne and Hede (2016) suggested that authenticity is not only embedded in physical museum objects, but also in participation of co-creative activities. The authors argue that a visitor experience can be perceived as authentic even through non-material interactions with a site and can emerge as a result of active participation.

3.2.2 Exploring the Visitor Attraction Product

As with many other service sectors, VAs endeavour to offer more than tangible goods (Fopp, 1997; Hudson, 2008; Middleton, Fyall, Morgan, & Ranchhod, 2009; Misiura, 2006; Smith, 1994). As discussed by Xu (2010) the nature of the 'tourism product' is very different to that of other industries. The author suggests that the tourism experience is perhaps equal to, or in some cases, more important than the physical and tangible service received. This is especially true for VAs where often the prime motive for the visit is experientially driven (Voase, 2007; Wanhill, 2009b). As shown in Figure 12, a range of elements can affect the VA experience and contribute the VA product.

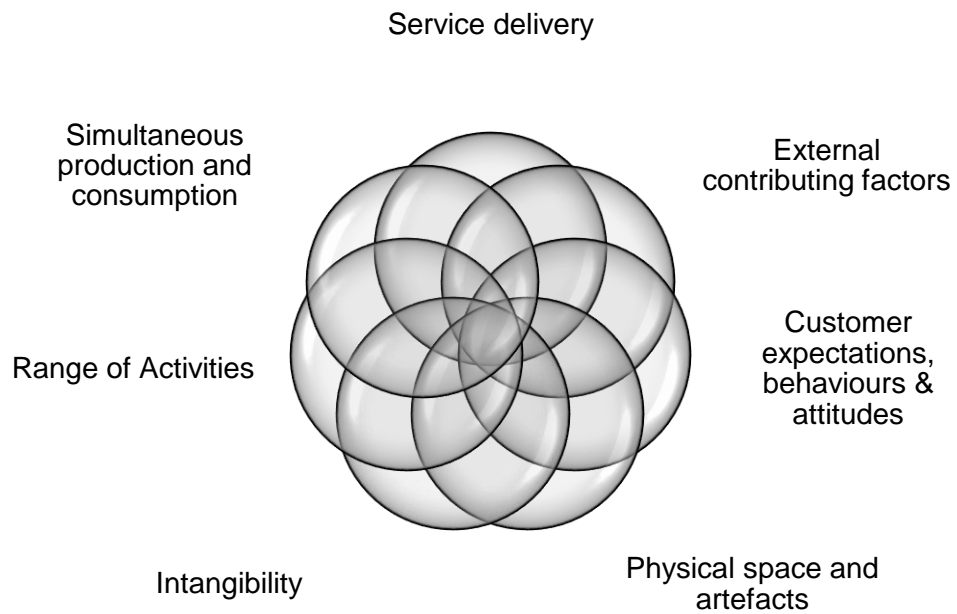


Figure 12. Elements affecting the VA experience
Based on: Reynolds (1999), Swarbrooke (2002) and Page & Connell (2014)

Often the means through which a VA can generate such a ‘wow factor’ is through its presentation and communication strategy. As suggested by Wanhill (2009b, 2009c) while the tangible core of the attraction product (for example artefacts) are vital, the way in which these are presented and communicated to the public is equally important. The author refers to this as the ‘imagespace’ or the intangible theme/story that becomes central to the visitor experience. Nowacki’s (2009) study confirms this by identifying sources of information and exhibits as the strongest factors contributing to visitor satisfaction in VAs. This would suggest that the way in which attractions communicate with visitors not only influences the experience, but also the subsequent value that is attributed to it. However, this connection is in need of additional research and this study attempts to explore the role that interactive technology (as a mediator) has in co-creating the visitor experience through various forms of communication.

3.3 Visitor Attractions and Interpretation

Although technology is used at various levels of VA operations, arguably its most visible presence is through the sites’ interpretation. As an integral part of

visitor management, the interpretative process serves a variety of functions within an attraction. Not only is it essential for information provision, but it can be used for: educational messages (Ballantyne, Hughes, Lee, Packer, & Sneddon, 2018; Walker & Moscardo, 2014; Xu, Cui, Ballantyne, & Packer, 2013); promoting responsible site behaviour and sustainability (Goodey, 2006; Howard, 2003; Orams, 1995; Stewart, Glen, Daly, & O'Sullivan, 2001); providing direction and accessibility (Quétel-Brunner & Griffin, 2014); establishing a sense of place (Chronis, 2012; Humphries, 2006; Stewart, Hayward, Devlin, & Kirby, 1998); encouraging reflection (Skydsgaard, Møller Andersen, & King, 2016); changing behaviours/attitudes (Powell & Ham, 2008; Walker & Moscardo, 2014); and enhancing the visitor experience (Cooper, Fletcher, Fyall, Gilbert, & Wanhill, 2004; McArthur & Hall, 1996). At the forefront of scholarly work in VA interpretation, Tilden offers a longstanding and widely cited definition of the process:

“An educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information.” (Tilden, 1957 as cited in Tilden, 2007, p. 33)

This definition indicates the core purpose of interpretation. Even from its early stages in academic research, the process of interpretation has been a vehicle to reveal meanings and foster understanding. Tilden (1957) further acknowledges the various means by which this process occurs. Original objects are mentioned (which can be identified as artefacts in a VA) in addition to first-hand experience (such as tactile exhibits where touch and play are involved). Finally, illustrative media refers to the various channels used to present the message (such as storyboards, panels, audio guides or audio/visual displays). Perhaps not explicitly referred to in the above definition are the personal interactions and storytellers that are common in the VA sector. A number of Tilden's contemporaries have separated figures such as tour guides from wider interpretative practice (Lugosi & Bray, 2008; Reisinger & Steiner, 2006; Robertshaw, 2006; Weiler & Walker, 2014). Although not the focus of this research, the role of personnel in the VA experience should be

considered particularly in terms of the relational quality and engagement that can come as a result of personal interpretation.

While Tilden's work could be seen as outdated, its guiding principles remain widely respected in contemporary VA research. As presented in Table 6, the author provides six key principles of interpretation, depicting its value, use and purpose. These have been adapted and developed by a number of other authors (such as: Ham, 1992; Knudson, Cable, & Beck, 1995), however many of the original principles remain relevant in interpretative practice today. Particularly interesting is the fourth principle regarding the chief aim of interpretation. The author suggests that whilst interpretation is an educational activity, it is not necessarily about instruction. The focus is placed firmly on stimulating and motivating visitors to interpret the messages presented to them, as opposed to presenting facts. Moscardo (1996) further advocates the role of interpretation in supporting mindful visitor behaviour. The author suggests that well-designed interpretation is key to encouraging alert, enthusiastic and inquisitive visitor behaviours in a VA environment. This is particularly important when referring to the co-creation perspective. Visitors should be provided with the tools to discover the VA from their own perspective and allowed the freedom to interpret the experience individually (Langer & Moldoveanu, 2000).

Principle 1	Any interpretation that does not somehow relate to what is being displayed or described to something within the personality or experience of the visitor will be sterile.
Principle 2	Information, as such, is not interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information.
Principle 3	Interpretation is an art, which combined many arts, whether the materials presented are scientific, historical, or architectural. Any art is in some degree teachable.
Principle 4	The chief aim of interpretation is not instruction, but provocation.
Principle 5	Interpretation should aim to present a whole rather than a part and must address itself to the whole man rather than any phase.
Principle 6	Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentations to adults but should follow a fundamentally different approach. To be at its best it will require a separate program.

Table 6. Tilden's Six Principles of Interpretation
Source: Tilden (1957) as cited in Tilden (2007, p. 34/35)

It should be noted that the work of Tilden does have theoretical and practical limitations. Staiff (2014) offers a critical view of Tilden's theoretical assumptions of interpretative practice. The author refutes many of the above principles at an epistemological level by challenging the role of the interpreter in the process. The author suggests that Tilden's approach is significantly outdated and vastly overstates the importance of the interpreter. There are further debates associated with the techniques of interpretation becoming more important than fundamental discussions on the content that is being interpreted (Staiff et al., 2002; Uzzell, 1998a). Central to this argument is the assumption that visitors are not capable of understanding the core message of a VA themselves, and therefore require a 'translator' to selectively present the information to them. As Staiff (2014, p. 37) argues, Tilden's work:

"...maintains a hierarchical power relationship between the 'expert' and the 'non-expert', between those with 'the knowledge' and those 'without the knowledge'."

This is an interesting debate to return to when considering the extent to which visitors can co-create their own individualised experience through interpretative media. Renowned exhibition designer and Editor of *Curator: The*

Museum Journal, Tom Hennes (2012, p. 135) raises this issue from a practice-based perspective:

“It is only when we cede authority, when we absolve ourselves of the obligation to tell the story, that we are able to create a thing that contains many stories so that others may encounter and re-encounter them – satisfying the purposes and aims that motivated their visit in ways that may also expand their awareness.”

This contemporary view challenges the traditional role of the interpreter that was to plan, design and implement VA interpretation to tell an established ‘story’. As indicated by the quotes above, there is increased awareness of how interpretation should encourage multiple and varied visitor narratives, rather than the consumption of a single predetermined story (Chronis, 2005a, 2015b; Hems, 2006; Reisinger & Steiner, 2006). Dimache, Wondirad and Agyeiwaah (2017) highlighted the relationship between personal narratives and the ‘official’ narratives offered by the VA. The authors argued that: *“depending on their own narratives of the historical phenomena being presented, the decision to accept or reject the master narrative produced by the museum is in the hands of the visitors”* (ibid, p297). This movement towards visitor autonomy in narrative creation was succinctly explained by Moscardo (2017, p. 177), as the process of *“giving visitors some control over aspects of the interpretation through choices and decisions that allow them to build connections with their personal context”*. Yet, while the link between interpretation and narrative creation has been established, little is known about how the joint development of VA narratives contribute to experience co-creation. It is therefore important to understand how technological platforms, as part of a sites interpretation, contributes to this process.

There are also operational limits to Tilden’s perspective of interpretation. Particularly with regards to modern practices which could arguably ‘over-interpret’ the core messages of the VA (Allen & Gutwill, 2004; Stevens, 2012). This moves interpretation from an act of presentation to a potentially incoherent ‘show’ or performance (Bramwell & Lane, 1993; Miles, 1994; Timothy & Boyd, 2003; Uzzell, 1998b). Furthermore, traditional views of interpretation within a rigid ‘sender-message-receiver’ communication model

(Walsh-Heron & Stevens, 1990) have historically placed visitors in a largely passive role within the experience. Despite these criticisms, Tilden's work can be described as seminal to the development of interpretation research and remains a core resource for studies in this area.

An alternative research stream views interpretation as a key management challenge and as a critical success factor for VAs (Beck & Cable, 2002; Knudson et al., 1995, 2003; Veverka, 1998; Widner-Ward & Wilkinson, 2006). McArthur and Hall (1993, 1996) discuss the role of interpretation as part of the wider VA strategy, stressing the importance of the sites' presentation within a larger operational plan. The authors particularly highlight the importance of coherent interpretation through a series of planned themes, concepts and messages that interlink to best represent the nature of the exhibition. This can be seen as a critical factor for the success of a VA and in particular the way in which it presents its core messages. Similarly, Ryan and Dewar (1995) and Rabotic (2010) suggest that as a practice, interpretation can have a profound effect on the competitiveness of a site and the wider destination. The quality, variety and effectiveness of the presentation all contribute to a lasting visitor experience, which in turn has implications for repeat visitation and word-of-mouth recommendations (Moscardo, 2014; Richards & Wilkes, 2008; Zhang, Wu, & Buhalis, 2017). This management-orientated perspective places interpreters in a clearly defined role as 'cultural brokers' who translate core messages whilst working towards key commercial goals (Hughes, Bond, & Ballantyne, 2013).

The extent to which interpretation can impact visitor experiences is a niche research area. Ballantyne, Packer and Sutherland (2011) provided strong insight into the extent to which interpretation can shape memorable visitor experiences in the context of wildlife attractions. The authors suggest the power of interpretative practice is to "*reinforce visitors' sense of wonder, awe, excitement and privilege*" (ibid 2011, p. 78). From another perspective, Gilbert and Stocklmayer (2001) posit the value of interpretation in creating 'analogical representations' – a means of aiding understanding through physical or virtual representations. The visitor, in the pursuit of a unique experience, can then

manipulate and explore these representations (in the form of interpretative media). Often the subject of tourist satisfaction studies, visitors engagement with interpretative media can be based on a variety of factors (Beattie & Schneider, 2018). However, Weiler and Walker (2014) suggest that in order for interpretation to positively contribute to the visitor experience, it must be: involving (sensory/active); thematic; relevant; enjoyable (through variety); engaging (on various cognitive levels); accurate; and logical (flow and structure). An additional layer is provided by Dierking (1998), who considers social context as an important dimension. The author suggests that many VA environments are social settings, and the extent to which visitors engage with the interpretation can often be influenced or even directed by the social group they find themselves in. This argument was furthered by Uzzell (1998b, p. 249) who suggested a need for VA managers to tailor interpretative provision to various audiences:

“There is no such body as ‘the general public’. The so-called ‘general public’ is made up of different audiences with different needs and different expectations. These should be acknowledged and planned in order to ensure effective interpretation and conflict avoidance. Different groups (e.g. the elderly and children) will be looking for different types of interpretive experiences than singletons or visitors with a special interest”

A key study by Skibins, Powell and Stern (2012) was critical over the lack of research into the effect of interpretative practice on visitor experiences. In their meta-analysis of 70 articles focussed on the influence of interpretative methods, only 10 were found to question the impact of presentation on visitor satisfaction. Whilst the physical design and presentation of the interpretative media is undoubtedly vital to how it is received, Goulding (2000a) suggests that there are broader influencing factors that impact the visitor experience. In particular, socio-cultural factors, level of cognitive stimulation, orientation and physical surroundings had a strong mediating effect on how visitors interact and engage with exhibits, which influenced their overall visitor experience. Hennes (2010) goes so far to say that interpretative exhibits should be viewed as encounters within a larger framework of experience, with each touch-point contributing to the visitors understanding, enjoyment and awareness of the

site. These works correlate with conceptual arguments raised in interpretation research that suggests visitors can act as ‘professional interpreters’. It is therefore vital for VA managers to encourage participation, collaboration and dialogue (Ablett & Dyer, 2009; Hooper-Greenhill, 1999; King, Stark, & Cooke, 2016; Silberman, 2012) to move the visitor from a recipient of information to an active co-creator of the interpretative experience. Although, until now, no studies have questioned the factors which may support or limit the process of technology-mediated experience co-creation in a VA context.

These works identify the inherent complexity in assessing the quality of interpretation and its overall effect on the visitor experience. While this can be seen as a significant driver for satisfaction, there are also broader influencing factors that mediate the experience. These issues suggest a need for consistent monitoring and evaluation of interpretation not only against operational objectives, but in the wider context of visitor satisfaction to ensure effective presentation and achievement of desired outcomes (Beckman, 1999; de Rojas & Camarero, 2008). This is supported by Uzzell (1998c) who highlights the failings in many VAs in their approach to evaluating interpretative programmes. The author advocates the role of evaluation as a “*vital and integral part of interpretive provision*” (ibid 1998c, pp. 200–201), which should be used holistically to better meet the needs and wants of the visitor.

It could be argued that the impact of interpretation is contextual and determined by three key factors. It depends on the nature of the message, the desired visitor outcomes and the core resource being presented. Schwan, Grajal and Lewalter (2014) provide an interesting discussion as to the impact of presentation in science-based attractions on visitor learning and awareness. The authors suggest that in the context of science centres and museums, preserved artefacts are important to aid visitor comprehension and subsequent understanding. However, in other types of VA, the lack of original objects or core resources, requires greater interpretative techniques to transmit the core message. In this case, there may be a greater need to explore a variety of interpretative media to engage the visitor. The exception to this would include largely aesthetic experiences (such as art galleries) where interpretation can

be minimal so not to detract from the works on display. In this circumstance, the interpretation is object-focussed to allow for individual visitor appreciation as opposed to factual understanding (Kirchberg & Tröndle, 2012).

Finally, the use of multi-sensory engagement in interpretative media has received limited academic attention from the experiential perspective. In his study into the interpretation of Byzantine heritage, Chronis (2006) found that multi-sensory experiences that are supported with original artefacts can create embodied connections to the past. Similarly, Moscardo (1996, 2010) found that a multi-sensory heritage setting contributed to increased visitor enjoyment, higher satisfaction and greater learning throughout the experience. Bonn, Joseph-Mathews, Dai, Hayes and Cave (2007) agreed, by arguing that the sensory and atmospheric environment presented in VAs can act as a differentiating feature for visitors and, if well-managed, act to improve the competitiveness of the site. However, few studies have considered the role of multi-sensory interactions as contributing factors within the co-creation of technology-mediated experiences. It is therefore important for this study to recognise the sensory interaction that can be offered by VA interpretation in addition to its content.

3.4 Embedding Technology in Attractions

A useful means to visualise the embedding of technology in an attraction setting is presented by Benckendorff, Moscardo and Murphy (2005). As shown in Figure 13, the authors identify a distinction between ‘backstage’ and ‘frontstage’ technology use. Arguably, such language relates to the concept of the experience economy where some aspects of the visitor experience are visible whereas others remain hidden from view, but act to facilitate visitor management. The Tourism Technology Adoption Model provides an indication of how technology has become ingrained throughout the VA system; however, it is interesting to note that (as shown at the top of Figure 13), the type of tourism system (or type of VA) influences the adoption of technology. This concept is further explored in Section 3.4.1.

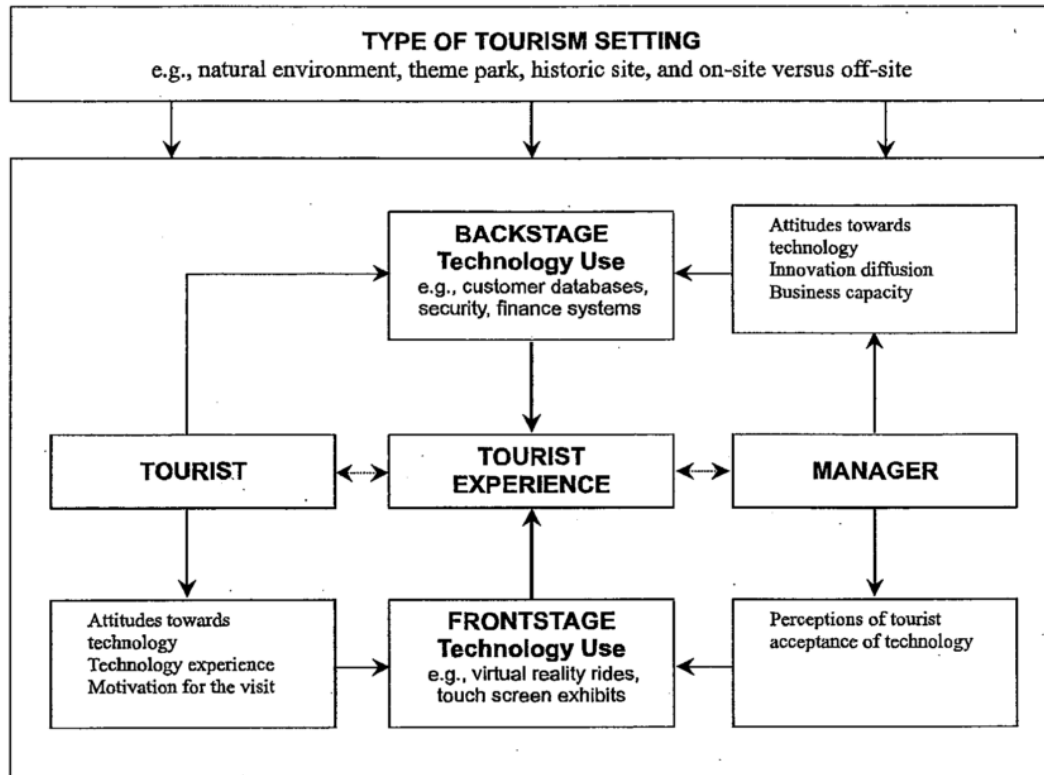


Figure 13. The Tourism Technology Adoption Model
Source: Benckendorff et al. (2005, p. 39)

In extending the notion of backstage and frontstage technology, a model developed by Stipanuk (1993) and later adapted by Benckendorff, Sheldon and Fesenmaier (2014) suggested VA technologies can serve a range of functions dependent on the personal viewpoint of the visitor and its application within the site. A number of these are summarised in Table 7, with examples of how they could be applied in practice:

ROLE	DESCRIPTION	EXAMPLE
Enabler	Technology that stimulates and supports travel demand, and facilitates the wider tourism industry	Ticketing system
Enhancer	Technology used to support and enhance the visitor experience	Orientation systems, guides, translation
Attractor	Technology that acts as core attraction for the visitor	Simulator ride
Protector	Technology used to protect visitors and the core resource	Climate control, alarm systems
Reminder	Technology used to capture, share or relive experiences	Recording, social media, reviews
Substitute	Technology used to recreate aspects to provide a substitute/extended experience	Virtual reality platforms
Destroyer	Technology that can compromise the experience	Failure, breakage, lack of availability

Table 7. Roles of Technology
Adapted from: Stipanuk (1993) and Benckendorff et al. (2014)

The range of roles technology can play within VAs would suggest that visitors are likely to engage with at least some of those identified above during a typical visit. Visitor expectations of technology in travel experiences were segmented by Sheldon (1997) and later examined by Benckendorff et al. (2005). The authors discuss a dichotomy between ‘high-tech’ visitors (those who expect a high level of automation and interactivity) and ‘high-touch’ visitors (those who actively avoid technology in search of strong relational human experiences). It could be argued that this either/or approach does not acknowledge visitors who value both opportunities for interactivity and personal interpretation. Nevertheless, this suggests that visitors will likely enter a VA environment with certain expectations and preferences for technology use. However, significantly less is known about how these preferences and engagements within technology act to shape the co-creation of technology-mediated experience. This study therefore aims to capture these through the use of visitor interviews within various VA exhibition spaces.

In an attempt to remain competitive and to respond to societal changes in visitor preferences, VAs have increasingly explored technology as an

additional way to communicate and engage with the public (Rey & Casado-Neira, 2013; Taheri et al., 2014; Var, Chon, & Doh, 2001). Where once attractions relied on largely static means of presentation, now the trend toward interactive interpretation has become firmly embedded in VA operations. As highlighted in Tilden's principles, interpretation as a process involves more than formal information provision. With reference to the heritage sector, Uzzell and Ballantyne (1998) distinguish between 'hot' and 'cold' interpretation. The authors suggest that cold forms of communication are purely factual (such as dates, historical records and information) whereas hot interpretation is seen as more emotive. This refers to a presentation style that stimulates emotional engagement with visitors and elicits a personal connection with the content. Similarly, McIntyre (2009) identifies hot, warm, cool and cold spaces in museums and galleries to balance the visitor experience between intense engagement and quiet reflection. Harris (2005) and Huang and Chiang (2007) take a broader view, citing the importance of values, personal narratives and emotion in VA interpretation. The authors discuss the practice of transmitting pre-selected values through increasingly innovative interpretative means, and subsequently finding a balance between an informative and emotive experience. Visitors follow the broad narrative established by the attraction, but should have free and ample opportunities to develop their own perceptions and stories from the experience (Mason & Kuo, 2008; Moscardo, 2010). This has strong parallels with the experience co-creation literature, that stresses the managements role in creating the space for experience rather than the experience itself (Tung & Ritchie, 2011; Zomerdijk & Voss, 2010). However, to-date, no studies have explored these concepts specifically in relation to technology-mediated experience co-creation and this provides a viable avenue for this thesis.

A number of authors suggest that while the factors drawing visitors to VAs remain the same, it is the expectation of their presentation that has changed (Martin & Mason, 1993; Wanhill, 2009a). Stuedahl and Smørðal (2011) debate this trend in their study of children's reception of museum exhibits. In particular, the authors suggest that younger generations are more accustomed to a participatory culture that conflicts with the traditional style of presentation in

museums. This has led to a wealth of studies that have explored the role that interactive, social and mobile media can play in interpretative practice for younger target markets (Kahr-Højland, 2007; Russo, Watkins, Kelly, & Chan, 2007). However, there is a need for up-to-date research that questions whether VA managers are actively choosing interactive technologies for the purpose of targeting various audience groups and whether this supports or inhibits the co-creation of experience. These interpretative platforms often place greater autonomy and creative control on the visitor, in an attempt to encourage an individually crafted narrative. These innovations in interpretation can also represent a strategic challenge for VAs, often in settings that are sensitive or arguably controversial. An example of this can be seen in wildlife-based sites. As the social acceptance of caged animals in zoos and aquaria has declined (Swanagan, 2000; Swarbrooke, 2002), there has been a steady increase in other interpretative methods such as technology and personal interpretation to tell the same story a different way (Weiler & Smith, 2009; Yocco, Danter, Heimlich, Dunckel, & Myers, 2011).

The academic literature has produced a wealth of studies examining this change in approach, often citing the contested term 'edutainment' as a blending of educational information and entertaining presentation (Ahmad, Abbas, Yusof, & Taib, 2013; Anderson, 2004; Bennett, 1999; Leighton, 2007). This debate between education and entertainment has seen a plethora of support in the VA literature, with much more emphasis placed on facilitating and encouraging varied visitor experiences (Mencarelli & Pulh, 2012; Oh, Fiore, & Jeoung, 2007). This blending of different experiences was strongly supported in the Experience Economy, with the identification of a 'sweet spot' in service experiences (cf. p.11). A point at which entertainment, aesthetics, education and escapism converge, to provide the richest possible experience for the customer (Pine & Gilmore, 1998). Although perhaps not as current as the co-creation literature, in a VA context this concept of balance in the experience is still relevant to this study. These hybrid products often integrate interactive and 'hands-on' exhibits in an attempt to both present the core message but also actively engage the visitor in generating their own experience (Mencarelli & Pulh, 2012; Van Winkle, 2014). Other scholars

suggest that the use of interactive media is vital for 'bringing to life' complex subjects. There are numerous examples of this in science centres and museums, where often technology has been used to demonstrate phenomena that cannot be physically displayed (Falk & Dierking, 2010; Falk & Storksdieck, 2010; Kitalong, Moody, Middlebrook, & Ancheta, 2009). However, these have yet to be viewed through the co-creative lens and particularly lacking is the question over whether replication in VA environments contributes positively or negatively for experiential co-creation.

3.4.1 Application of Interpretative Media

Despite the growing role of interactive technology in the VA sector, few studies have focussed on the extent to which it facilitates visitors in co-creating their experience. While certain platforms may be seen as engaging, this does not necessarily translate into a co-created experience in the eyes of the visitor. Figure 14 identifies some of the various types of non-personal interpretative media alongside typical examples found in VAs. This is not an exhaustive list; however, it adds some context to the range of interpretation open to VA managers and subsequently offered to visitors. It should be noted that certain types of attraction generally avoid technology within their interpretation. For example, religious or sacred sites often use personal interpretation through tour guides to support an emotional connection (Hughes et al., 2013), whereas public/botanical gardens often use minimal printed material so not to detract from the natural landscape (Bryant, 2006; Connell & Meyer, 2004).

Medium	Examples
Print	<ul style="list-style-type: none"> • Information panels • Descriptions of artefacts • Printed guides / materials
Audio / Visual	<ul style="list-style-type: none"> • Audio guides • Projections and information screens • Voice-over dialogue
Interactive Exhibits	<ul style="list-style-type: none"> • Interactive touch-screens • Reactive media • Mechanical exhibits
Mobile / Wearable Technology	<ul style="list-style-type: none"> • Mobile applications • Web-enabled devices • Podcasts • Wearable technology – e.g. Google Glass
Augmented / Virtual Reality	<ul style="list-style-type: none"> • 3/4D experiences • Virtual reality presentations • Interactive game consoles

Figure 14. Types of interpretation and examples
Based on: Benckendorff et al., 2006; Ham, 1992; Knudson et al., 2003

While traditional methods of interpretation have remained steadfast, there are key technological developments that are changing the ways in which VAs present themselves. Chief among these is the growth in mobile and web-enabled platforms, which has revolutionised the way in which VAs both market and present themselves (Coussement & Teague, 2013). The proliferation of mobile media has not only altered that way in which visitors search for information (Dickinson, Hibbert, & Filimonau, 2016; Sawhney et al., 2005), but it has also become a favoured platform for personalised applications (Zheng, Liao, & Qin, 2017). VAs have increasingly explored ways in which their interpretation can be made mobile for visitors. For example, Kang and Gretzel's (2012) study explored the potential of podcasting in a museum environment. This approach allows the VA to present information directly to the visitor with limited cost, while also providing a strong way of encouraging pre- and post- visit engagement. Similarly, Dickinson, Ghali, Cherrett, Speed,

Davies and Norgate (2014) discuss the growth of Quick Response codes (commonly known as QR) in VA settings. The authors highlight the value of QR technology with its ability to minimise physical information by off-loading content into virtual spaces accessible through smartphones. In addition, the content can be dynamic with a mixture of written, graphic and multimedia interpretation. The use of QR platforms are particularly appropriate for sites with vulnerable core resources (Martínez-Graña, Goy, & Cimarra, 2013) or for VAs with limited on-site interpretation (Betsworth, Bowen, Robinson, & Jones, 2014; Carnall, Ashby, & Ross, 2013). In a similar study, Vavoula, Sharples, Rudman, Meek and Lonsdale (2009) found that mobile-enabled applications are particularly useful for the education and school visit market. The authors particularly examine a platform called 'Myartspace', an application which links museum collections to a virtual space which can be accessed in a classroom environment and freely explored by students. Mobile platforms such as 'Myartspace' support the access to information and free-learning that museums strive to provide (Booth, 1998; Wishart & Triggs, 2010).

Perhaps less widespread, but increasingly being trialled in VAs is the application of virtual reality (VR) platforms to interpretation. Research in this area has largely examined the potential for virtual platforms in tourism and leisure settings, although to date the majority of publications appear in computing/technology focussed journals. As discussed by Kohler, Matzler and Füller (2009) the benefit of using virtual channels is the immersive and interactive quality it can offer individuals. Visitors can engage and interact with inanimate objects to boost their understanding in a more dynamic way. Carrozzino and Bergamasco (2010) and Cranmer, Jung, tom Dieck and Miller (2016) support this by suggesting the potential for museums to diversify their collections through virtual means. Museums are now not limited to static presentations and increasingly collections can be explored uniquely by the visitor. Typical VR interfaces that can be found in VAs include holographs, projections, interactive and immersive spaces that have developed as a result of the growth in online gaming culture (Economist, 2006; Xu, Tian, Buhalis, Weber, & Zhang, 2016). A distinction should be made as to the application of VR to this research. The literature identifies a division between virtual

collections that are exclusively accessible online (often referred to as Second Life) that require no physical presence at the VA (Robles-Ortega, Feito, Jiménez, & Segura, 2011), and virtual exhibitions that are embedded within a tangible VA product (such as a separate gallery within the visitor route). Recent research by Mura, Tavakoli and Pahlevan Sharif (2017) has questioned the perception of authenticity associated with VR experiences. The authors found that while individuals realised the virtual experience was not real, the sensory and physical interaction that VR offered was a crucial component in the perceived authentic experience. While this study acknowledges the growth of online collections in VAs, the focus here remains on physical exhibits that are part of the tangible on-site visitor experience.

Often described synonymously with VR, augmented reality (AR) differs significantly in its approach and application to VAs. AR refers to virtual information that is overlaid with video content of real objects (Styliani, Fotis, Kostas, & Petros, 2009). The purpose of AR in a VA context is therefore to enliven exhibits that are normally static (Sylaiou, Mania, Karoulis, & White, 2010) and in essence 'bring collections to life' for visitors. Research in this area has often promoted the use of AR for supporting and enriching visitor experiences by aiding understanding of objects and events in context (Chung, Han, & Joun, 2015; Jung, Chung, & Leue, 2015; Jung, Dieck, Lee, & Chung, 2016; Scarles, Casey, & Treharne, 2016). Similarly, the potential of AR to create 'playful' and immersive exhibits has been welcomed for providing some level of tangibility and enhancement to otherwise abstract VA experiences (Dancstep, Gutwill, & Sindorf, 2015; Tussyadiah, Jung, & tom Dieck, 2018; Woods et al., 2004). As such, it is clear to see why this approach can be alluring for VA managers whose core resource may be largely fixed or unsuitable for close visitor interaction.

Recent research by He, Wu and Li (2018) linked the use of AR to the potential commercial benefits that it poses to VAs. The authors argued that an innovative use of AR in an appropriate museum setting has the potential to encourage additional visitor spend. Similarly, Chung, Lee, Kim and Koo (2017) found, in their study into the use of AR in cultural heritage sites in Korea, that

a satisfying visitor experience supported by AR, led to an intention to revisit the site. Finally, Tussyadiah, Jung and tom Dieck (2017) found that AR applications can stimulate positive word-of-mouth reviews and target new markets in a VA setting. The studies above indicate that AR not only has the potential to enhance visitor experiences, but also provide significant benefits to VA managers in overcoming some of the typical challenges inherent in the sector.

Although at various stages of development, the innovative examples presented here all share common attributes when viewed through a co-creative lens. While these technologies are used primarily to extend the interpretation of the attraction, they also serve wider functions that echo key concepts in SD Logic. The use of platforms such as smartphones and AR/VR offer additional layers of personalisation and autonomy for the visitor. They become designers of the presentation that they engage with, as opposed to passive recipients. Furthermore, technological touch-points within the VA environment provide the options for interactivity and customisation that reoccur throughout the experience co-creation literature.

3.5 Visitor Choice and Preference

Crucial to the debate surrounding the role of interactive technology in VAs is the degree of visitor choice and preference with regards to their use. However, much is still unknown as to the visitor perspectives toward toward this. In the case of 'free-flow' exhibitions (such as open museum exhibition spaces), engagement with interactive exhibits is largely reliant on individual choice and visitor preference. This is not only difficult to measure, but also difficult to explore in any great depth. As identified by Pallud and Monod (2010), very few contextual models or frameworks exist which evaluate the visitor experience with particular reference to interactive technology in a VA setting. Peacock and Brownbill (2007) present an argument for multi-faceted analysis of visitor experiences with a museum website. While the original model focusses on web-based content, it can be adapted and remains relevant to exhibition technology across VA. As shown in Figure 15, various levels/perspectives contribute to the overall visitor engagement with technology in attractions.

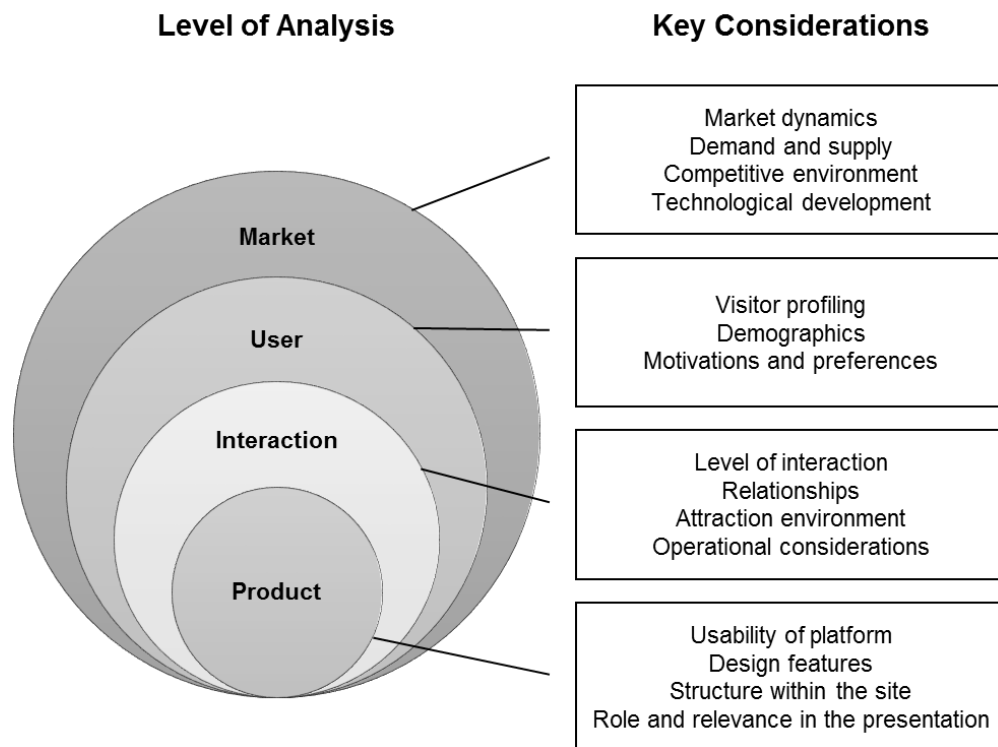


Figure 15. Conceptual Model for Evaluating User Experience of Museum Website
Adapted from: Peacock & Brownbill (2007)

With particular reference to the ‘User’ dimension, a wealth of research has attempted to explore the role of visitor motivations, preferences and expectations of VA interpretation. Key research by Stewart et al. (1998) identified key differences in how visitors made use of interpretation in the context of Cook National Park in New Zealand. The authors posit four categories of visitor: ‘seekers’ - those who actively seek out interpretative material; ‘stumblers’ - those who stumble across information accidentally; ‘shadowers’ – those who are chaperoned toward interpretation by other individuals; and ‘shunners’ – those who actively avoid interpretative material. These distinctions are supported by Poria, Biran and Reichel (2009) who found that visitors to selected heritage sites exhibited unique behaviours toward interpretation, based on their individual motivations and circumstances. Moseley (2013) and Rennie, Evans, Mayne and Rennie (2010) suggest that visitor uptake of attraction technology has strong implications for encouraging

awareness (of the site and the product), strengthening interest and maintaining attention. However, as discussed by Voase (2002), the proliferation of information and the ever more advanced means of presentation can create a level of 'consumer fatigue' in tourism experiences. For VA managers, it is therefore important to ensure balance in the presentation, to retain the attention of visitors without overwhelming them. While there are various perspectives about visitors' preferences, expectations and use of technology in VAs, these have yet to examine within the frame of co-creation theory. This study therefore considers how visitors to VAs perceive and interact with technology in-situ and questions the extent to which these perceptions and determinants can influence the co-creation of the technology-mediated experience.

The impact of demographics or visitor groupings on technology use in VAs is increasingly debated in the academic literature (Benckendorff et al., 2006). Often the focus is placed on younger generations being more technologically literate and therefore more susceptible to interactive exhibits (Stuedahl & Smørdal, 2011). However, advocates of personal interpretation (such as guided tours) suggest, that the most effective means of tailoring messages to diverse visitor groups is through face-to-face communication and reject claims that technology could replace this (Chen, Hwang, & Lee, 2006; Chronis, 2015a; Hu & Wall, 2012; Pearce, 1984; Roberts, Mearns, & Edwards, 2014). An interesting example that attempts to bridge museum technology with a relational quality is the PEACH (Personal Experience with Active Cultural Heritage) project. This technological platform which is facilitated through smartphones/tablets, provides visitors with virtual tour guides which they can interact with throughout their visit (Stock et al. 2007). This platform is not only physically interactive through touch, but also relational through active dialogue. An early study by Light (1995) investigated visitor awareness, attention, interest and preference toward various interpretative media in a heritage context. The author found that visitor behaviours toward the interpretation were far from consistent. The study reaffirms the individual nature of both the visitor and the interpretative media. For this study, it is therefore necessary to not only focus on the technology within the VAs, but also the individual

management and visitor issues contributing to its effectiveness as a mediator in the co-creation of experience.

Individual motivations and outcomes are key contributing factors to how visitors behave toward interactive exhibits. This can be seen in the extensive body of knowledge associated with informal learning in the VA context. A number of authors have questioned the extent to which VA exhibitions can support and stimulate visitor learning (Ansbacher, 2002; Falk, 2004; Puchner, Rapoport, & Gaskins, 2001; Shouse, Lewenstein, Feder, & Bell, 2010). Jansen-Verbeke and van Rekom (1996) found in their study of museum visitors in Rotterdam, “learn[ing] something” and “food for thought” ranked highest for what motivated an individual to visit. Similarly, in his study of field trips to science centres, Benton (2013) suggests ‘elements of play’, exploration and free-choice feature highly in visitor expectations of learning-based exhibits. Finally, recent research by Benckendorff, Tussyadiah and Scarles (2018) identified the opportunities posed by AR in the pursuit of inter-generational learning in VAs.

As arguably the most visible facet of the exhibition, interpretation has increasingly been the subject of visitor studies to debate its role in learning and attitude change (Lee, 1998; Packer, 2006; Rennie & Johnston, 2004; Rennie & MacClafferty, 1995). The way in which a VA presents its core resource to the visiting public has direct implications for the reception of an educational message. Interactive technology can be seen as a vital tool for encouraging ‘learning by doing’, providing individual feedback and offering active fun instead of passive learning (Falk, Scott, Dierking, Rennie, & Jones, 2004; Falk & Storksdieck, 2010; Hertzman, Anderson, & Rowley, 2008; Hooper-Greenhill, 1994). Furthermore, Van Winkle (2014) suggested that in a free-choice environment (such as a museum) the more ‘entertaining’ a tour was perceived, the less demanding and intellectually difficult it was received by the visitor. The author terms this ‘cognitive load’ or the extent to which an experience is viewed as complex and difficult to process. This, however, does reignite the debate surrounding ‘edutainment’ in a VA environment (cf. 83). From management-related studies, the learning dimension has extended into exhibition design

and particularly, the ways in which VA managers select interpretation to target learning outcomes (Ahmad et al., 2013; Hashim, Taib, & Alias, 2014). For example, Ahmad, Abbas, Taib and Masri (2014) suggest four styles of exhibition that subsequently target various learning styles of visitors:

- **Contemplation** – viewing and appreciation of individual objects for thought provoking experiences
- **Comprehension** – contextual or themed exhibitions that present objects/artefacts in association with one another
- **Discovery** – visual and active discovery of collections in a systematic manner
- **Interaction** – most involved style of presentation, hands-on, often technologically mediated and explorative

However, while learning and the pursuit of knowledge may be motivations for some visitors to VAs, this is not necessarily representative for all visitor groups. Alternative motivations, such as pursuit of leisure, nostalgia, personal heritage or communing with nature, can all apply to the VA industry. Likewise, not all VAs are rooted in education, for some entertainment may be the core product offering or aesthetic appeal (in the case of natural attractions). While learning and educational messages appear in a variety of interpretative strategies, not all visitors would actively seek them out or choose to engage with them. This is particularly relevant when discussing interactive technology, as this has the potential to be both educational and entertaining thus catering to the individual motivations of visitors to the site. Therefore, it is argued that to best represent the broad applications of interactive technology in VAs, the experiential perspective takes precedent over the learning dimension. While learning is undoubtedly a significant part of VA experiences, this should not be viewed as the only type of experience on offer.

In their study of visitors' expectations of ICT use in a museum setting, Rey and Casado-Neira (2013) found that the majority of respondents (64.0%) identified their top priority for technology was to offer greater 'dynamism' to the experience. In practice, this referred to using technology as a means for altering and enhancing the fixed narrative of the museum. This was closely

followed by 60% of the respondents identifying 'information provision' as a key expectation of ICT in museums. This is particularly relevant to interactive methods of presentation that move beyond printed panels and storyboards. This study presents some interesting findings for how visitors to VAs may have preconceived expectations regarding, not only the presence of technology, but also how it is implemented at the exhibition level. The expectation of interactivity has become increasingly documented in the VA literature (Sheng & Chen, 2012), often with larger societal drivers such as technological literacy, socio-demographic change and mass media exposure seen as catalysts for changing expectations toward technology use (Barry, 1998; McPherson, 2006).

3.6 Authenticity in Technology-mediated Interpretation

As noted by Frochot and Batat (2013), despite the wealth of research, authenticity remains a divisive issue in VA environments. Reisinger and Steiner (2006) argued that authentic tourism was less about the consumption of the "real" or the "genuine" and more about the extent to which tourists could make-up their own minds about their own individually crafted experiences. This does however pose questions about the role technology plays within the experience. As such, the rapid development and mass adoption of technology-mediated interpretation has reignited debates surrounding authenticity and the visitor experience and the following discussion synthesises many of these perspectives.

In their study into virtual tourism experiences, Mura et al. (2017) argued that digital technologies can be seen as a tool to support perceptions of authenticity through the provision of multi-sensory experiences. The authors found that technological mediation in unison with physical/tangible interactions encouraged feelings of authenticity, however did suggest that virtual experiences could only complement rather than replace corporeal travel. Guttentag (2010) agrees, by highlighting the potential of VR in re-creating historic settings for the public. The author acknowledged the value in offering virtual substitutes in certain heritage environments but advised caution about

misrepresentation or inaccuracies in the presentation which could damage the authenticity of the experience.

Drawing on a constructivist approach to authenticity, Molz (2012) suggested that authentic experiences are determined in the eye of the beholder and as such, technology does not act to commodify, but to breathe new life into cultural practices and infuse cultural products with new meaning. The author does however recognise the complex relationship between technology and authenticity in academia:

“Just as new technologies touch a nerve of anxiety around deception, alienation, commodification and the collapse of social and spatial boundaries, so too do they inspire dreams of wholeness and of (re)connecting in emotional and embodied ways with places, people and the self” (Molz, 2012, p. 132)

Similarly, recent work by Lugosi (2016) argued that perceptions of authenticity are determined by a network of actors who negotiate experiential objects through human and non-human valuation practices. Such an argument resonates with the co-creative perspective in tourism experiences but further advocates the powerful role technology can have as an agent within the authentication of the visitor experience.

From a futurist perspective, Chambers (2009) identified a shift in focus from concerns over authenticity in tourism, to an appreciation of significance. In discussing interpretative practices of the future, the author argued that future interpreters should allow for ambiguity and entertainment in their presentation as opposed to the pursuit of blanket authenticity (presenting the one real thing or story). Furthermore, Fu, Kim and Zhou (2015) questioned the role of modern technology in staged authenticity in Chinese intangible heritage. Their study found that technology could be used to immerse visitors into constructed environments in which original items are presented. Similarly, the sensory immersion afforded by the technology supported perceived authenticity of the experience for leisure-seekers. This does however highlight the need for authenticity in technology-mediated experiences as being organic in that it can be perceived differently by visitors with different motivations (e.g.

entertainment vs learning) (Wang, 1999). Dueholm and Smed (2014) approach the topic of authenticity from a management perspective. The authors highlighted the inherent challenge for heritage managers in creating enriching visitor experiences for increasingly diverse audiences whilst also being aware of the various visitor perspectives towards and desires for authenticity.

Whilst a number of contemporary authors promote the use of interactive technology within VA interpretation, there have been significant criticisms of its use in certain environments and contexts (Cooper, 1991). Early critique by Stevens (1989) and Russell (1989) suggested that the growth of interactive presentation methods in the heritage sector had the potential to compromise the effectiveness of the messages being conveyed. As indicated in the following statement:

“Interpretation is, today, in great danger of being hijacked by the designers and media technocrats than ever before. The media is becoming the message.” (Stevens, 1989: p. 102)

This refers back to larger debates over authenticity in the experience and particularly the ways in which attractions present themselves. Goulding (2000b) discusses the abundance of interactive media in museums as a carefully engineered mask. The author suggests that interactive experiences often involve the visitor more than static ones, which masks the lack of an authentic encounter. The technology becomes the focus and the subsequent experience is accepted. This was termed as the ‘Guggenheim Effect’ by Carrozzino and Bergamasco (2010), who argued that (in the context of VR) interactives could become such advanced showpieces that the information they were there to present becomes lost. There’s therefore a need to understand whether interactive technology, despite its potential benefits, can compromise the core message or the underpinning subject-matter of the VA exhibition. In addition, from a co-creative perspective, does this have a lasting effect on the co-creative potential of the visitor experience?

However, this perhaps does not reflect the larger issue apparent in the debate over authentic experiences and interpretation. Wang (1999) draws attention to

the inherent difficulty with claiming authenticity in an environment (such as certain types of VA) that is largely constructed and engineered. The mere act of interpretation can arguably compromise the authenticity of the experience, by presenting a narrative that would not naturally exist. This is important for this study, as certain VAs do not necessarily endeavour to be 'authentic'. For example, exhibits in a science centre could not be identified as authentic in the traditional sense. These have been reconstructed and staged to convey scientific processes that visitors would not normally be able to see in tangible form (Hampp & Schwan, 2014). From this perspective, interactive technology does not attempt to provide an authentic or 'real' experience, but more as an illustrative tool that can present new environments and involve visitors (Allen, 2014; Dueholm & Smed, 2014).

Much of the criticism of technology-based interpretation comes from the heritage sector, which traditionally placed conservation and education at the heart of its operations (Ashworth & Howard, 1999; Bath, 2006; Copeland, 2006; Timothy & Boyd, 2003). Despite the changing trend in heritage attractions, that integrates 'hands-on' exhibits and technology-based interpretation into the product (Swarbrooke, 2002), there are lasting questions raised over its appropriateness. Uzzell (1989) criticised the major shift toward interactive media as compromising the power of the core message being conveyed. The author advocated restraint from VA managers in selecting overly technical media, suggesting that the significance of the message should take priority over its presentation. This perhaps does not accurately represent the positive role technology can play in bringing complex messages 'to life'. Wanhill (2009c) acknowledges this by supporting the potential power of technological presentation in creating 'time capsules of yesterday' in environments such as living history museums. However, the author does identify a blurring of boundaries between museums and theme parks, which reaffirms the need for sensitivity and curatorship when implementing technology in certain types of attraction. This echoes the work of Hughes (2001, p. 185) who heavily criticised the blurring of such boundaries in museums:

“... the entertainment-based branding strategies and the fetishization of interactive exhibits are homogenizing museums, not differentiating them. Could it be that these museums’ branding strategies will have to resort to scientific substance, rather than family fun?”

Uzzell and Ballantyne (1998) further suggest that technical approaches to interpretation have the potential to limit and even remove emotive responses from visitors to certain attractions, by sterilising the environment. However, these can be argued as dated criticisms. As technology has advanced, so has its level of interactivity and therefore it is arguably possible to generate an emotive response in a technology-mediated experience. An example can be seen at The U.S. Holocaust Memorial Museum in Washington. In their study of interpretation at the site, Lennon and Foley (1999) examined the interactive process of matching visitors with the identity of a Jewish citizen involved in the Holocaust. The visitor is presented with an identification card that stores the experience and fate of the individual, which is then accessed throughout the tour via interactive touch-points. By using interactive technology, visitors are therefore able to emotionally connect with an individual, understand their story and build an individualised experience. This powerful narrative is mediated by technology and demonstrates the ability of such platforms in generating emotional responses. This refers back to the use of a more entertainment-focussed platform for communicating a difficult message. As suggested by Schofield (2006) and Huey (2011), particularly in sites of a sensitive nature (such as crime museums), VA managers often rely on more accessible ‘entertaining’ presentation techniques to not only present harrowing messages but to also foster an almost cathartic experience for visitors.

The criticisms over the misuse of interactive technology in VA experiences have interesting symmetry to the emerging co-destruction concept in SD Logic. Plé and Chumpitaz Cáceres (2010) agree that the integration of various operant and operand resources can lead to co-creation (cf. 18), however they argue that an imbalance or unsuccessful integration of such resources could potentially co-destroy an experience and its subsequent value. This debate is extended by Smith (2013), who suggests that if an organisation fails to fulfil its resource offering or if the customer fails to co-create the expected value, then

this can lead to a co-destruction within the relationship. In reference to the VA environment, interactive technology can break-down, be misused or simply be ineffective in conveying the required message. From a practical perspective, Benckendorff et al. (2014) discuss the potential negative impacts on the visitor experience as a result of technology failure within a VA environment. The authors suggest that if certain technology represents part of the core product offering, its failure or removal can have substantial consequences to the on-site experience and to the satisfaction that is later attributed to the visit. As such, the danger of relying on a technology as a resource, is that poor management, misuse or inconsistent engagement between actors could potentially co-destroy or diminish the experience that is designed to enhance (Echeverri & Skålén, 2011; Prior & Marcos-Cuevas, 2016). However, this argument has yet to be considered within a VA environment, where technology is used in a number of unique ways. This study therefore considers the limitations of technology and sought to capture the visitor perspectives that did highlight negative issues surrounding technology in the context of experience co-creation.

Further threats have arisen in response to the level of interactive interpretation in VAs. Prentice and Cunnell (1997) found mixed visitor reactions to the various interactive technology points in their study of heritage attractions. The authors suggest that interpretation, as a practice, was viewed holistically by their respondents and as such continuity in presentation is strongly supported. The range of media platforms has also been identified as a crucial factor. With particular reference to visitors from diverse demographic groups, a number of studies question the rapid application of technology and how this may impact various visitor segments (Hughes, 2001; Prentice, Guerin, & McGugan, 1998; Van Winkle, 2014). This is particularly relevant in the VA industry, where accessibility for a wide range of visitors is essential for their successful operations. Recent studies by Biran, Poria and Oren (2011) and Poria et al. (2009) add to this discussion through their research into visitor preferences at heritage sites. The authors found that visitor's views varied on the 'amount' of interpretation in the attraction. Some were particularly engaged with multimedia platforms, whereas others preferred more traditional methods of

presentation. This reaffirms the need for VA managers to view their interpretative approach holistically, and in this research, perspectives from diverse visitor groups will be necessary to address these issues.

While the arguments surrounding authenticity and VA technology remain topical and require recognition, they do not represent a core focus within this study. Firstly, this position also reflects the diverse nature of the VA product, in which certain types of attraction do not claim to offer authentic experiences. This is particularly strongly felt in science centres, where the focus is less on immersing visitors in authentic experiences, and more on the reconstruction of exhibits and spaces to ignite interest, excitement and comprehension. Moreover, despite the questions over authenticity remaining steadfast in VA research, this study sought to question the role interactive technology plays in the co-creation of the onsite VA experience. The extent to which such experiences are perceived as authentic or indeed inauthentic, is beyond the realms of this thesis. What the previous discussion does afford, is an understanding of the diverse perceptions of technology use within VA environments and a need to be mindful that the interpretation of technology-mediated exhibitions can be very different dependent on personal preference, values and individual experiences. As an exploratory study, the contributions of this study may however provide the groundwork to debate the authenticity of technology-mediated co-creative experiences in future study.

3.7 Chapter Summary

This section provides an in-depth analysis of the key research streams surrounding technology use in VAs. Chief among these is the wider literature on interpretative practice. Although perhaps a smaller aspect in the VA field, interpretation research is of central importance to this study. The way in which a VA chooses to tell its story is not only an area of academic debate, but also a key management challenge. Of particular interest for this study, is the current perspective toward VA management challenges. As discussed throughout this chapter, VAs have a number of particularly unique challenges that manifest into their product offering, operational choices and the subsequent visitor experiences. However, these challenges have yet to be considered through

the lens of technology-mediated co-creation. The rapid development and innovations in VA technology coupled with the increasing focus on creating memorable, enriching visitor experiences suggest that further in-depth research is needed. In response, this study reframes VA management challenges within the context of technology-mediated experience co-creation to not only uncover the specific challenges and issues pertinent to the discussion, but also to link these with visitor perceptions.

The review of VA literature also highlights a paucity of research into visitor perceptions of interactive technology. While a number of authors have questioned the role of technology in visitor satisfaction and visitors' acceptance of technology, few have explored how visitors view technology within the context of experience co-creation. This study therefore captures the visitor perspective toward technology-mediated experiences in VAs and conceptualises this within co-creation theory, to provide an in-depth analysis of the various factors influencing technology-mediated experience co-creation.

3.8 Conclusions from the Literature Review

In drawing together the literature review, a number of significant conclusions have been identified. As demonstrated throughout Chapter 2, the co-creation approach in service marketing/management is currently receiving a wealth of academic research. Its theoretical development can be traced back through key developments in experience research and the blurred divisions between customers and service providers. While various iterations of the co-creation perspective exist, the experiential focus resonates strongly with the tourism industry. It is therefore interesting that SD Logic and the co-creation perspectives have rarely been applied to VAs. Similarly, the role of interactive technology as a resource for the co-creation of experience is an under-developed research area in tourism, despite the conceptual developments in other contexts.

In Chapter 3, the unique nature of the VA context was explored. Within their interpretation, VAs are increasingly employing technology to contribute to the product offering. Through the use of touch-screens, handheld media,

audio/visual displays and mixed-reality platforms, VAs can present their story to the visitor and provide touch-points that reinforce the key message of the site. However, the extent to which visitors can actively co-create an individualised experience with technology-mediated platforms is unknown, as are the unique management challenges/visitor perceptions that contribute to this process.

3.8.1 Gaps in Existing Research

Based on the review of relevant literature, a number of research gaps have been identified. These have provided a theoretical framework for this study and indicate where the strongest contributions to knowledge has been made.

Primarily, the application of co-creation theory to the context of VA management is an area lacking in academic research. As shown throughout the literature review, the majority of tourism experience research draws heavily upon seminal works from within the field. As a result, research in this area has often failed to explore neighbouring conceptual developments in much more established disciplines, such as service management. This study broadens knowledge and understanding in VA research by using the co-creation perspective as a lens to explore the process of technology-mediated experiences.

Furthermore, the extent to which interactive technology can act as a mediating platform in the co-creation of VA experiences is a new area of research. As a sector with unique communication and presentation strategies, VA are particularly well suited for research in this area. The notion of storytelling that is inherent in the VA product adds another dimension to the study, as not only do the interactive platforms offer individual touch-points for engagement, but also contribute to the larger narrative within the VA. Therefore, it is proposed that the message, the platform and its presentation can have significant impact on the co-creation of technology-mediated VA experiences.

Finally, the factors which influence the process of technology-mediated experience co-creation in attractions are largely unknown. The existing literature provides a partial view of what factors contribute to technology

mediated co-creative experiences. However, these have largely been grounded in either the customer OR the management perspective. This study acknowledges the collaborative relationship that exists between VAs and visitors by representing both 'voices' in the analysis and by considering the shared building blocks for technology-mediated experience co-creation. Furthermore, the study draws together the individual and environmental factors that contribute to technology-mediated experiences to extend knowledge in VA research.

3.8.2 Development of a Theoretical Framework

The literature strongly indicates the co-creation of experience as a process and a relationship between actors within a network, furthermore previous research provides various engagement platforms that can mediate this relationship. However, the power of these platforms is determined by interconnected factors - namely the visitor as an individual and the management of the VA who position the platforms. The interplay between these actors with interactive technology as a mediator has yet to be comprehensively researched. It is argued that a greater understanding of the contributing factors influencing the process, will illuminate the extent to which interactive technology can act as a co-creative platform within VA environments.

Figure 16 presents a theoretical framework that draws together key issues from both the co-creation and VA literature to provide the basis for exploratory research. Both the management and visitor dimensions are represented in this model to best reflect their interlinked relationship, however few studies have attempted to link these disparate actors within the context of technology-mediated experience co-creation. Similarly, a number of factors influencing the co-creation of experience have been synthesised. At the heart of the model, interactive technology sits as a key mediating platform that has the potential to mediate the experience and the whole process is framed within the VA research context. The literature has largely focussed on the individual roles of particular actors within co-creation (e.g. service providers or customers), this study aims to capture both the specific influencing factors from each actor, and

to subsequently identify the shared building blocks which unify both actors in the pursuit of experience co-creation.

The existing literature does acknowledge the uniqueness of the environment in experiences, however less is known about how the design and construction of the environment can influence the co-creation of technology-mediated experiences, making it particularly relevant to this study. These three streams of literature (co-created experience, interactive technology and VAs) combine as the theoretical basis for this thesis. A study focussing on these three aspects has yet to be attempted in any great depth and as such represents a valuable contribution to the development of tourism research.

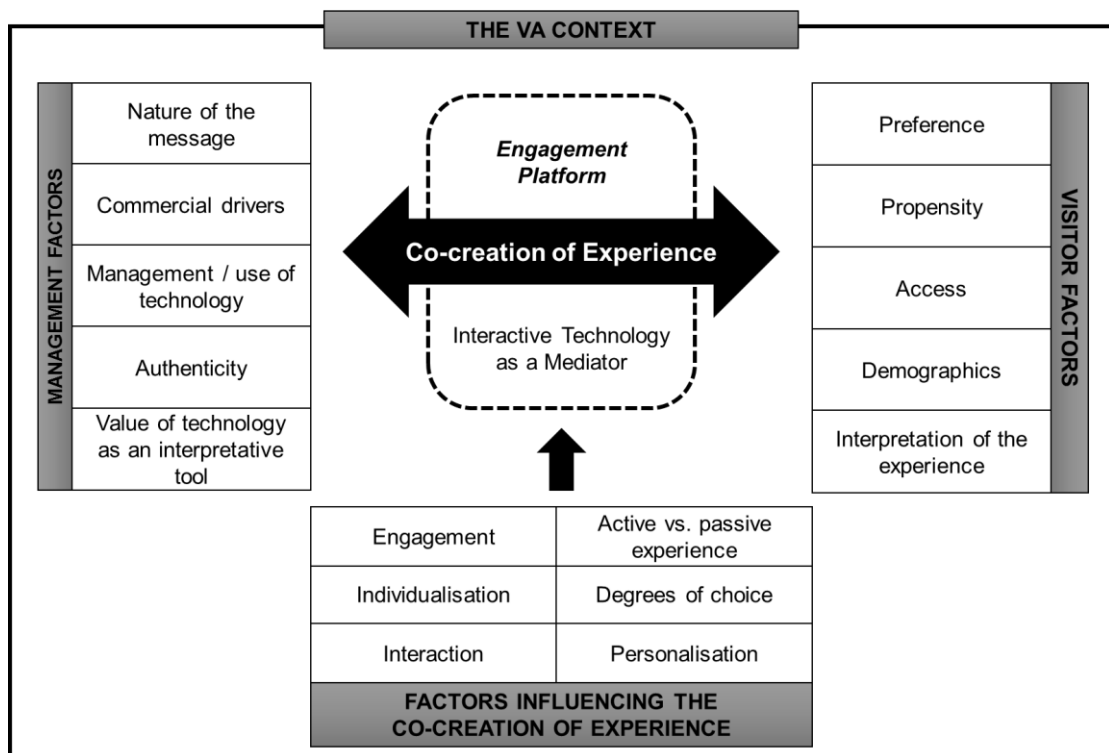


Figure 16. Theoretical framework derived from literature review
Source: Author

CHAPTER 4. METHODOLOGY

4.1 Introduction

Chapter 4 introduces the methodological assumptions and philosophical dimensions that have driven this research in achieving its aim and objectives. To reiterate, the aim of this thesis was:

‘To examine the role and application of interactive technology in the co-creation of visitor experiences in Scottish visitor attractions.’

In addition, the following research objectives act as a framework for the methodology:

- 1. To critically review the literature surrounding the co-creation of tourism experiences in the context of VAs*
- 2. To examine the role and application of interactive technology within different VA exhibition spaces*
- 3. To develop a conceptual model that explores the factors influencing the co-creation of technology-mediated experiences in VAs*
- 4. To contribute to the development of knowledge in VA research by debating how interactive technology can be further developed as a co-creative platform in Scottish VAs*

Where Chapters 2 and 3 provided a theoretical base for the study, Chapter 4 critically analyses the underpinning philosophical positioning of the researcher and questions how this has driven the study. Initially, the chapter presents the research questions that guided the study. Thereafter, the thesis is situated within the constructivist paradigm and identifies how this correlates with existing research in tourism experiences and co-creation. The chapter also examines the nature of qualitative inquiry in tourism research and provides an overview of the research process. Finally, the VA sites selected for the study are introduced before an evaluation of the methodology.

4.2 Research Questions

As a result of the gaps in existing literature, a number of specific research questions (RQs) were identified. These were in addition to the wider objectives of the study and acted as a framework for the data collection.

1. What is the management perspective of interactive technology use in the selected VAs?

Through the use of semi-structured interviews with attraction managers, this study questions the organisational perspective of interactive technology as a VA product offering. Key issues include: why technology has been selected as a means of interpretation; what sort of experience is the site hoping to offer; how does the technology affect the visitor experience; and how does it support the core messages of the site?

2. What is the visitor perspective of interactive technology use in the selected VAs?

To complement the managerial perspective, the study also draws on the visitor dimension. To reflect the nature of the co-creative relationship, it becomes necessary to involve both actors within the enquiry. This RQ captures visitor perceptions of technology use in the VA environment and in particular, the extent to which the experience feels co-created, personalised and individual.

3. What factors influence the co-creation of technology-mediated experiences in the selected VAs?

Through observation (and follow-up interviews) in the exhibition spaces, what key factors influence the co-creation of experience between visitors and VAs? This particularly questions the necessary building blocks for the co-creation of technology-mediated VA experiences.

4. How could the co-creative relationship be further encouraged and supported in the selected VAs?

Through exploring the relationship from both the management and visitor perspective, what lessons can be learnt for fostering the co-creative relationship in VAs. By drawing together data and interpretation from the previous three RQs, this questions how the relationship could be better supported through interactive technology.

The gaps and RQs identified as a result of the literature review provided clear directions for in-depth empirical research. To best explore the issues identified in this chapter, a qualitative approach was developed to capture the context and individual perspectives that contribute heavily to visitor experiences. The following chapter presents the methodological approach for the study and outlines: the fieldwork; analytical process; techniques; and limitations that emerged from this inquiry.

4.3 Research Philosophy

The philosophical assumptions that underpin research are a vital consideration as to how the researcher sees the world and how they act within it (Denzin & Lincoln, 2011a). At the heart of these assumptions is a set of beliefs that direct how we view knowledge, truth and values (Guba, 1990). These philosophical assumptions provide a framework which dictates our research approach, methods, analysis and conclusions. As suggested by Bateson (1972) the framework can be seen as a 'net' which holds our individual assumptions, subsequently shaping our research journey. Guba and Lincoln (1998) identify three key dimensions which can aid researchers in positioning themselves within a philosophical paradigm - ontology, epistemology and methodology.

Ontological assumptions relate to the nature of reality and explore the assumptions that researchers operate with, in the pursuit of new knowledge (Creswell, 2014). Epistemological assumptions question how the researcher views knowledge and what can be described as 'known'. Scholars would generally either view knowledge as objective (there is an external truth that can be found) or subjective (knowledge is created and constructed by individuals). The question of methodology refers to the tools and techniques that the researcher will use to investigate the phenomenon. These may be largely quantitative for testing hypotheses or qualitative for exploring the existence or processes of a phenomena. Finally, axiology refers to the role and influence of values in the research process. This is particularly relevant in constructivist research which is inherently 'value-laden' (Bryman, 2001; Riley & Love, 2000).

A critical debate in the methodological literature would suggest no one-uniform approach to research philosophy. Morgan and Smircich (1980) present a continuum ranging from extreme objectivism to extreme subjectivism. The authors suggest that a more fruitful debate involves positioning oneself as a researcher on the continuum based on various assumptions but recognising that there are routinely overlaps between the theories presents an overview of this continuum (Table 8).




	<i>Subjectivist Approaches to Social Science</i>						<i>Objectivist Approaches to Social Science</i>
Core Ontological Assumptions	Reality as a projection of human imagination	Reality as a social construction	Reality as a realm of symbolic discourse	Reality as a contextual field of information	Reality as a concrete process	Reality as a concrete structure	
Assumptions About Human Nature	Man as a pure spirit, consciousness, being	Man as a social constructor, the symbolic creator	Man as an actor; the symbol user	Man as an information processor	Man as an adaptor	Man as a responder	
	<i>Interpretivist</i>						<i>Positivist</i>
Basic Epistemological Stance	To obtain phenomenological insight	To understand how social reality is created	To understand patterns of symbolic discourse	To map contexts	To study systems, processes, change	To construct a positivist science	
	<i>Qualitative</i>						<i>Quantitative</i>
Research Methods	Exploration of pure subjectivity	Hermeneutics	Symbolic analysis	Contextual analysis	Historical analysis	Lab experiments, surveys	

Table 8. A Network of Basic Assumptions in the Subjective-Objective Debate in Social Science
Adapted from: Morgan & Smircich (1980)

4.4 Ontology and Epistemology

4.4.1 Philosophical perspectives in tourism research

Traditionally, tourism research has been criticised for its reliance on positivistic, quantitative methodologies (Pritchard & Morgan, 2007) however, the inherent individuality that is central to tourism experiences is much better aligned with subjective and interpretive research philosophies. As shown in Figure 17, four guiding paradigms are prominent in tourism research: positivism; post-positivism; critical theory; and constructivism. To best situate this research in the constructivist paradigm, the other three approaches have been briefly introduced to draw parallels with the constructivist underpinning that supports this thesis.

Alternative paradigms	Ontology	Epistemology	Methodology
Positivism	Realism: truth exists and can be identified or discovered	Objectivism: unbiased observer	Hypothesis testing, falsification, quantification, controlled conditions
Post-positivism	Critical realism: truth exists but can only be partially comprehended	Objectivism is ideal but can only be approximated	Modified quantification, field studies, some qualitative methods
Critical theory	Value-laden realism: truth shaped by social processes (e.g. feminist, ethnic, neo-Marxist)	Subjectivism: values influence inquiry	Interactive process that seeks to challenge commonly-held notions
Constructivism	Relativism: knowledge is socially constructed, local, and specific	Subjectivism: knowledge created and coproduced by researcher and subject	Process of reconstructing multiple realities through informed consensus

Figure 17. Paradigms in Tourism Research
Source: Riley & Love (2000, p. 172)

The positivist paradigm is perhaps most prominent in the natural sciences, where deduction and the pursuit of generalisations are more common (Deetz, 1996). Those identifying themselves as positivists believe in an objective epistemology or singular reality. Truth and reason can be found in this 'one reality' that we all share and a positivist would design research projects to observe this (Aliyu, Bello, Kasim, & Martin, 2014). The paradigm places a firm division between the researcher and that which is being observed. Reasoning for this is to assure impartiality and to remove questions of bias from the development of factual findings. Empirical methods (such as closed surveys and experiments) are most appropriate for the positivist researcher, often to quantify or verify theoretical claims through statistical methodologies (Blatter & Haverland, 2012; Lee, 1991).

The post-positivist would move away from the 'pure realist' perspective to a state of critical realism. Members of this paradigm still uphold the existence of a single reality, however they would argue that this reality cannot be fully comprehended (Lincoln, Lynham, & Guba, 2011). Humans are thus unable to define the nature of this single reality. Epistemologically, the post-positivist would argue that the researcher cannot ever be fully detached from the process. And rather than searching for complete neutrality (as in the positivist paradigm) it is more important to identify the researchers own predispositions and demonstrate criticality of one's own findings. Methodologically, the post-positivist remains experimental but is more open to qualitative and naturalistic methods to suit certain lines of inquiry. The methods used by post-positivists aim to probe and investigate reality through the use of approximations (Guba & Lincoln, 2005).

Critical theory represents the 'middle ground' of the paradigmatic continuum and is often employed for research into social change, transformation or reform. Guba (1990: p. 23) redefined critical theory as an "*ideologically orientated inquiry*", which provides insight into its underpinning philosophies. Critical theorists often cite political or social movements as cornerstones of their research. Notable examples include: Marxism; Neo-Marxism; and Feminism and increasingly: Critical Race Theory; Queer Theory; and Asian Epistemologies (Denzin & Lincoln, 2011b). Critical theory straddles two

seemingly incompatible viewpoints. The paradigm maintains a realist ontology (single observable reality) but also a subjective epistemology – as researchers are seen as value laden and mediate the inquiry.

In contrast to the paradigms above, the constructivist paradigm is seen as the antithesis to positivistic approaches. The constructivist researcher aligns with a relativist ontology that assumes the existence of multiple realities that are inherently subjective (Denzin & Lincoln, 2003). The constructivist notion of socially constructed knowledge emerges from its strongly relativistic ontology. As argued by Guba and Lincoln (1998), the relativist ontology contends that reality is understandable through the experiential, social and personal lenses of individuals. Epistemologically, knowledge is seen as a human construction that is socially, culturally and independently influenced. Therefore, knowledge cannot be proved but can be recognised as ever changing, complex and dynamic. As constructivism represents the underpinning philosophy of this study, it is explored in detail in the following sections.

4.4.2 The constructivist paradigm as a philosophical position

As identified above, this study adopts an interpretative approach to explore the concept of technology-mediated experience co-creation in the VA context. The nature of tourism experiences, co-creation and interpretation as being inherently individual and contextually-shaped, requires an underpinning philosophy that acknowledges individual participants and their lived experiences. This study provides a deeper understanding of technology-mediated experience co-creation from the in-depth perspective of its participants. As such, a purely qualitative and inductive approach framed by the constructivist paradigm was used. Figure 18 presents the philosophical positioning of this study with regards to its guiding paradigm, ontology, epistemology and methodology. Thereafter the discussion evaluates the suitability of this positioning in addressing the aim and objectives of the study.

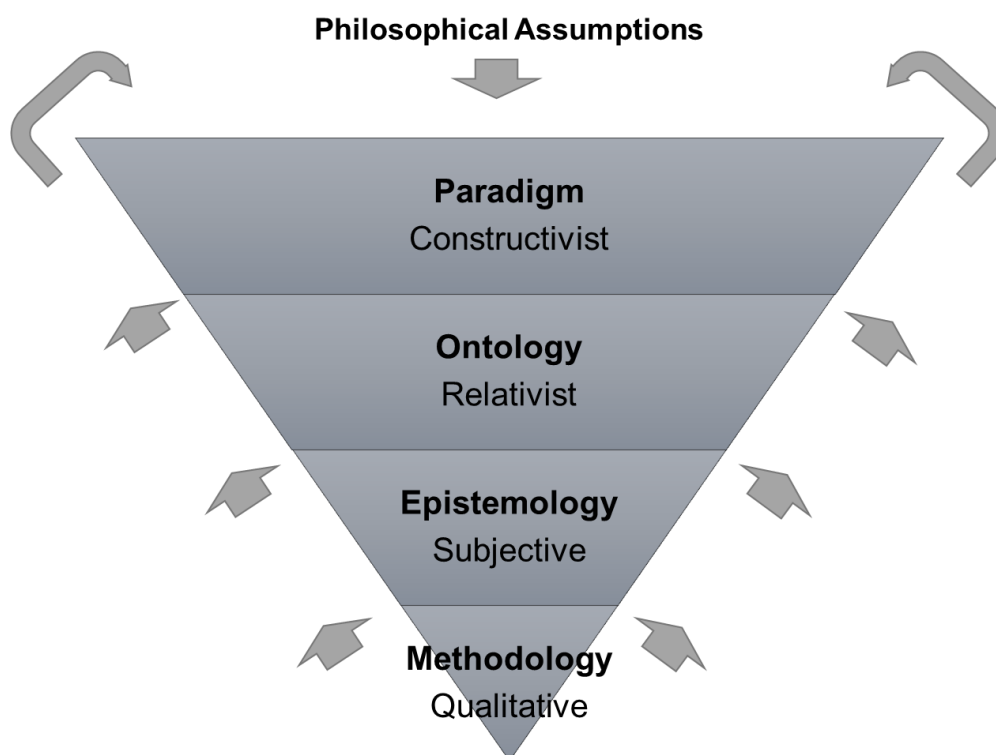


Figure 18. Philosophical positioning of this study
Based on: Pernecky (2007)

This study can be firmly positioned within the constructivist paradigm that acknowledges the existence of subjective external realities and stresses the value in interpreting such realities (Goulding, 1999; Ponsignon, Klaus, & Maull, 2015; Tronvoll, Brown, Gremler, & Edvardsson, 2011; Walle, 1997). This interpretative worldview is context-rich and individually constructed (Jamal & Hollinshead, 2001; Schmidt, 2001), which mirrors many of the theoretical assumptions of visitor experiences as individually constructed within a specific tourism environment (O'Dell, 2005; Brent Ritchie & Hudson, 2009; Ritchie et al., 2011; Tussyadiah, 2014). Furthermore, the notion of research being co-constructed, as is believed in the constructivist paradigm, resonates with many of the central tenets of co-creation theory which support this study.

A subjective epistemology overarches the research. As suggested by Morgan and Smircich (1980, p. 493), researchers from a subjectivist standpoint “...emphasise the importance of understanding the processes through which human beings concretize their relationship to the world”. Furthermore, the subjective epistemology stresses the value of human experiences and the co-

construction of knowledge (Fuchs, 1999; Keith Hollinshead, 2006; Pernecky & Jamal, 2010; Tronvoll et al., 2011). The study aligns closely with this perspective by questioning the process by which visitors co-create their experience in a technology-mediated environment.

As discussed extensively by Guba and Lincoln (1998), the constructivist paradigm advocates the existence of multiple realities that are both socially constructed and sustained. As a result, knowledge (or what we 'believe' we know) is developed through experience and we cannot therefore separate ourselves from what we know. Schwandt (1998, p. 221) expands on this by drawing attention to the goal of constructivist approaches in "*understanding the complex world of lived experiences from the point of view of those who live in it*". This philosophical approach supports a hermeneutical methodology, which reflects the individual nature of social constructions and is explored through interactions between the researcher and the participants (Pernecky & Jamal, 2010; Pernecky, 2012). This is echoed in the work of Goodson and Phillimore (2004) who suggest that the researcher and the subject should act as 'partners in the production of knowledge'. It is crucial in interpretivist studies to highlight researcher reflexivity and 'multivocality' (Riley & Love, 2000). Only by acknowledging the voice of the researcher as a critical agent in the process, is it possible to understand the interpretations that are made on the subject being explored (Flick, 2014; Patton, 2002). Despite these arguments, constructivism has often been overlooked in emerging fields such as tourism.

Tourism research has faced criticism for its failings in methodological and theoretical development when compared with other fields (Cohen, 2013; Riley & Love, 2000; Tribe, 2006). This is particularly true with paradigmatic discussions that have largely followed the positivist research philosophy rather than exploring emerging interpretivist traditions in the wider social sciences. Hollinshead (2004, p. 66) extends this argument by suggesting:

“...although tourism is an immense international business and transformative inter-societal cultural phenomenon, the field of tourism studies does not appear to be advanced in the use of critical qualitative research approaches.”

What has recently emerged in tourism research is a greater propensity to explore interpretative philosophies, although authors such as Ren, Pritchard and Morgan (2010) and Tribe (1997, 2006) remind us to expand our philosophical and epistemological boundaries. Hollinshead (2006) argues that an ‘interpretivist turn’ in tourism research has emerged in the past decade. Similarly, from the service management field, there is growing support for exploring emergent approaches in service research. As discussed by Tronvoll et al. (2011, p. 566):

“Such research is driven by narratives, and depending on the story, is constantly open to change and new meanings. The meanings can be translated and refined through interactions during the research process, and a sense of meaning becomes the central concern.”

This is correlated by other authors, that suggest the growth in qualitative business research has been in response to changing landscapes and reconfigured roles within the business relationship (Guercini, 2014; Riley & Love, 2000). Similarly, emerging approaches in tourism advocate for the methodological approaches that view tourism activity as a network of actions, practices and subjective roles such as in actor-network theory (Beard, Scarles, & Tribe, 2016; Ren et al., 2010) or consumer culture theory in marketing (Askegaard & Linnet, 2011). However, there is a need for further interpretative work in tourism research, particularly in studies based in visitor experience.

An important distinction should be made between constructivism and constructionism; which despite being frequently used interchangeably (Crotty, 1998), have quite different epistemological assumptions. Whilst both emerge from the interpretive approach, constructivists argue knowledge is the property of individual minds, whereas constructionists (also referred to as social constructivists) view knowledge as a result of social exchange between individuals and collective meaning-making. As suggested by Pernecky (2012, p. 1132) in tourism research the distinction is fraught with terminological

inconsistencies. However, the author provides a broad separation useful in this context:

[in reference to terminology] “...it may prove useful to employ the term *constructivism* to examine the meaning-making activity of individuals, and reserve the term *constructionism* for the study of collective generation and transmission of meaning in tourism.”

The potential methodologies are fairly similar between both approaches, however as suggested by Maréchal (2010), the constructionist may specifically use techniques such as conversation/discourse analysis or group-based methods to uncover meaning-making as a result of social interaction, communication and shared narratives. Constructionism has been used in co-creation research specifically exploring the customer-to-customer (C2C) dimension (such as: Rihova et al., 2018, 2013), however as this study is focussed on the individual perspective as opposed to collective meaning, the constructivist paradigm was judged as the most appropriate framework.

4.4.3 Critique of the constructivist paradigm

The constructivist paradigm has faced fierce criticism from realist philosophies, such as those with positivist and post-positivist underpinnings (Holstein & Gubrium, 2008). As the constructivist researcher challenges the premise of objective reality (Kulka, 2000), the philosophy has been criticised as a radical worldview from those in realist perspectives (Burr, 2003). The work of Boghossian (2010) crystallised the arguments against constructivism by rejecting the concept of subjectivist in socially-constructed realities. The author argues that constructivism, as a philosophy, lacked in validity due it resistance toward ‘factual truths’.

However, scholars in the constructivist paradigm refute such criticisms by arguing that they do not deny the existence of ‘reality’ or real things, but simply suggest that there are alternative ways in which to view and understand the world (Gergen, 2009). This is further explored by Weinberg (2008, p. 35) who stresses the notion of plurality rather than rejection of reality in constructivist research:

“To my mind, constructionist research is not about evading the presumption to have validly described the world. It cannot be. Instead, constructionism is about the recognition that things could be otherwise and that we might make them so. It is about recognising that that our theories are answerable to our common lives before, during, and after their answerability to our common world.”

Arguably, the terminological inconsistencies (namely constructivism/ constructionism) do little to advance the cause. As suggested by Pernecky (2012), a clearer division and adherence to terms would support those in the constructivist paradigm better defend their position to those in realist ontologies. Furthermore, there is a need for consistency in the approach and for researchers to acknowledge and defend the epistemological and ontological assumptions that surround the constructivist paradigm (Pernecky, 2007; Schwandt, 2000).

The applicability of constructivist philosophy to tourism experience research provided this study with the necessary reflexivity, subjective voice, multivocality and a dynamic understanding of human experiences (Botterill & Platenkamp, 2012) which is crucial for the exploration of the technology-mediated co-creative experience. As such, the constructivist paradigm underpinned the entire research process of this thesis. The approach to the literature review, identification of the qualitative research approach, the research methods and the analytical techniques were driven by the central tenets of constructivist philosophy. Furthermore, the role of the researcher throughout the process was solidified as a ‘subjective interpreter’ who cannot be detached from the topic under inquiry.

4.5 Qualitative Inquiry

As this study is explorative in nature and seeks to observe the process by which co-creation occurs, a quantitative methodology would not be appropriate. Future research could potentially incorporate a quantitative angle by perhaps questioning the effects of experience co-creation on satisfaction, perceived value or purchase/re-purchase behaviour. While these are beyond the remit of this PhD thesis, there is definite potential to explore mixed methodologies in future studies, using this research as a conceptual platform.

In contrast, qualitative research stems from the interpretative or constructivist paradigms and is particularly valuable for exploring phenomena in-depth. The focus is less concerned with generating representative findings, but illuminating individual perspectives, views, thoughts and representations through the use of rich descriptions (Flick, 2014; Marvasti, 2004). As suggested by Phillimore and Goodson (2004, p. 4):

“With qualitative approaches, the emphasis is placed upon studying things in their natural settings, interpreting phenomena in terms of the meanings people bring to them, humanising problems and gaining an ‘emic’, or insider’s perspective.”

It is clear from the quote above that qualitative approaches lend themselves particularly well to the constructivist paradigm. The importance of the natural settings is highlighted, which corresponds to the importance of time, place and context in constructivism. Similarly, the interpretation of meanings attributed to phenomena by individuals resonates throughout the constructivist literature. The need to reflect the ‘multivocality’ of individual perceptions can be achieved through content-rich qualitative methods and techniques (Berg, 2004; Gergen & Gergen, 2007; Hennik, Hutter, & Bailey, 2011). Qualitative research is particularly appropriate when studying social phenomena that induces theory through the collection of rich data (Denzin & Lincoln, 2003; Rubin & Rubin, 2005). This is in contrast to quantitative methods as a means to deduce (prove or disprove) a particular theoretical position (Botterill & Platenkamp, 2012). While this approach has its merits, it often fails to capture the plurality of views and perspectives that qualitative research aims to uncover.

Walle (1997) provides an interesting distinction between quantitative and qualitative methods almost as the difference between science and art. Where quantitative research requires formality and rigour similar to scientific enquiry, qualitative studies are more akin to artistic discovery, they are intuitive and organic. As this study aims to understand both the visitor and management viewpoint in the co-creative relationship, it is necessary to draw up multiple perspectives from a variety of actors. This approach is becoming increasingly popular in management related studies. As suggested by Guercini (2014), the changing landscape of contemporary business coupled with a shift in social

roles (namely 'consumer' and 'producer') has led to a greater need for qualitative inquiry to further understand the nature of these roles. Similarly, Fisher (2000) explored the role of qualitative research in museums, galleries and cultural settings. The author sees qualitative inquiry as a useful forum for sharing stakeholder views and encouraging feedback. Fisher's (2000) perspective resonates with the aim and objectives of this study by bringing various perspectives together to examine the factors mediating visitor experiences.

One further division that arises from various research philosophies is whether the study is orientated toward a deductive or inductive approach. Deduction is predominantly positivist and quantitatively based (Finn, Elliott-White, & Walton, 2000; Saunders, Lewis, & Thornhill, 2012). The process involves testing existing theory through various strands of data collection and analysis. The premise is often to confirm or reject a series of hypotheses associated with the theory (Finn et al., 2000; Gilbert, 2001). In social sciences such as tourism, deductive approaches are less prominent as often the objective in such research is not to prove or disprove particular theories, but to explore them in new contexts (Botterill & Platenkamp, 2012). The inductive approach shifts from testing theory to building it. The foundation here is largely qualitative and involves exploring aspects of a phenomenon to extend theory and derive propositions from collected data (Patton, 2002; Walliman, 2006). Xiao and Smith (2006, p. 741) reinforce this by discussing the value of qualitative approaches for an explorative study:

"The opportunity to explore issues in depth and in their contexts means that theory development can occur through the systematic piecing together of detailed evidence to generate (or perhaps replicate) theories of more general interest."

However, induction and deduction are not necessarily polar opposites. Likewise, researchers from various philosophies are not always restricted to an either/or position. Eisenhardt and Graebner (2007) present an interesting convergence of the inductive-deductive approaches. The authors argue that although separate in their objectives, the two approaches mirror one another and form a symbiotic link. Inductive studies build the theory from the data

whereas deductive studies complete the cycle by employing data to test the theory. While an interesting prospect, there could be an argument suggesting that theory generated from an inductive study may not be suitable for 'testing' (i.e. proving or refuting). Likewise, data from a deductive study may not provide suitable avenues for future theory building. However, the premise that the division between inductive and deductive approaches should be more flexible can be seen in the research methods literature.

A notable example involves the use of conceptual models or frameworks in inductive research. Baxter and Jack (2008) argue that novice researchers can become too fixated on initial conceptual frameworks drawn from the literature and there is thus a danger of shifting into a more deductive 'theory testing' mind-set. Other authors refute this, by suggesting that rarely would research be purely inductive or deductive. For example, Perry (1998, p. 789) argued that often the most well-rounded and practical research blends both inductive and deductive approaches, and even question the sense of taking an extreme one-sided view:

"Pure induction might prevent the researcher from benefiting from existing theory, just as pure deduction might prevent the development of new and useful theory."

Similarly, Malterud (2001) suggests that even in largely inductive research, conceptual models/frameworks usually emerge from some form of prior theory as a starting point. Furthermore, the author argues that the failure of researchers to acknowledge this can pose significant threats to the objectivity of the study. To counteract the risk of simply testing the conceptual model presented in Chapter 3, critical reflection becomes an increasingly important activity in this research. Reflective logs and diaries contribute not only as a record for the data analysis process, but also to document how the conceptual model has developed from its theoretical origins to its final presentation. By reflecting on the decisions that influenced the enhancement of the model it is possible to evaluate how much of the model has emerged from the collected data.

4.5.1 Common methodological approaches

While every research approach is tailored to the needs of a particular study, there are observable trends and methodological conventions found in academic fields. It is therefore important to visualise the existing approaches currently being used in research projects informing and surrounding this study. In line with the theoretical boundaries of this study, two main areas of study were reviewed, experience co-creation and VA interpretation. The purpose of such a summary was to not only gain an understanding of prominent research methodologies/methods in the respective fields, but also to identify appropriate methods that met the needs of this thesis. The following sub-sections identify key methodological trends in each field with associated tables to summarise common approaches.

- *Experience Co-creation*

As shown in Table 9, work in this area can often be seen as a theoretical extension to the co-created value literature that dominated the service marketing/management field. Interestingly, the majority of empirical studies in experience co-creation clearly adhere to either the management or to the customer perspective. Rarely have both actors been explored in a holistic study and this can be seen through a clear division in methods used. While various qualitative approaches are favoured to capture in-depth consumer perspectives, management research is largely resigned to case study methodologies. This division provided the opportunity to explore both perspectives within a rigorous and consistent qualitative methodology.

Similarly, much of the prominent research in SD Logic and service science adheres to monologic paradigms (Tronvoll et al., 2011). In attempts to further the development of process-based perspectives in service research, this monological paradigm (closely linked to positivism but with greater time spent in the field) is grounded in a realist ontology and is framed by an objective epistemology. Jaakkola, Helkkula and Aarikka-Stenroos (2015b) agrees with this by suggesting that much of the existing service management research remains dominated by quantitative methodologies that aim to deduce processes and practices. As such, flexible iterative methodologies are required

to acknowledge the different experiential aspects of the service relationship. In line with this, co-creation research (as a tenet of SD Logic) is increasingly positioned in more subjective epistemologies. Tronvoll et al. (2011, p. 574) argued that:

“Researchers employing the dialogic paradigm attempt to capture the diversity and complexity of the phenomena within the study during a certain time frame. The study is conducted in concert with the research object, and reality is a projection of human integration.”

Similarly, Edvardsson et al. (2011) argued that value co-creation is shaped by complex social forces and the dynamic nature of actor relationships within the service setting requires a philosophical view that acknowledges social construction. This argument is compounded in the research based in experiential co-creation. As identified in Table 9, the research focussed on co-creative experiences is driven by a range of methodological approaches. Where quantitative approaches remain prominent in satisfaction-based studies, there is a growing recognition for qualitative methodologies to underpin experiential studies. This research aligns with views of Edvardsson et al. (2011) by exploring the dynamic relationship between the VA management and the visitor with interactive technology as a mediating force.

- *Visitor Attraction Interpretation and Technology Adoption*

The research approaches employed in previous studies into VA interpretation and technology adoption are quite different to those identified in co-creation. As identified in Table 10, the individual case study methodology is particularly popular in this field. This is perhaps unsurprising due to the vast differences between VA products and management challenges across sites contextual nature of individual sites. However, as technology has become diffused across VA categories, it is necessary to gain a deeper understanding of how technology influences the co-creative experience in a range of contexts.

Experience Co-creation			
Author(s), Year	Methodology / Method	Focus of Studies	Overview of Key Approaches
Baron & Harris, 2008; Carù & Cova, 2015; Eide, Fuglsang, & Sundbo, 2017; Ponsignon, Klaus, & Maull, 2015	Case study approaches / multiple case vignette	Exploration of consumption/ management practices leading to the co-creation of service experiences.	Quantitative methods largely employed for satisfaction studies, scale development or process mapping. Qualitative and multi-method approaches are valued for consumer-orientated research in experiential co-creation. Increasing prominence of narrative, experience-based methodologies to capture customer views in addition to participatory methods to refocus participants as equal co-constructors of research.
Blazquez-Resino, Molina, & Esteban-Talaya, 2015; Buonincontri, Morvillo, Okumus, & van Niekerk, 2017; Calver & Page, 2013; Gentile, Spiller, & Noci, 2007; Grisseman & Stokburger-Sauer, 2012; Prebensen et al. 2013; Prebensen & Xie, 2017	Quantitative methods e.g. structured (closed) interviews or surveys	Satisfaction studies and process mapping in experiential environments.	
Campos, Mendes, Valle, & Scott, 2017; Dahl & Moreau, 2007; Dong & Siu, 2013; Lugosi, 2014; Verleye, 2015; Zátori, 2016	Multi/mixed methods approaches E.g. combination of survey / experimentation / observation / interview content analysis / scale development	Measurements and determinants of co-creative experience.	
Rihova, 2013; Tynan, McKechnie, & Hartley, 2014; Thyne & Hede, 2016	Qualitative approaches: In-depth interviews, ethnographic style methodologies, phenomenology, grounded theory	In-depth and immersive studies of consumer roles, practices and social norms. Nature of co-creation in defined contexts.	
Azevedo, 2010; Helkkula, Kelleher, & Pihlström, 2012; Prebensen & Foss, 2011; Van Winkle & Bueddefeld, 2016	Narrative or participatory approaches (e.g. autoethnography, diary methods)	Emic consumer perspectives captured through participatory methods and narrative analysis. Research involving stream of consciousness, flow of events or consumer thought process.	
Brodie, Ilic, Juric, & Hollebeek, 2013; Healy & McDonagh, 2013; Liang, 2017; Minkiewicz, Evans, & Bridson, 2014	Other (critical incident technique, netnography, experimentation)		

Table 9. Overview of Methodological Approaches: Experience Co-creation
Source: Author

Visitor Attraction Interpretation & Technology Adoption			
Author(s), Year	Methodology / Method	Focus of Studies	Overview of Key Approaches
Chen et al., 2006; Mitsche, Vogt, Knox, Cooper, Lombardi, & Ciaffi, 2013; Robles-Ortega et al., 2011; tom Dieck & Jung, 2017; Weiler & Walker, 2014; Wight & Lennon, 2007; Yocco et al., 2011	Case study approaches / Multiple case vignette	Application and adoption of interactive technologies in defined cases. Often individual case studies of VAs.	Case study a prominent approach – particularly to explore the contextual factors of individual sites.
Benckendorff et al., 2005; Bryce et al., 2015; Chung et al., 2015; Hume, 2015; Jung et al., 2015; Kang & Gretzel, 2012; Pallud, 2015; Rey & Casado-Neira, 2013; Sheng & Chen, 2012; Taheri et al., 2014; Van Winkle, 2014; Var et al., 2001; Weiler & Smith, 2009	Quantitative methods / Structured (closed) interviews or surveys	Satisfaction-based research, engagement scales and quantifying the visitor experience through variables.	Growth in quantitative approaches particularly for scale development and comparative work.
de Rojas & Camarero, 2008; Hampp & Schwan, 2014; Poria et al., 2009; Skydsgaard et al., 2016; Walker & Moscardo, 2014	Mixed methods approach / Combination of survey /experimentation observation / interview content analysis / scale development	Visitor preferences and satisfaction in VA experiences. Often linked to psychological models for testing.	Consistent use of qualitative approaches when the research is experientially driven
Ballantyne et al., 2011; Carrozzino & Bergamasco, 2010; Chronis, 2005a, 2012; Daengbuppha, Hemmington, & Wilkes, 2006; Falk & Storksdieck, 2009; Latham, 2015; McIntyre, 2009; Pallud & Monod, 2010; Reisinger & Steiner, 2006; Rennie et al., 2010; Xu et al., 2013	Qualitative approaches / In-depth interviews, ethnographic style methodologies, phenomenology, grounded theory	In-depth understanding of visitor experiences, behaviours and perspectives towards VA interpretation and the use of technology in a VA context.	Narrative approaches less prominent in the field.
Kitalong et al., 2009; Sheng & Ming-Chia, 2013	Narrative approaches / Content analysis, autoethnography, diary methods	In-depth understanding of the visitor journey and their engagement at various stages.	Growing interest in alternative approaches (such as visual and experimentation) more prominent with technology-orientated research emerging from the computing/HCI field.
He et al., 2018; Hughes et al., 2013; Kirchberg & Tröndle, 2015; Mencarelli & Pulh, 2012; Stuedahl & Smørdal, 2011; Sylaiou et al., 2010; Wishart & Triggs, 2010	Other / Critical incident technique, netnography, experimentation, delphi, visual	Experimentation and evaluation of new technologies in heritage and cultural sectors.	

Table 10. Overview of Methodological Approaches: Visitor Attraction Interpretation & Technology Adoption
Source: Author

Particularly interesting is the balance between qualitative and quantitative research approaches in studies surrounding VA interpretation and technology adoption. While quantitative approaches are popular for assessing visitor preferences (Sheng & Chen, 2012), measuring engagement (Taheri et al., 2014), and evaluating the outcomes of interpretation on visitors (Weiler & Smith, 2009); qualitative approaches are commonly used to question the nature and construction of the visitor experience.

Latham (2015) used an interpretative research approach in her study into authenticity in museum experiences. Albeit from a phenomenological standpoint, the author argues that there is a need for greater understanding of lived experiences in cultural and heritage settings. Similarly, Daengbuppha et al. (2006: p368) provided a firm justification for inductive approaches to understanding visitor experiences in VAs:

“It is argued that research into the visitor’s experience whilst they are at heritage attractions will provide a deeper understanding of the interaction between visitors and attractions, the visitor’s shaping of the experience, the meaning of the experience for the visitor, and their interpretation of the heritage site and objects. It is this subjective experience that is real to them as visitors...”

While the study above involved grounded theory as a specific approach, the rationale for a strongly interpretivist research methodology correlates with this PhD thesis. As this study aims to uncover the individual perceptions towards technology-mediated experience co-creation in the VA context, a strongly qualitative research approach was needed capture the subjective interpretations of the visitor experience in-situ and the VA management reflections on their role and influence within the experience.

4.6 Research Process of the Qualitative Study

As shown in Figure 19, the qualitative research approach employed within this study is situated within a larger process. As indicated, there were three main stages to this study - Literature and Methodology, Data Collection, and Data Analysis. Each of the three stages were interlinked with the underlying qualitative approach.

- *Stage 1. Literature and Methodology*

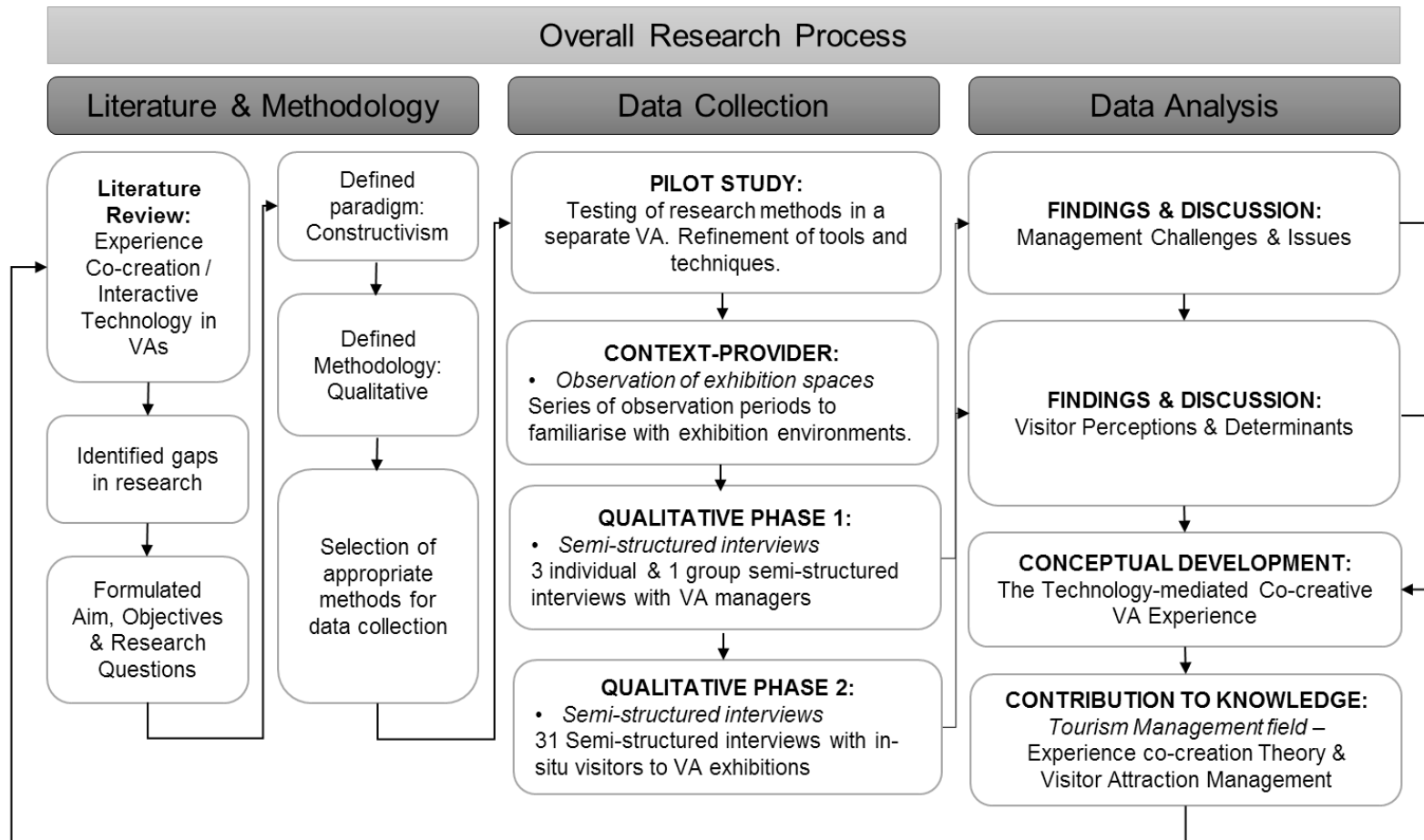
A critical review of the existing literature in co-creation and interactive technology use in VAs led to the development of a theoretical model of issues, challenges and factors. These in-turn led to the generation of four research questions which acted as a structure for the study. The nature of these questions demanded a research methodology that celebrated the voice of the participant as an individual in a contextual setting. Underpinned by the constructivist paradigm, a qualitative research approach emerged as the most suitable for the study and the position of the researcher.

- *Stage 2. Data Collection*

The data collection methods were selected to both best address the research questions of the study and due to their suitability for qualitative inquiry. As will be discussed in Section 5.2, this study used semi-structured interviewing to provide an in-depth perspective of the factors influencing technology-mediated experience co-creation in four Scottish VA exhibitions.

- *Stage 3. Data Analysis*

The data analysis stage was also driven by the qualitative research approach. As discussed in Section 5.4, the template analysis technique was used to analyse the textual data collected throughout the interviews and observation notes. The analysis generated a series of themes and sub-themes which structured the findings and analysis chapters (6 and 7) and led to the development of a conceptual model in Chapter 8. The output of this analysis led to several contributions to knowledge and practice which are synthesised in Chapter 9.



Contributions of study extending theory in academic literature

Figure 19. Overall Research Process of the Study
Source: Author

4.6.1 Sampling

The sites selected for this study can be described as based on an 'information-orientated selection'. As highlighted by Flyvberg (2011, p.307):

"To maximise the utility of information from small samples and single cases. Cases are selected on the basis of expectations about their information content."

As with the majority of qualitative research, the purpose is not necessarily to find the breadth of a phenomenon but to explore its presence in depth and within specified contexts (Dul & Hak, 2008). As a result, this study does not aim to be representative of a population of VAs or individuals. The sites were not selected to compare the phenomenon but to explore the process of experience co-creation within various VA contexts. As suggested by Vaughan (1992) qualitative settings can be selected to present different examples of the research topic for the purpose of extending, refining or investigating theory. This has been described as sampling for the benefit of 'theoretical elaboration' and aligns closely with the broader commentary surrounding inductive research approaches and the constructivist paradigm. In practice, this non-probability sample targeted sites not for their comparative value, but for the presence of different approaches to technology use within the VA product.

The nature of the VAs selected for this study, coupled with the varying degrees of technology use at the sites provided a sample that explored the co-creation phenomenon in different defined contexts. This did undoubtedly limit the generalisability afforded by the study, however as argued by Platt (2007, p. 114) the sampling decisions taken in qualitative research must be flexible and appropriate to the study rather than driven by the pursuit of representativeness:

“Central themes running through the discussion can be identified as the choices of depth and qualitative richness of data over breadth and statistical representativeness...It makes sense to choose horses for courses, and there is more than one reasonable goal for a research project”.

In agreement, Patton (1990, p. 185) succinctly offers his view on the issue of sample size in qualitative research:

“The validity, meaningfulness and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capabilities of the researcher than with the sample size.”

As such, the study has followed a purposive sampling approach that emphasises the selection of contexts and participants that are most appropriate for addressing the aim and objectives of the particular study (Bryman, 2012; Flick, 2014; Palys, 2008). As highlighted by Holliday (2016), such purposive sampling is largely informed by the research questions of the individual study rather than aiming for representativeness of a wider population. As the aim of this thesis is to examine the role and application of interactive technology in the co-creation of visitor experiences in Scottish visitor attractions, the sampling strategy must reflect the diversity both in visitor perspectives toward technology, but also in the range of VAs which utilise technology as part of their product offering. Accordingly, a purposive sampling strategy was used to identify both the sites and participants that could illuminate the phenomenon under inquiry.

For the **sampling of context**, four Scottish VAs were selected for this study: Discovery Point; Surgeons’ Hall Museum; the National Museum of Scotland; and Glasgow Science Centre. Within each site, one exhibition was selected for in-depth analysis. This created a defined frame of reference and allowed for a focussed approach to the data collection as opposed to exploring the whole visitor journey at each site. The following sections break down the sampling criteria used for the site selection. In addition, issues relating to site access are presented and overviews of the individual VAs and their products are identified in Sections 4.6.2 and 4.6.3.

- *Sampling Criteria*

Table 11 provides an overview of the sampling criteria used within the research and the following sub-sections discuss the significance of each criterion and consider its implications for the findings of the thesis.

Site	Sampling Criteria						
	Location	Paid / Free Entry	Category	Level of Technology Provision*	Presence of Fixed Interactives*	Pursuit of External Funding	Exhibition Development Status
Discovery Point	Dundee	P	Heritage Visitor Centre	<div>Basic</div> <div>↑</div> <div>↓</div> <div>Enhanced</div>	✓	✓ Council & Crowd-funding	Planning for exhibition development
Surgeons' Hall Museum	Edinburgh	P	Specialist Museum		✓	✓ HLF & Lister Project	Recent development complete
National Museum of Scotland	Edinburgh	F	National Museum		✓	✓ Wellcome Trust	Recent development (major) completed
Glasgow Science Centre	Glasgow	P	Science Centre		✓	✓ Wellcome Trust & Glaxo Smith Kline	Updating existing exhibitions (refresh)

* Level and Type of Technology Provision discussed in Section 4.6.3 / Table 11

Table 11. Sampling criteria for VA sites
Source: Author

Location. Each of the VAs selected for this study were based within Scotland for several reasons. Aside from the ease of access that comes from sites that are closer to the researchers' home, the range, density and variety in products available in Scotland's VA sector provided ample choices in which to conduct the study. The geographic locations identified key areas with dense tourism activity (Edinburgh and Glasgow) in addition to a peripheral area in Dundee. It was important to capture a site from beyond the major cities to acknowledge the diversity in the Scottish VA sector. Dundee is a particularly interesting location as it is a major growth area in Scottish tourism. There has been significant investment into the local area driven by the development of the new V&A Design Museum located next to Discovery Point. The various locations captured within the sample also acknowledge the inherent competition in the Scottish VA market and question whether this influences design choices and technology use within VAs.

Paid / Free Entry. As shown in Table 11, an additional criterion within the sample provides a distinction between paid and free VAs. While this was not a core distinguishing feature within the sampling criteria, the presence or lack of visitor entry charges will have a direct impact on the management challenges associated to the site. Within the sample, three sites operate a ticketing policy to generate visitor income whereas the National Museum of Scotland remains a free-entry site. This split reflects the nature of the Scottish VA sector in which the majority of VAs have implemented paid ticketing to support internal development. In the case of the National Museum of Scotland, its revenue is generated from other commercial ventures and external sources. These differences will undoubtedly have an influence on the availability of funding for exhibition development and indeed technology adoption. There is also potential to explore the visitor perceptions of the experience in paid sites versus a free site. While not a core focus of this study, the expectations associated with paid entry may be very different to those in free VAs. As such there is potential to adapt the findings of this study to specifically question the co-creation of experience in terms of commercial performance (as identified in Section 9.6).

Category. In line with the objectives of the study, a range of VA categories were captured within the sample. The research aimed to explore the influencing factors toward technology-mediated experience co-creation in a variety of VA environments. As such, the four sites included in the sample represent different types of VA (as identified in Section 3.2) that offer different products (as identified in Section 3.2.2). The sample includes a small-scale heritage site that is closely linked to its local community (Discovery Point), a specialist (anatomical) museum that offers a specific collection surrounding a complex topic (Surgeons' Hall Museum), a widely-recognised landmark VA with a nationally significant collection (National Museum of Scotland), and an education-based science centre that has very few artefacts and specifically targets the youth, family and education markets (Glasgow Science Centre). While these four sites do not represent the broad variety of all VA categories, they provide a cross-section that are each using interactive technology in different ways. They also represent arguably the two main VA environments where technology is most widely used (heritage and science-based). The findings of this study could however be adapted to explore alternative VA categories where technology is a less-central component such as art galleries or nature/wildlife sites.

Pursuit of External Funding. As shown in Table 11, each of the four sites within the sample are recipients of external funding. As discussed in Section 3.2.1, the funding landscape for VAs is a particular management challenge which is highly volatile (cf. p 66) and as such VAs are increasingly reliant on external funding opportunities to maintain and enhance their product offering. To acknowledge this trend, the four sites selected for the sample have all pursued external funding sources to finance their exhibition development. While these have come from a variety of sources (consumer-led, industry, government or charity), the sites have each sought to supplement their own revenue generation with external bids to develop their products. The findings of the thesis are therefore more closely tied to the current funding context in the VA sector and acknowledge the need for VAs to explore alternative options for exhibition design and development. The use of external funding also adds a layer of complexity for VA managers as they are then responsible for reporting

to external stakeholders and funding bodies. This additional dynamic undoubtedly has an influencing effect on the form and nature of the exhibition design, and the evaluation techniques that follow their launch.

Exhibition Development Status. Finally, tied to the pursuit of external funding, each of the four sites were selected based on their stage of exhibition development. This was a particularly important dynamic within the sample as it was necessary to understand the VA management perspective throughout the process of technology adoption (from the planning/motivation stage through to the reflection on recent developments). Accordingly, as shown in Table 11, the sites were at different stages of exhibition development. Discovery Point was in the pre-development stage and considered plans for future exhibitions, Surgeons' Hall Museum had just re-opened after a redevelopment albeit on a small-scale (two exhibitions), the National Museum of Scotland had just re-opened after a major redevelopment (two-year closure within a 15-year masterplan), and Glasgow Science Centre was in the process of updating existing exhibitions (incremental changes). It was necessary to understand the motivations, perceptions and decision-making at various stages of exhibition development to understand how these issues influence the co-creative opportunities within the VA sites. The findings from these four sites therefore provide greater transferability by capturing data from different points within the exhibition development process.

- *Issues with Access and Implications for Study*

As discussed by Flick (2007), gaining access to the necessary fields and participants in qualitative research is fraught with difficulty. Not only is it necessary to approach and negotiate with gatekeepers to gain access to desired locations, but also there are additional layers of negotiation required to access research participants for data collection. The following sub-sections reflect on the access arrangements for the VA sites, the VA managers and the visitors involved within the study.

Access to the VA Sites. Gatekeepers included individuals from education (research-oriented) roles within the VAs or from marketing departments who co-ordinated initial communications with the site. Information regarding the

study, the topic, affiliation and sample questions were sent in advance in addition to the fieldwork arrangements for on-site data collection. Access to both Discovery Point Museum and Surgeons' Hall Museum was flexible with dates/times negotiated via email. This was in contrast to the other two sites. Glasgow Science Centre required all researchers to be listed as Visiting Researchers at the site and therefore this involved a few additional details on the study, its ethical clearance status and the Public Liability Insurance covered by the host University. The National Museum of Scotland required separate researcher status for on-site fieldwork and this included meeting security staff on each day of data collection for photographic ID to be produced.

Access to the VA Managers. Access to specific VA managers for interviewing was made in negotiation with the gatekeepers discussed above. Based on the focus of the study and the questions provided at the preliminary stage, a number of VA managers were identified and contact arranged by the gatekeeper. The roles of these individuals are further explored in Chapter 5, however with regards to access, the participants largely came from education, operational or technology-orientated positions depending on the nature of the site and its organisational design. Following an initial referral from the gatekeeper, contact was made with each of the VA managers to negotiate arrangements for interviews. Furthermore, the VA managers became the central point of contact for organising dates and times for the visitor interviews throughout the study.

The **participant sampling for VA managers** involved targeting the relevant individual who could best answer the research questions under investigation (Hennik et al., 2011). In the context of this study, the research questions revolved around the selection, implementation and management of interactive platforms within VA exhibition spaces. Therefore, the VA managers most appropriate to answer these questions predominantly came from an operations, education or information technology background. This did however depend of the nature of the site and its organisational structure. The implication of this sampling approach, is that the findings most accurately

represent the individual views of VA managers whose remit include technology design and management.

Access to Visitors. None of the four sites chose to explicitly inform visitors of my presence within the exhibition spaces, however I was identifiable through my own Edinburgh Napier University ID card in addition to 'visitor' identification provided by all four sites. This was particularly relevant in the case of NMS that, as a free VA, did not have a central arrival/departure point or admissions desk to highlight my presence to all visitors. Each of the four sites agreed to allow me to approach visitors flexibly within the exhibitions, provided that I did not overly impede their time and that they were informed of their right to refusal (ethical considerations further discussed in Section 5.5).

In line with an explorative research approach, the **participant sampling for visitors** was largely random. As discussed by Miles, Huberman and Saldaña (2014), in predominantly qualitative research, there is a need to capture perspectives from a broad range of individuals to understand the various values, issues and feelings toward a particular issues. Accordingly, I approached visitors from a range of perceived age ranges, genders and visitor grouping (e.g. individuals, couples, families) in an attempt to explore the variety in perceptions toward interactive technology use within their VA experiences. A degree of flexibility was very important in the context of this study as VAs, as leisure spaces, attract incredibly diverse audiences from numerous unique backgrounds. As such, the resulting findings provide a deeper understanding of individual experiences rather than a representative picture of all visitors to the sites. In some cases, I entered into a dialogue with a visitor group based on a particularly interesting aspect of observed behaviour within the exhibition (an example of this is provided below).

[With reference to an anti-smoking exhibition] *As the screen showed the child, with the augmented lungs superimposed on their image, the adult began pointing out and engaging the child with the exhibit. However, as the lungs began to fill-up with smoke, the accompanying adult appeared to become quite distressed with what she was seeing. As the smoke got thicker and darker in the animation the adult, rather abruptly, put a halt to the exhibit and moved the child on to the building blocks at the next table.*

This visitor was approached for interview towards the end of their visit as they were leaving the exhibition. In discussion, a personal story around the effects of passive-smoking appeared to be triggered by the exhibit and led to the change in behaviour and abrupt departure from the space.

(Personal diary note, GSC, 24/02/17)

Implications. As discussed throughout this section, while the defined sampling criteria identified four sites that were well suited to contribute to the study, gaining access to these sites and the participants was more a flexible and iterative process. For the sites themselves, initial co-operation and support from gatekeepers was beneficial for assessing the appropriateness of conducting the study within the particular VA. Furthermore, these initial discussions were critical in identifying the appropriate VA manager to both interview and act as a central point of contact. Access to the identified VA managers, whilst sometimes a lengthy process, was necessary to best answer the research questions of the study. Their defined remits and expertise in technology, operations and exhibition design were perfectly suited to nature of this thesis. Finally, the flexible approach to accessing visitor participants was appropriate for this inherently qualitative and naturalistic study. The ability to freely approach and enter into dialogue with a wide range of visitors to the exhibition spaces allowed for a variety of perspectives to emerge without being constrained by stringent selection criteria (such as age, gender or visitor group).

4.6.2 VA Profiles

The following sections identify each VA site individually and provide an overview of the exhibitions selected as a frame of reference for data collection.

- *Surgeons' Hall Museum, Edinburgh*

Surgeons' Hall Museum in Edinburgh is an award winning anatomical museum owned by The Royal College of Surgeons of Edinburgh. Open to the public since 1832, Surgeons' Hall is one of Scotland's oldest museums and houses an extensive collection of surgical tools, dental equipment and pathology specimens. In 2009, the artefacts at Surgeons' Hall were awarded as a Nationally Significant Collection by the Scottish Government and have since been subject to a £4.4 million investment by the Heritage Lottery Fund. The Lister Project aimed to redevelop the visitor experience at Surgeons' Hall's two museums: The History of Surgery; and the Wohl Pathology Museum. Updated interpretation, multimedia, interactive touch-points and presentations have since been launched across the site which reopened to the public in 2015 following a year's renovation¹.

The History of Surgery Museum charts the historical development of Edinburgh's surgical advances. Key periods and innovators in the medical sciences are presented alongside original preserved artefacts. Visitors can view a reconstructed dissection in the Anatomy Theatre through the use of an introductory presentation that is projected onto a model cadaver. In addition, visitors can learn about the surgical procedures, instruments and stories associated with the collection. The museum uses a variety of interactive platforms alongside printed, visual and audio presentations to tell the story.

- *National Museum of Scotland, Edinburgh*

The National Museum of Scotland (NMS) is located in the heart of Edinburgh and in 2016 celebrated 150 years of public access. Figures from the Association of Scottish Visitor Attractions (ASVA) named NMS the most popular visitor attraction in Scotland in 2016 with 1.81 million visitors recorded. The Science and Technology galleries at NMS went through a significant redevelopment in 2015/16 thanks to a £1.3m grant provided by the Wellcome Trust. This was a small part of an extensive £14.1 million project to redevelop

¹ Due to the Human Tissue (Scotland) Act (2006) photography is prohibited inside the exhibition and as such no photographic evidence can be provided here to illustrate the space. A publically available virtual tour of the site is available from: <https://museum.rcsed.ac.uk/about-us/virtual-tour>

ten galleries within the Museum. Following a lengthy closure, the new Science galleries re-opened to the public on the 8th July 2016.

The 'Explore' gallery was selected as a focus for this research as it was termed the 'hand-on' space within the larger science and technology area (see Image 1). Mechanical exhibits are supported with an array of interactive panels, touch-screens and audio-visual material alongside core items/artefacts. A showpiece exhibit is referred to as the 'Collection Cascade' (see Image 2) where visitors can explore items within the museum collection on large interactive panels and then link to similar items within the museum. Once a group is selected, they cascade down the large interactive to the touch-panels at the base. A new focus on biomedical science is portrayed throughout the gallery and key messages revolve around genetics, cloning (with key attraction 'Dolly the Sheep') and medicine. While 'Explore' was the key focus of the study at NMS, its design made observation complex. Due to large exhibits, alcoves and multiple entrance/exit points, observation was also conducted from the exhibition directly above 'Communicate'. This provided a bird-eye view of visitors entering and manoeuvring around the space. This was conducted in tandem with direct observation in the 'Explore' gallery for closer behavioural observation with visitor groups using the exhibits.



Image 1. NMS Explore Gallery (from above). Flickr Creative Commons, 2016.



Image 2. Collection cascade, NMS. Author photograph, 2016.

- *Glasgow Science Centre, Glasgow*

Glasgow Science Centre (GSC) is one of Scotland's leading visitor attractions dedicated to science learning and engagement. The site welcomed 326,181 visitors in 2016, placing it 19th out of the top 20 most popular attractions in Scotland according to ASVA Visitor Reports (2017). The centre spans three floors of science malls, each featuring a different aspect of science education: physics; chemistry; engineering; and biological specialties. The site further features a Planetarium, IMAX theatre and Glasgow Tower for panoramic views across the city.

BodyWorks is a £1.89m project funded by the Wellcome Trust (£900,000), GlaxoSmithKline (£600,000) and a variety of smaller trusts and foundations. The project consists of a 750 m² interactive gallery (see Image 3) with over 100 electro-mechanical, audio-visual and IT based exhibits (see Image 4); a Live Lab programme space and accompanying education and public programmes. The exhibition opened on the 27 March 2013 and specialising on showcasing biological science in engaging ways.



Image 3. Entrance to BodyWorks®. Author photograph, 2017



Image 4. Interactive Pod 'Brain Explorer'. Author photograph, 2017

- *Discovery Point Museum, Dundee*

Discovery Point Museum is a 5* visitor attraction (VisitScotland) located on the Dundee coastline. The site hosts the preserved RRS Discovery, the historic vessel led by Captain Scott that explored the Antarctic in the 19th Century. The adjoining museum, charts the building, voyage and living conditions aboard the vessel and its contributions to geographical research. The museum features computer-based multimedia (see Image 5), themed spaces (see Image 6) and original artefacts throughout (see Image 7). The site is managed by Dundee Heritage Trust, the only independent charity in Scotland to operate two 5* visitor attractions (the second being a sister venue; Verdant Works). In 2016, the site welcomed 54'075 paying visitors. Following the data collection period, Discovery Point was awarded a £523'000 grant (from sources including the Coastal Communities Fund and Dundee City Council) to upgrade its visitor facilities and museum product.

The 'Men of Discovery' exhibition explores the personal stories, roles and histories of the RRS Discovery's crew. The exhibition provides insight into life on board and recalls ships logs, family stories and records of the individuals

associated with the voyage. The space includes extensive storyboarding showing original photography and written material, alongside interactive touch-points where visitors can explore individual stories, audio and visual material. The exhibition also features a large scale projection that charts the voyage of Discovery over time along with early video footage.



Image 5. Interactive Touchscreen 'Men of Discovery'. Author photograph, 2017



Image 6. Discovery Point themed space. Author photograph, 2016



Image 7. Discovery Point presentation case. Author photograph, 2016

4.6.3 Range of technology within the sample

In addition to the sampling criteria discussed throughout Section 4.6.1, it is important to identify the range of technology present within the sample sites. As shown in Table 12, the four sites have been placed on a continuum from basic to enhanced, based on the level of technology provision within the VA exhibition spaces. It was important to identify a range of technology rather than just focus on the most advanced touchpoints for two main reasons. Firstly, in the Scottish VA sector there was not a great amount of evidence to suggest that the most innovative technologies (such as immersive spaces, AR/VR or 4D experiences) were widely used in exhibition design. While there are individual sites that have invested heavily on being the most technology-focussed, this is not widely employed throughout the sector. Secondly, in discussions with VA managers across the sector and with ASVA (as the trade body), there was a strong argument to suggest that the majority of Scottish VAs did not have the capital, expertise or necessity to invest in emerging or experimental technologies as part of the product offering. The message from industry argued that interactives needed to represent value for money and to endure for a significant period of time. Therefore, it was important for this study to recognise the prominence of mid-range, widely used technologies that are more commonly found throughout VA exhibitions rather than focussing on individual cases of cutting-edge technology adoption.

Toward the 'basic' end of the continuum, DP offers a modest level of technology provision. Here the site relies on more traditional forms of interpretation (storyboarding) and enhances this with audio/visual content and sporadic use of binary touchscreens (simple interface that allows visitors to select and move back/forward, left/right, up/down as opposed to more intuitive touchscreen manoeuvrability). The site did make use of an 'Xbox style' interactive which allowed visitors to move around a 3D scan of the RRS Discovery, however this was limited in its content and was more designed for orientation by providing a birds-eye view of the ship. Moving up the continuum, SHM provided a slightly more enhanced range of interactive technology. The site made use of reactive touchscreens (similar interface to smartphone/tablet technology where visitors can zoom, swipe, pinch and manoeuvre more

intuitively) in addition to audio/visual presentations. This site also provided an introductory presentation using a projection onto a tangible cadaver to illustrate a historical dissection. This provided an example of technology being used to provide introductory context and equip visitors with a core process that was then developed throughout the surrounding exhibition.

Towards the 'enhanced' end of the continuum, NMS provides a greater range of interactives within their science and technology exhibition. In addition to the audio/visual and touchscreen technology present in DP and SHM, there is a greater focus on game-based interactives in an attempt to make complex scientific principles more accessible to various audiences. Furthermore, NMS offers hybridised exhibits which combine a technology interface with mechanical exhibits which adds a greater level of tangibility to the visitor experience. Finally, GSC provides the most sophisticated level of technology within the sample. This is perhaps unsurprising due to the lack of original artefacts/objects available in science centres (cf. p84), however GSC has adopted a significant range of interactives to aid visitors in understanding complex science-based processes. This particular site was the only one to use QR-code technology and associated augmentation in addition to Kinect® technology to allow for visitor tracking. The site also uses separate pods, which are updated regularly, that can house 3D visualisation and VR exhibits.

While the sample does not aim to directly compare technology use across sites, a suitable range of technology has been captured to reflect the diversity inherent in the VA sector. Accordingly, the thesis does not claim to represent ALL of the potential technologies used in VAs but to identify the factors influencing the co-creation of experience through the use of typical touch-points in a range of settings. A notable example of this is the exemption of handheld and personal-use technologies (i.e. visitors' personal smartphones and tablets) from the sample. This was partly due to the proliferation of existing research into mobile/handheld technologies in VAs (cf. p85), but also to acknowledge the reliance of the majority of Scottish VAs, on the use of fixed interactives within their exhibition spaces.

The choice to represent a broad range of technologies within the sample also has implications for the longevity of the study's findings. Early critique by Poon (1993) suggested that a major challenge for ICT-focussed research is that in the time for findings to be disseminated and published, often the technological capabilities have advanced. This arguably limits the usability and longevity of findings that are too specifically focussed on individual platforms. A notable example of this was the growth of research into Google Glass, which was then rapidly withdrawn from sale in 2015 following intense criticism. Despite the resurgence of wearable technology in the tourism industry, this highlights the challenges associated with research into specific technologies. To counteract this difficulty, this thesis explored the wider context in which technology sits and provides a cross-sectional snapshot of perceptions towards various touch-points as mediators of co-created experiences. The sampling approach used within this study provides a means for innovative work, which is not tied to specific cutting-edge technologies, whilst also providing the groundwork for future research into specific technological platforms by other scholars.

Level of Interactive Technology Provision	<i>Basic</i> ←————→ <i>Enhanced</i>			
Site	Discovery Point	Surgeons' Hall Museum	National Museum of Scotland	Glasgow Science Centre
Range of Technology	<ul style="list-style-type: none"> • Audio/visual presentations • Binary touchscreens with corded audio-handsets • 3D scanning 	<ul style="list-style-type: none"> • Audio/visual presentations • Reactive touchscreens 	<ul style="list-style-type: none"> • Audio/visual presentations • Reactive touchscreens • Gaming technology • Hybridised exhibits 	<ul style="list-style-type: none"> • Audio/visual presentations • Reactive touchscreens • QR-enabled exhibits • Kinect® exhibits • Hybridised exhibits • Pods with VR capabilities
Examples of Use	<p>'Men of Discovery' touchscreens which present textual / photographic content once icons are selected.</p> <p>Immersive sound and background audio.</p> <p>'Xbox style' interactive which allows visitors to move around exterior 3D scans of the RRS Discovery.</p>	<p>Life-size touchscreen which allows visitors to visualise the human body and add/remove layers (nerves, muscle, skeleton) and manoeuvre to different angles.</p> <p>Introductory presentation with reconstructed cadaver, projection and associated audio/visual.</p>	<p>Interactive touchscreen game which encourages visitors to 'genetically splice' various animals and evaluate the results.</p> <p>'Collection Cascade' through which visitors can access and link to content from the NMS collection on a large, table-top touchscreen.</p>	<p>Anti-smoking touch-point with a QR code that overlays damaged lungs onto the visitor standing in front of it.</p> <p>Kinect®-enabled exhibit which explored visitor balance and co-ordination.</p> <p>Interactive pod with virtual reality and 3D visualisation to explore the structure of the human brain.</p>

Table 12. Range of technology present in the sample sites
Source: Author

4.7 Chapter Summary

The purpose of this chapter was to consider the philosophical positioning of this research and to reflect on the ontological, epistemological and methodological choices which guided the research. This thesis is firmly rooted in the constructivist paradigm which, due to its interpretivist and subjective underpinnings, is particularly well-suited to support the aim and objectives of this study. The inherent individuality that exists in tourism experiences and co-creation requires a philosophical stance that can acknowledge and celebrate the individual constructions of reality that constructivism offers. In line with the established epistemology, a qualitative research approach was employed to gain a rich understanding of the individual perceptions, values and considerations of the participants. Finally, the VAs selected as contextual frames in which to explore the technology-mediated co-creative experience were identified. Chapter 5 considers the research methods used within the study in addition to the tools and techniques used throughout the data collection process.

CHAPTER 5. RESEARCH METHODS

5.1 Introduction

The purpose of this chapter is to introduce the research methods used within the study. Where Chapter 4 positioned the thesis firmly in the constructivist paradigm, the proceeding chapter will identify and evaluate the research methods used throughout the study. Initially, an overview of the research methods indicates their use in existing tourism and experiential co-creation research, and their associated suitability for this study. Details of the pilot study, context-providing observation and qualitative phases are provided in addition to insight into the analytical technique used within the study. Finally, the chapter closes with ethical considerations, reflections on the data collection and an evaluation of the research process.

5.2 Research Methods

The research approach for this study is driven by its conceptual framework. As discussed in Section 2.3, the core concept of co-creation represents a relationship between actors within the service environment. In this research, the VA and the visitor represent two such actors that are interconnected in the co-creation of memorable experiences. As such, the research approach reflects this and captures both the VA management perspective alongside the visitor perception of the technology-mediated VA experience. As indicated in Figure 19 (cf. p126), the study was divided into two types of semi-structured interviews and made use of the template analysis technique.

5.2.1 Semi-structured interviews

In-depth interviewing has long been supported as a key method for qualitative research (Saunders et al., 2012). The method is particularly valuable for developing a conversation and gaining insight into a social issue from the individual perspective of the participant (Brinkmann, 2013; Hennik et al., 2011; Rubin & Rubin, 2005). As discussed by Brinkmann and Kvale (2005), the qualitative interview aims to facilitate a dialogue in which participants can

share their subjective views in a particular space and time. The interviewer offers opportunities for individuals to share their perspective on a series of issues as naturally as possible therefore offering a glimpse into their 'world' (Easterby-Smith, Thorpe, & Jackson, 2008), making it a particularly useful tool within a constructivist research approach.

The use of a semi-structured approach allows topics and issues to be specified in advance through the use of an interview guide, however the precise questioning, sequencing and wording are developed organically during the interview (Berg, 2004; Patton, 2002; Wengraf, 2001). This facilitates a natural progression of conversation while still maintaining a loose structure to direct the dialogue. While critics of the semi-structured approach would suggest the 'free-flow' nature of the interview could compromise the comparability of the responses (Patton, 2002), the semi-structured interview provides opportunities for a flexible and iterative research method that allows for in-depth discussion and engagement. As such open-ended questioning allows this individuality to be expressed within an interview structure (Creswell, 2014; Jennings, 2005; Saunders et al., 2012). As a result, this method does not necessarily aim to generalise from the findings, but to illuminate and explore the individual issues arising from the participant perspective. Finally, as discussed by Irvine, Drew and Sainsbury (2013), face-to-face semi-structured interviews allow for the researcher to detect and reflect upon visual and non-verbal cues presented by the participant during the interview.

- *Relevance to this Study*

In management-orientated research, semi-structured interviewing has been used in a plethora of studies in both co-creation and VA management. Zomerdijk and Voss (2010) used semi-structured interviews in their exploration of service design in experience-centred businesses. The authors highlighted the benefit of the semi-structured approach in allowing discussions to evolve around the topics listed in the interview guide. The ability for participants to elaborate naturally on their responses thus created a richer understanding of individual perceptions, values and views. In their study into conservation interpretation in wildlife attractions, Wijeratne et al. (2014) used semi-

structured interviewing with site managers and on-site personnel. The authors suggested the suitability of this method for its ability to provide in-depth understanding into the phenomenon under investigation whilst also being led by a theoretical structure. Similar motivations were cited by Gombault, Allal-Chérif and Décamps (2016), who used semi-structured interviews with heritage managers to understand how ICT adoption linked to organisational mission statements in the heritage sector. A similar method was employed by tom Dieck and Jung (2017) who used semi-structured interviews in their study into stakeholder perceptions on the value of AR in cultural heritage sites. The authors used the semi-structured style to both encourage a broad range of responses but also to encourage dialogue from a range of stakeholders.

In visitor-orientated research, there are a number of studies which have used semi-structured interviewing to explore individual perceptions toward tourism products and experiences. Collin-Lachaud and Passebois (2008) used semi-structured interviewing in their study into the value of immersive technologies in museum experiences. The authors argued the appropriateness of semi-structured interviewing styles to 'make sense of' the subjective visitor experience within an exploratory study. Likewise, Tung and Ritchie (2011) advocated the use of in-depth semi-structured interviewing in their study into memorable tourism experiences. The authors noted that having a loose plan for interviews allowed for a more structured dialogue, in which answers can lead into forthcoming questions. In their study into sought experiences at dark tourism sites, Biran et al. (2011) used semi-structured interviewing to uncover individual visitor motivations and preferences. Similarly, Park and Santos (2017a) used semi-structured interviews at various stages of their research into tourism experiences. The authors used various styles of questioning to not only prompt travellers but also to encourage their reflection on the experience. The wide-reaching use of semi-structured interview method in tourism and technology-mediated experience research provides a strong justification for its applicability in this study, which aimed to explore the role of interactive technology in the co-creation of experience from a range of individual perspectives.

- *Semi-structured Interviewing in Practice*

As a key method, semi-structured interviews have been conducted with both VA managers and visitors in the four sites detailed in Section 4.6.2. This was a strategic decision to reflect both actors who play significant roles in the generation of tourism experiences. The VA management have the responsibility for designing the physical environment, facilities and interpretative media and the visitors then (as the literature has suggested) interact with these elements to potentially co-create an individualised experience. To gain a deeper understanding into how the co-creative experience exists and is mediated by interactive technology, it is necessary to examine both actors within the relationship (Dumitrescu et al., 2012; Prahalad & Ramaswamy, 2004a; Ramaswamy & Ozcan, 2014). To represent one side over the other conflicts with the co-operative dialogue and relationship that SD Logic and co-creation theory consistently advocate. This study also responds to calls from scholars based in co-creation research who argue that too often a firm-centric perspective takes precedent in academic research.

The phase 1 interviews were conducted with identified members of VA management in each of the sites. Through the initial recruitment stages, a relevant key contact was made at each site that was directly involved with (or oversees) one or more of the following roles:

- ***Operations management*** – broad remit that can include: day-to-day site management; visitor management; service monitoring; and quality control (Sharpley, Yeoman, & Leask, 1999).
- ***Exhibition design / curatorial*** – individuals with a defined remit to manage the context, design and interpretation within exhibitions.
- ***Visitor services*** – individuals with responsibility for the visitor route or journey and service-based personnel within the site.

The difficulty with stipulating one specific management role is due to the nature of VAs as diverse businesses. Often the size, ownership or type of VA will dictate its management structure. In small, local VAs, several of the roles

identified above may be under the remit of one individual. Conversely, in larger sites, there may be different teams or networks that fulfil such roles. As a result, the key contact at each VA was identified on a site-by-site basis, considering the varieties of management and staffing structures as they arose. As such, the sampling strategy for the phase 1 interviews can be described as purposive and information-orientated. The individuals were selected based on their expertise and ability to answer the questions set out in the study (Patton, 2002).

The format of the VA management interviews encouraged participants to consider the decision-making, issues and management challenges associated with interactive technology use in their respective exhibitions. Appendix 1 provides the series of loose interview topics conducted with the VA managers. These topics emerged as a result of the theoretical framework drawn from the literature review in both co-creation theory and technology-use in a VA context. The interview structure involved discussing the core message of the exhibition, the thought-process for technology adoption and the perceived importance of technology in the visitor experience.

To complement the interviews collected from the VA managers, the same semi-structured method was used with visitors to the sites. The purpose of these interviews was to explore the individual perceptions of technology use within the exhibition environment and to draw out any key factors or themes that contribute to the co-creation of experience. Questions were open-ended and semi-structured to allow the participants the freedom to share views without being restricted by a rigid interview schedule. Appendix 2 presents the loose structure for the visitor interviews, with questions relating to: how the individual engages with the technology; how it has contributed to their experience; and their interpretation of its effectiveness within the exhibition. As in the case with the VA management interviews, the visitor interview guide was developed as a result of the theoretical framework drawn from the literature review. Visitors were selected at random to capture a variety of backgrounds, age ranges, visitor profiles and demographics.

5.3 Data Collection

5.3.1 Pilot Study

As a key recommendation in most forms of research, a pilot study allows for controlled testing of the proposed methodology. The process not only attempts the various research methods in a live context, but also provides a period of reflection. By experimenting with different questioning, styles, approaches and formats the pilot can bring valuable insight into how the methods can be tailored to provide the richest possible data (Flick, 2014; Miles, Huberman, & Saldaña, 2014; Yin, 2014). Furthermore as suggested by Maxwell (2009), pilot studies can be particularly useful for questioning how participants understand the key concepts under investigation. If there is a significant disconnect between the concept and the interpretation of participants, it may become necessary to reframe or redefine questions to clarify exactly what is being explored.

In this research, a pilot study was conducted at a recently renovated visitor centre based at a battlefield site in the north of Scotland. Access was supported by prior research agreements existing between the site and Edinburgh Napier University. The pilot study included a full interview with one of the sites management team with direct responsibility to exhibition design, marketing and visitor services. The interview went through broad topics in a flexible way so that feedback could be received as to the style of the question and its suitability. The interview was recorded for initial analysis but has not been included as official data in the thesis or for subsequent publication. The pilot also captured the visitor dimension through a period of observation, attempting different techniques and note-taking methods. A series of visitor interviews were also conducted to experiment with various questioning styles, approaches and techniques.

- *Outcomes, Reflections & Refinement*

In reflecting on pilot study, several challenges associated with visitor-orientated research and practical issues emerged (examples shown in Table 13). As indicated below, a number of unexpected issues arose with regards to visitor-orientated research. Achieving a suitable depth of data and the lack of

captive audience was particularly challenging and this encouraged future research to be conducted in natural ‘rest spots’ where visitors congregated. Furthermore, the visitor spaces within exhibitions were not ideal for conducting interviews. Ambient noise and the presence of other visitor groups made audio-recording a challenge during the pilot. Similarly, during the pilot study another research project was underway in the same space which led to ‘research overload’. Similarly, the lessons learned during the pilot study provided various strategies to improve the research methods in the live phases. Examples of refinements to the research methods included: using concise, simple language to prompt participants during the interviews; organising site visits to better identify the physical space and choosing appropriate locations for interviews; and engaging with gatekeepers (administration/ VA management teams) early to minimise limitations in access. The experience of the pilot study reiterated the need for flexibility and resilience in the data collection process.



 Issues related to visitor-orientated research	 Issues related to fieldwork in visitor spaces
<ul style="list-style-type: none"> • Depth of data • Lack of captive audience • Translation of academic constructs into questioning • Ethical restrictions (VAs with strong family/education visitor profile) • Commercial restrictions (potential impact of research on visitor experience) 	<ul style="list-style-type: none"> • Ambient conditions (sound, background conditions) • Presence of other visitor groups • Space and environment • Lack of natural rest spots • Sporadic visitor flow • Observation at a distance • Research overload (clashing with existing evaluators)

Table 13. Challenges in visitor research based on the pilot study
Source: Author

5.3.2 Context-provider – Observation in Exhibition Spaces

Observation represented an important context-provider in this research. As discussed throughout this thesis, VA exhibitions often exist within unique, novel and stylised environments with diverse layouts, presentations and

product offerings. As discussed by Patton (2002), observation can be particularly appropriate for constructivist research in the way that it can acknowledge the unique contexts under investigation. In this study, it was therefore necessary to gain a strong working knowledge of the experience environments in which interactive technology formed part of the VA product. While observation is widely applied to consumer behaviour research, there were limitations as to the extent it was used within this study.

Participatory observation is often linked to ethnographic research and immerses the observer as an active participant in the setting being observed (Angrosino & Mays de Perez, 2003; Friedrichs & Lüdtke, 1975; Seaton, 2002). This participation would be particularly difficult to achieve in the context of this research. Being too close to the visitor and immersing oneself into the visitor journey would potentially compromise the visitor experience and be arguably seen as intrusive. This would add another 'actor' to the co-creation process rather than impartially observing it. To guard against this, observation was used within the study to gain initial contextual information as to the unique nature of the exhibition spaces and the products which they offer. As discussed by Kumar (2005), this approach places the researcher in a passive observer role within a defined environment. They do not get directly involved in the activities of the individual or group but aim to observe activities and spaces as naturally as possible. This is particularly appropriate for experience-based research to minimise the impact of the researcher on the formation of the visitors' experience.

Observation has had a long history in tourism experience research (Lugosi & Walls, 2013) and is seen as a valuable secondary method for understanding behaviours in defined contexts (Frochot & Batat, 2013; Tussyadiah, 2014). For example, Neuhofer et al. (2014) used observation as a secondary method in their study of technology-enhanced tourism experiences. The authors noted the value in observational techniques for allowing the researcher to gain an understanding of technology-enhanced experience first-hand. Similarly, Zátori (2016) used observation in addition to interviewing to explore behaviours, reactions and customisation opportunities in guided tours. The author notes the need to maintain a passive role in the observation of participants to

minimise any influence over their experience. Contextual observation proved relevant to this study as a means of providing insight into the exhibition environment and its associated role in the visitor experience.

Prior to the management interviews, periods of contextual observation were conducted at each of the four VA sites. As shown in Table 14, there were three days on-site fieldwork for each VA, with the exception of GSC where four days were used. This was largely due to the time of year, during the winter months GSC reduces its opening hours from 10am – 3pm with the bulk of visitors arriving in the morning. This limited the available observation/interviewing time to a small window, and as such, an extra day was scheduled to collect additional data.

SITE	DATES	LOCATION	EXAMPLES OF OBSERVATIONS
Surgeon's Hall Museum	01/08/2016	History of Surgery Museum (HSM)	Descriptions of exhibition space. Key points of interest, 'showpiece' exhibits.
	03/11/2016	HSM	Observation of visitor flow, visitor structures
	04/11/2016	HSM	Visitor behaviours
National Museum of Scotland	01/12/2016	Explore / Communicate	Descriptions of exhibition space. Key points of interest, 'showpiece' exhibits.
	10/01/2017	Explore / Communicate	Observation of visitor flow
	14/01/2017	Explore / Communicate	Visitor behaviours
Glasgow Science Centre	18/10/2016	BodyWorks®	Descriptions of exhibition space. Key points of interest, 'showpiece' exhibits.
	07/11/2016	BodyWorks®	Observation of visitor flow
	20/12/2016	BodyWorks®	Visitor behaviours
	24/01/2017	BodyWorks®	Visitor behaviours
Discovery Point Museum	30/11/2016	Men of Discovery Exhibition (MDE)	Descriptions of exhibition space. Key points of interest, 'showpiece' exhibits.
	17/01/2017	MDE	Visitor flow
	21/01/2017	MDE	Visitor behaviours

Table 14. Observation dates and locations
Source: Author

As noted above, a number of observations were made at each site. As a frame of reference, various prompts were used to capture observations about the various exhibition environments and visitor activities therein. The following four prompts provided a starting point within the observation:

- ***Environmental*** – how do the environmental conditions shape the visitor journey?
- ***Visitor flow*** – can any predominant visitor route be identified and how do visitors manoeuvre around the space?
- ***Visitor dynamics*** – are there any patterns in relation to visitor grouping or make-up? Predominant user groups and observed behaviours.
- ***Visitor behaviours*** – how do visitors behave both in ambient spaces and in relation to the technological touch-points?

While the observations collected throughout the initial stages of the study may not be classed as a core research method, they did, in some cases, direct the questioning in the management and visitor interviews. For example, initial observations as to popular exhibits within exhibition spaces helped shape points of discussion within the management interviews. Similarly, observations of particular visitor flows and/or behaviours provided useful starting points for engaging in the visitor interviews.

5.3.3 Qualitative Phase 1 – Management Interviews

As discussed in Section 5.2.1, semi-structured interviews were conducted with management representatives at each of the four VAs. These were largely collected prior to entering the visitor space, however due to access restriction at GSC, the management interview was collected following a day of initial observation in the exhibition. These were predominantly individual face-to-face interviews conducted on-site. The only exception was at GSC where a group interview was conducted. In this case, the expertise required to address the research objectives for this study could not be attributed to one individual manager. As such, the GSC interview involved three managers from across two departments. This was conducted as a group interview with the same interview guide as the other management interviews and analysed as multiple

voices within one transcript. Table 15 provides an overview of the management interviews and the expertise captured. To ensure anonymity of managerial participants, direct job titles/roles have been omitted in favour of general areas of expertise.

SITE	DATE	DURATION	MANAGEMENT EXPERTISE CAPTURED
Surgeon's Hall Museum	26/07/2016	34:52	Design; Curatorial
National Museum of Scotland	05/10/2016	49:33	Education; Design; Curatorial
Glasgow Science Centre	18/10/2016	49:20	<i>Group</i> - Technical; Operational; Design
Discovery Point Museum	30/11/2016	28:17	Curatorial

Table 15. Management Interviews: Collection & Expertise
Source: Author

5.3.4 Qualitative Phase 2 – Visitor Interviews

This section provides an overview of the visitor interviews collected throughout the research. Across the four sample sites, 31 interviews were collected from a random cross-section of visitors to the attractions.

Table 16 provides a full overview of the interview data set. The interviews were collected in-situ, either inside the exhibition space or at the exit point. Age ranges, gender identification and country of origin data were collected for each participant and the following sub-sections explore these in greater depth.

CODE	SITE	LOCATION	DATE	ALIAS	GENDER	AGE RANGE	COUNTRY OF ORIGIN	INTERVIEW LENGTH (mins)
1a	SHM	Edinburgh	03/11/2016	Steven	M	18-24	UK	00:14:05
1b	SHM	Edinburgh	03/11/2016	John	M	25-34	Ireland	00:16:12
1c	SHM	Edinburgh	03/11/2016	Jane	F	35-44	USA	00:15:03
1d	SHM	Edinburgh	03/11/2016	Sophie	F	18-24	UK	00:19:10
1e	SHM	Edinburgh	04/11/2016	Phil	M	45-54	UK	00:12:06
1f	SHM	Edinburgh	04/11/2016	Linda	F	45-54	Germany	00:11:14
1g	SHM	Edinburgh	04/11/2016	Mick	M	25-34	UK	00:17:56
1h	SHM	Edinburgh	04/11/2016	Hannah	F	35-44	UK	00:10:06
2a	GSC	Glasgow	20/12/2016	Tom	M	18-24	UK	00:15:36
2b	GSC	Glasgow	20/12/2016	Susan	F	18-24	UK	00:12:49
2c	GSC	Glasgow	20/12/2016	Sarah	F	55+	UK	00:15:02
2d	GSC	Glasgow	20/12/2016	David	M	35-44	UK	00:16:54
2e	GSC	Glasgow	24/02/2017	Tina	F	25-34	UK	00:17:38
2f	GSC	Glasgow	24/02/2017	Karl	M	25-34	Ireland	00:13:35
2g	GSC	Glasgow	24/02/2017	Laura	F	35-44	Italy	00:19:12
2h	GSC	Glasgow	24/02/2017	Amy	F	18-24	UK	00:18:00
3a	NMS	Edinburgh	10/01/2017	Tony	M	35-44	Russia	00:14:22
3b	NMS	Edinburgh	10/01/2017	Jake	M	18-24	UK	00:16:58
3c	NMS	Edinburgh	10/01/2017	Maria	F	55+	Spain	00:18:46
3d	NMS	Edinburgh	10/01/2017	Sam	M	45-54	UK	00:12:10
3e	NMS	Edinburgh	10/01/2017	Lola	F	35-44	USA	00:13:29
3f	NMS	Edinburgh	14/01/2017	Janet	F	18-24	UK	00:15:30
3g	NMS	Edinburgh	14/01/2017	Rachel	F	25-34	UK	00:12:40
3h	NMS	Edinburgh	14/01/2017	Paul	M	55+	UK	00:16:09
4a	DP	Dundee	17/02/2017	Simon	M	45-54	UK	00:14:09
4b	DP	Dundee	17/02/2017	Anna	F	45-54	UK	00:16:13
4c	DP	Dundee	17/02/2017	Jenny	F	25-34	UK	00:19:23
4d	DP	Dundee	17/02/2017	Michelle	F	55+	USA	00:18:32
4e	DP	Dundee	21/02/2017	Jordan	M	18-24	UK	00:17:05
4f	DP	Dundee	21/02/2017	Wayne	M	35-44	Ireland	00:14:22
4g	DP	Dundee	21/02/2017	Suzanne	F	25-34	UK	00:16:44
Total:								08:01:10
AVG:								00:15:31

31 visitor participants

Table 16. Overview of visitor interview participants
Source: Author

- *Gender Division*

As shown in Figure 20, the gender division of participants was fairly even, with 17 female participants to 14 male. Gender characteristics were not exclusively under investigation throughout this study but will be used selectively during some parts of the analysis. While the issue of gender in relation to visitor behaviour in museums has received some interest in the visitor studies literature (see. Harrison & Shaw, 2004; Imamoğlu & Yilmazsoy, 2009), it has yet to be investigated through the experiential co-creative lens. Despite gender distinctions not being the explored here, this does present opportunities to extend the study in the future.

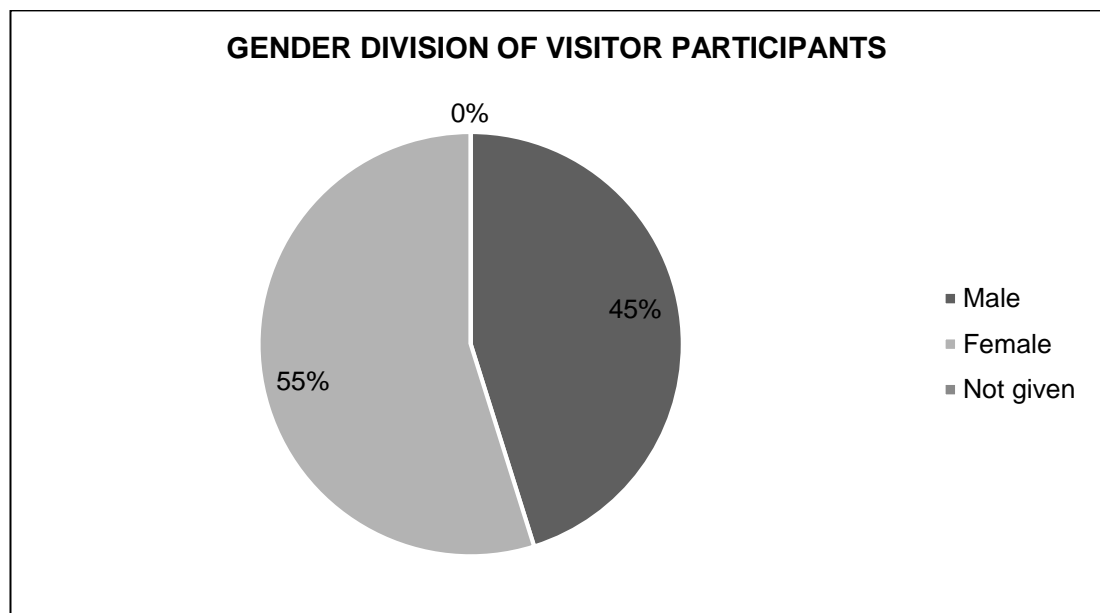


Figure 20. Gender division of visitor interview participants

- *Age Ranges*

Figure 21 shows the breadth and range of ages captured within the data. While not a core variable in the research questions for this study, the participant age ranges undoubtedly have a bearing on the data. This is particularly relevant to discussion to generational traits and technology-use. A number of studies in tourism research have discussed the preferences for technology in tourism experiences for younger generations (Pendergast, 2010; Puchner et al., 2001; Sutcliffe & Kim, 2014). Similarly, there is a strong body of knowledge that

identifies different VA experiences between generational cohorts (Leask et al., 2014; Leask, Fyall, & Barron, 2013).

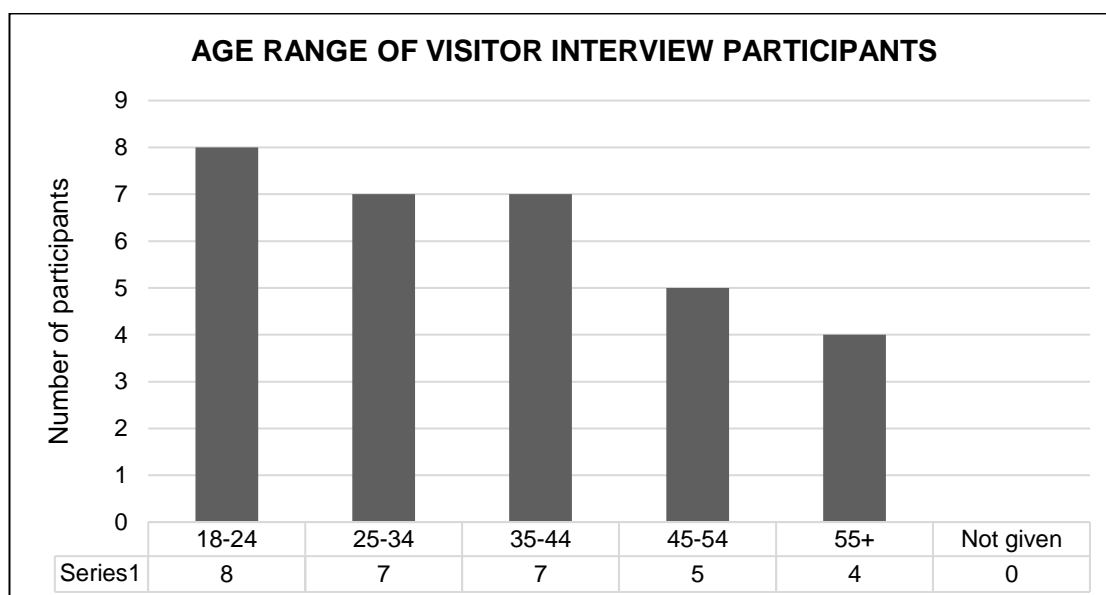


Figure 21. Age range of visitor interview participants

- *Countries of Origin*

As can be seen in Figure 22, the visitor profile is predominantly from the UK this is partly due to the time of data collection. The data collection period took place during the winter months where international visitor numbers typically drop. This could be seen as a potential limitation of the study, as a sample of UK sites with predominantly UK visitors potentially limits the international scope of the findings. However, just over one third of participants came from outside of the UK and therefore does integrate a level of international perspective. The study did not intend to compare or contrast experiential differences based on the country of origin and as such does not have a great bearing on the findings. This does however open avenues for future research that focus on international visitor perceptions exclusively in the technology-enabled co-creation process. Particularly in a study where cultural values are questioned as a variable in the co-creative process (e.g. cultural differences between visitors and interactive technology use). While this is out with of the scope of this thesis, it is an interesting prospect for further research.

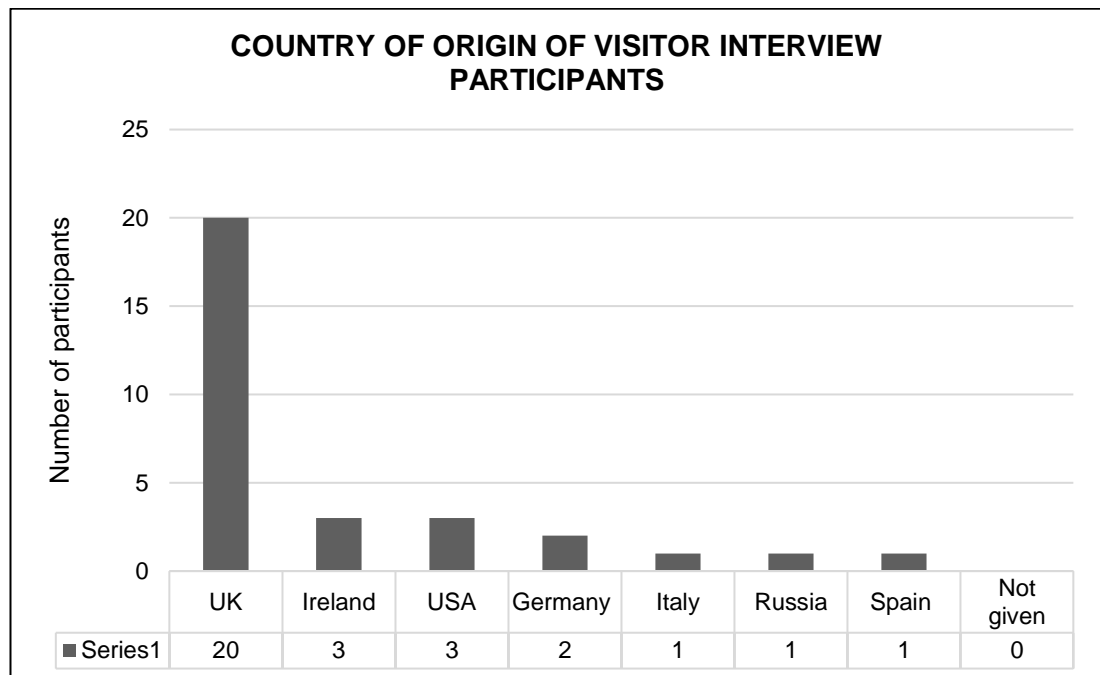


Figure 22. Country of origin of visitor interview participants

5.4 Data Analysis

5.4.1 Transcription and Computer-Assisted Qualitative Data Analysis Software (CAQDAS)

The raw data for this research takes various forms. As discussed by Holliday (2007) this qualitative study produced *descriptions of behaviour* (consumer interactions, engagement and activities through observation) and *appearance* (descriptions of the exhibitions, their functionality, product offering and setting) in addition to *accounts* (interview transcripts, audio recordings and observation notes). Furthermore, to best present the nature of the exhibits and VA settings in detail, photographic data was collected with the permission of the site. It should be noted, that this does not include or feature research participants, but merely images of the interactive technology in situ and the surrounding exhibition. The use of images, as appropriate, was to illustrate interactive exhibits or elements of the exhibition environment that would have otherwise required lengthy descriptions.

CAQDAS (computer assisted qualitative data analysis software) was also used during the data analysis process. Whilst some authors advocate the use of CAQDAS for extensive analysis (for example: Miles et al., 2014; Ryan & Bernard, 2003), this study the software flexibly. Its functionality as a data storage, recall and presentation platform cannot be understated, and there are clear benefits from having all the raw data stored securely and electronically. However, the interpretation of the data and its application to thematic coding is solely in the hands of the researcher. Therefore, it was equally important to manually work with the data to understand its relevance, scope and individuality. In summary, CAQDAS was used for data storage and organisation alongside traditional methods of data management to collate and categorise the transcribed material.

5.4.2 The Template Analysis Technique

In considering the various analysis techniques available to qualitative research, such as grounded theory (Hernandez, 2009), phenomenological analysis (Smith & Osborn, 2008), discourse analysis (Gee & Handford, 2012) or more generic thematic analysis (Braun & Clarke, 2006), this study selected template analysis as its guiding technique in the data analysis process. As a form of thematic analysis, the template analysis technique represents a more structured way of managing qualitative data through its use of a-priori themes and iterative template development (King, 2012). As argued by Brooks, McCluskey, Turley and King (2015) template analysis is becoming increasingly popular as a result of its flexibility and its compatibility with various epistemological viewpoints. Furthermore, as suggested by Waring and Wainwright (2008) template analysis is particularly useful for analysing semi-structured data that has emerged from a framework. As the interview guide for this study was drawn from the themes in the literature review (Chapters 2 and 3), and followed a semi-structured format, template analysis was a particularly appropriate technique through which to analyse the collected data. Similarly, the use of template analysis has begun to receive greater use in tourism management research (such as: Andriotis, 2010; Neuhofer et al., 2014; Tabari, Wilson, & Ingram, 2016) and is seen as valuable for those seeking a more structured approach to experientially-focussed research (King, 2012).

- *Coding Structure and A-priori Codes*

As highlighted by Coffey and Atkinson (1996), various levels of coding can be applied to data analysis, often starting with the broadest open categorisation. This will undoubtedly produce a vast number of themes but provide a rich and dense understanding of the participants' views from which refinement can follow. However, the analysis strategy should allow for this possibility and be flexible enough to explore the interplay should it present itself in the data. Template analysis affords this level of flexibility by encouraging the qualitative researcher to refine, merge or even disregard codes that no longer fit with the emergent template (Brooks et al., 2015). As this study is drawn from the constructivist paradigm, a-priori (initial) codes were used tentatively to minimise subjective bias. As shown in Table 17, two broad a-priori themes were drawn from the literature and a total of 10 a-priori codes were identified. These were summarised based on the previous research in both experience co-creation (Chapter 2) and interactive technology use in a VA context (Chapter 3) but were left suitably broad to accommodate for revisions, refinement and expansion based on the emerging themes coming from the data. Similarly, as indicated in the literature, there was a clear split between the management and visitor perspectives as separate actors within the service relationship. It was therefore necessary to reflect this in the a-priori template.

<i>A-priori Theme</i>	<i>A-priori Codes</i>
<i>1. VA Management Factors</i>	1. Nature of message
	2. Commercial drivers
	3. Management of technology
	4. Authenticity
	5. Value of technology
<i>2. Visitor Factors</i>	6. Preference
	7. Propensity
	8. Access
	9. Demographics
	10. Interpretation of the experience

Table 17. A-priori coding
Source: Author

In contrast to other forms of thematic analysis, the template analysis technique encourages the qualitative researcher to generate coding hierarchies throughout the analytical process and reflect on the development of the

templates as they progress. As suggested by Brooks et al. (2015), it is the journey through which the template was developed that adds value to the qualitative study, not the finished template in of itself. To ensure transparency in the coding structure, this study followed the procedural steps presented by King and Brooks (2017) and these have been summarised in

Table 18 and mapped against the activities undertaken during the analytical process.

Stage	Activity
1. <i>Data Familiarisation</i>	<ul style="list-style-type: none"> • Transcription • Data storage and upload to MAXQDA software in preparation for coding.
2. <i>A-priori coding</i>	<ul style="list-style-type: none"> • Identify a-priori themes and codes from the conceptual framework (Table 17) • Applied to a sub-set of the data
3. <i>Organisation and clustering</i>	<ul style="list-style-type: none"> • Organisation of data into thematic clusters in VA management & visitor perceptions • Coding-on to generate initial hierarchies
4. <i>Initial coding template</i>	<ul style="list-style-type: none"> • Adapted the a-priori coding template based on sub-set of data • 1 manager interview and 5 visitor interviews
5. <i>Template modification</i>	<ul style="list-style-type: none"> • The initial template was then applied to a larger sub-set of the data to create an emergent template • 2 manager interviews and 10 visitor interviews • Refined and modified themes
6. <i>Application to full data set and further refinement</i>	<ul style="list-style-type: none"> • The modified template was then applied to the remainder of the data and underwent a final round of refinement • Finalised template generated as a result of the whole data set

Table 18. Coding and analysis strategy
Adapted from: King and Brooks (2017)

- *Template Development*

As shown in Table 18, the coding template produced in this study progressed through three iterations in total. The following section reflects on the iterations

and their development with examples provided to demonstrate their refinement:

- Initial and emergent coding template

Based on the a-priori coding and its application to a sub-set of the data (1 VA manager interview and 5 visitor interviews), an initial coding template was generated. This largely kept with the a-priori codes and themes but began to identify emerging concepts not addressed in the a-priori coding and also challenged many of the key concepts raised in the literature review. For example, authenticity in the VA experience emerged as a significant management issue in the literature surrounding interpretation, however this did not emerge strongly in the initial coding. Appendix 3 illustrates the initial template, featuring 5 levels that were mapped against the loose a-priori codes. There were clearly sub-themes that overlapped or did not fit the data and at this stage a series of refinements were suggested to adapt the template before being applied to a further sub-set of data.

Following the generation of the initial coding template, this was then applied to a larger sub-set of the data (2 additional management interviews and 10 visitor interviews). The emergent template began to adapt to the range of contexts included within the sample. The management factors translated into challenges and issues due to the emergent themes and the visitor factors transferred to visitor perceptions and determinants. The level 2 and 3 themes were amalgamated during this integration as the process gained a more holistic understanding of the data.

- Finalised coding template

The final iteration of the coding template is presented in Appendix 4 and provides a structure for the findings and analysis chapters that follow. The overall a-priori themes remained the same although these were refined to: *Management Challenges and Issues* and *Visitor Perceptions and Determinants* to reflect the nature of the data more accurately. The a-priori codes were changed substantially indicating the analysis had moved beyond the theoretical framework set-out in the literature review.

Upon reflection on the template development, several key issues emerged. Firstly, the tentative use of a-priori codes was appropriate for this study as it allowed a loose structure to organise the data that was well-linked to the theoretical framework. Secondly, coming from a constructivist and inductive approach, this initial template did change considerably as a number of a-priori codes did not emerge strongly in the interviews and as such had to be refocussed or replaced entirely. Thirdly, the transfer of the initial coding template (v1) to the emergent template (v2) was complex. The v1 template only used data from one VA management interview and therefore the coding drawn from this data was inherently contextual to their site. When this was applied to a larger sub-set of the interviews (as identified in Stage 5 of Table 18), the management coding become nonsensical. However, during the refinement stage the emergent template (v2) was applied to two additional management interviews from different sites and therefore created a more holistic template that could be applied to the final VA management interview. This issue did not occur to any great extent with the visitor interviews as these had been applied to 5 transcripts from across the sample. In this case, the initial template (v1) provided a broader range of codes that considered contextual differences between the VA sites. The template analysis process reiterates the argument put forward by Bazeley (2009), who suggested that there must be a level of flexibility in the design and management of data analysis, particularly with regards to qualitative material.

5.5 Ethical Considerations and Research Integrity

A number of ethical considerations apply to academic research although some are particularly relevant to this study (a full list has been identified in Appendix 5). To highlight a general ethical consideration that affects the majority of academic studies, informed consent is an ongoing issue. In line with standard ethical guidelines, this research requires all participants to understand the nature of the study and the implications of their involvement. To ensure this, two safeguards have been produced to give respondents the best possible understanding of what they are taking part in. Initially a 'Participant Information Sheet' has been drafted to be made available to all interview participants, that

provides: an introduction to the research; an overview of the study; the key objectives; the format of the interview; and contact details for the researcher. An exemplar has been presented in Appendix 6, which is written in a clear, concise manner with little academic terminology to ensure clarity for participants. The second safeguard comes in the form of a written agreement of consent for interview participants (shown in Appendix 7). This is common practice in research projects and provides the respondent the opportunity to review their involvement and their rights prior to participating.

An additional ethical issue which affects the majority of research projects is the confidentiality of participants. Particularly in qualitative studies where the voice of the respondent is prevalent in the data analysis, it becomes important to address the need for anonymity to protect their views (Bulmer, 2001). This can be achieved through a series of techniques, but chief among these is giving generic 'labels' to quotes and transcripts. As opposed to using identifiable features such as names, this study will only distinguish between managers and visitors. This is to ensure the clarity of the analysis, but also to avoid confusion as to the origin of the perspective under review. Respondents will be allocated a letter proceeding their role (for example: *Manager A* or *Visitor B*) to ensure their anonymity. Basic demographic data was also be collected from the visitors to identify trends in the responses, this was then presented following their individual 'label' (for example: *Visitor 1a, Steven, Male, 18-24, UK – SHM, November 2016*).

A final ethical concern which applies to this study, was observation in a public setting. Data collection in a public environment such as a museum or gallery, can often be described as more naturalistic research. Whilst this is valuable for collecting natural interactions and events, this observation methods pose issues for participant confidentiality and informed consent (Punch, 1998). To manage this issue, written field notes detailing observations did not include identifying characteristics but rather a stream of events from my perspective. As discussed extensively by Oliver (2010), one of the core issues with observation in open spaces is the privacy and anonymity of those being observed. This study did not explicitly identify individuals or groups within the

observation, however any visitors that are then targeted for follow-up interviews were asked to authorise a consent form.

5.6 Evaluating the Research

As discussed by Cho (2017), in the absence of statistical measures for confirming results, as in quantitative research, qualitative studies require different more flexible means of evaluation. Many of the criticisms of qualitative research argue that it does not provide the rigour to match that of its quantitative counterparts. However, a range of evaluating criteria exist for qualitative study and when applied appropriately can reflect on the strengths and limitations of a study (Johnson, 2015). This thesis applied Tracy's (2010) eight 'big tent' criteria for excellent qualitative research (worthy topic, rich rigour, sincerity, credibility, resonance, significant contribution, ethics and meaningful coherence). The benefit of these criteria is that they can be applied to a variety of epistemological viewpoints and can be flexibly tailored to the needs of individual studies. While various examples of research practice have been included in Appendix 8, the eight criteria have been addressed in the following sections to demonstrate the robust nature of the data collection, analysis and interpretation of this qualitative study.

The first criterion involves addressing a *worthy topic*. Tracy (2010) argued that qualitative research needs to be relevant, significant and interesting. The growing interest and acceptance of co-creation in tourism research (Campos et al., 2015) is testament to the timely nature of this study. The objectives of this thesis add to this rapidly growing area, whilst also focussing on interactive technologies which are becoming increasingly relied upon in tourism experiences.

Qualitative studies also need to demonstrate *rich rigour* in their approach and data collection processes. As argued by Weick (2007) rich rigour is generated through suitable variety in theoretical concepts, data sources and contexts. In practice, this can refer to the use of strong underpinning theory and due diligence in the data collection. This study applied the concept of co-creation emerging from the well-established SD Logic in service

marketing/management as the theoretical base for the thesis. As has been shown in the literature review, co-creation is a burgeoning area of study and has solid theoretical underpinning which support the thesis. Further rigour was achieved through the use of four VA sites to explore the concept of technology-mediated experience co-creation. In addition, the inclusion of both the VA management and visitor perspective in this study provided a multivocal approach to phenomenon under inquiry. Similarly, a semi-structured approach to the data collection ensured that the research remained focussed and coherent both between sites and between participants.

The third criterion refers to *sincerity* in the research process. This can be achieved through self-reflexivity, honesty and transparency of the researcher with regards to the process and the emergent challenges. As discussed in Section 5.3, this study has openly discussed many of the challenges experiences throughout the research. The complexities and unexpected outcomes of the research methods and approach have been reported and, most importantly, have been translated into lessons drawn from the process. Furthermore, the records of data collection and time periods in the field provide the necessary transparency to reflect on the process (Flick, 2007).

Tracy's (2010) fourth criterion revolves around the *credibility* of qualitative research. This refers to the trustworthiness and plausibility of the findings presented throughout the thesis. The study has made use of thick descriptions and observation diaries to gain an in-depth understanding of the research setting (Jensen, 2008). While observation notes have been used selectively in this thesis, the periods of observation allowed for a deep understanding of the VA exhibitions, visitor flow and behaviours within the sites. Further credibility was achieved through the multivocality of the participants. Not only were two different actors used within the study (VA management and visitor) but particularly with the visitor interviews, a range of ages and genders were captured in the study. This provided a range of perceptions and added greater depth the findings.

The fifth criterion refers to the *resonance* to others that the qualitative study provides. Specifically, this refers to the extent to which the study reverberates

to the reader and others outside of the research study. This is achieved through the presentation of the findings and the use of descriptive writing to make the analysis acceptable and relatable to a range of audiences. Furthermore, the transferability of the findings (as will be discussed in Chapters 8) allows the study to resonate with readers out with the specific VA management field and beyond tourism as an area of study.

The sixth criterion set out by Tracy (2010) indicated a need for *significant contributions* to be made as part of excellent qualitative research. As will be discussed throughout Chapters 8, there have been a number of theoretical and practical contributions made as a result of this thesis. Namely, the development of the Technology-mediated Co-creative VA Experience model and the four building blocks of the technology-mediated co-creative VA experience interface. Practical contributions were also made through a series of VA management strategies to foster the technology-mediated co-creative experience in the VA context.

A strong understanding and adherence to *ethical* guidelines is also seen as a key criterion for excellent qualitative research. As will be discussed extensively in Section 5.5, a range of ethical issues were considered during the research and various management strategies were planned and implemented to maintain the highest level of ethical integrity.

Finally, Tracy's (2010) criteria indicate that excellent qualitative research should be *meaningfully coherent*. This manifests by achieving what the study planned to achieve, the use of methods that fit the objectives and a meaningful connection between the existing literature and the findings/analysis. Upon reflection, it is clear that the study achieved the aim and objectives that were established. The methods used throughout the study provided the in-depth perspectives and contextual richness that were needed and aligned appropriately with the constructivist underpinnings of the research. The findings, interpretations and conclusions of the study were then re-contextualised with existing research in tourism, co-creation and VA management in Chapter 8.

5.7 Reflections on the Data Collection Process

As suggested by Dowling (2012) there is a need for social researchers to be explicit in their reflexive practices across their study's, rather than merely being used as a means to demonstrate rigour in qualitative research. To reflect on the data collection and the subsequent analysis is to not only be critical of one's own decision making, but also to frankly acknowledge the challenges and pitfalls of the research journey. As Holliday (2016, p. 122) eloquently states:

“Qualitative writing becomes very much an unfolding story in which the writer gradually makes sense, not only of [his] data, but of the total experience of which it is an artefact. This is an interactive process in which [he] tries to untangle and make reflexive sense of [his] own presence and role in the research.”

Prior to the analysis stage of this research, it is therefore important to reflect on the data collection process. In particular, this provides the opportunity to chart the learning curve that, as a novice researcher, shaped the findings and subsequent contributions of the thesis. Chief among these reflections, is the need for flexibility across all stages of the fieldwork. Access to sites, gatekeepers and participants was fraught with difficulty and, as in the case of this study, required significant flexibility. During the early stages of data collection, access to the chosen VAs proved challenging due to seasonal pressures and clashes with existing evaluation programmes. Beyond this, access to potential sites were consistently delayed due to breakdowns in communication. While frustrating, this does demonstrate some of the challenges associated with visitor-orientated research. Even once access had been granted, flexibility was required in terms of operational restrictions and other administrative pitfalls. As a lesson from this research, it is critical to expect such delays and barriers in visitor research and recognise that is all part of the journey. It is also vital to be prepared to abandon plans should they prove unrealistic or unfeasible.

Another reflection relates directly to the on-site data collection and the value of practice. Despite a fully prepared pilot study and ample preparation for semi-structured interviewing, the reality of data collection in different contexts was

daunting. The approach that worked perfectly well at one site, failed to work in another. Likewise, the interview style that produced rich results with one participant led to minimal responses from another individual. A key reflection is to experiment with the methods, questioning styles and approaches throughout the study and have the confidence to adapt or tailor the approach to suit the context. Again, as a novice researcher, moving 'off script' mid-fieldwork was a particular worry. However, practicing different approaches and means of questioning was a great learning experience. In a way, it was moving to a mind-set that there are no wrong answers, and should the method take the researcher in a slightly different direction or to the outer reaches of the topic then this just adds new pieces to the puzzle. For example, only on reflection has value emerged in some of the interview responses which were originally thought of as mundane or irrelevant. While these may not be grand revelations within the study, they add personal stories or anecdotes that show the uniqueness of the participants.

5.8 Chapter Summary

The purpose of this chapter was to present the research methods that were used throughout this study. Initially, an analysis of the use and value of semi-structured interviewing and observation was provided. In line with the qualitative research approach, these methods afforded a level of in-depth insight into the individual perceptions, valued and perspectives of both VA managers and visitors. A pilot study identified a range of issues in visitor-orientated research and strategies to overcome these were subsequently devised. An evaluation of the template analysis technique indicated its suitability for qualitative research emerging from the constructivist paradigm and reflections on the research process were provided. Finally, the research process was evaluated for its quality, credibility and rigour alongside the limitations emerging from the research methods. Chapter 6 moves to the first of two findings and analysis chapters, where the management challenges and issues emerging from the data collection are presented and interpreted in relation to previous research.

CHAPTER 6. FINDINGS & DISCUSSION - MANAGEMENT CHALLENGES & ISSUES

6.1 Introduction

Chapter 6 is the first of two analytical chapters and focusses on the management perspective of interactive technology use and its role in the co-creative visitor experience. As a key actor within the co-creative relationship, the service provider (here the VA management) has a critical role in providing and maintaining opportunities for visitors to actively engage and generate their own individualised experience. This chapter analyses a series of management challenges and issues drawn from the interviews that influence the co-creation of technology-mediated VA experiences.

6.2 Management Challenges & Issues – Dominant Themes

This findings in this chapter address Research Question 1: *What is the management perspective of interactive technology use in the selected VAs?* Figure 23 provides an overview of the dominant themes emerging from the Management Challenges and Issues data. The main themes have been broken down to show sub-themes (shown in grey) that have emerged during the template analysis process. The first theme discusses the motivating factors that VA managers identified as driving their technology adoption. The second theme explores operational issues regarding technology use and management in the VA exhibitions. Finally, in the experiential expectations theme, managers reflected on what they hoped to achieve in the technology-mediated environment and how they anticipated technology influencing the visitor experience.

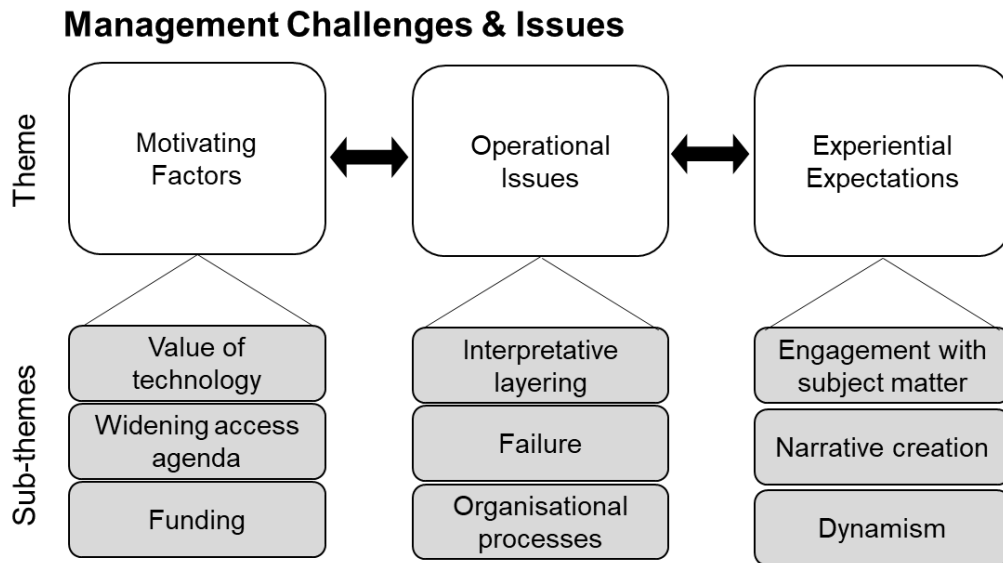


Figure 23. Management Challenges & Issues – Themes and Sub-themes
Source: Author

6.3 Motivating Factors

Within this theme a series of motivating factors from the management decision-making process were highlighted. These motivating factors can be seen as the driving forces behind VA management selecting and adopting interactive technology within their respective exhibition spaces. Many of the factors discussed in this section correlate closely with the established management challenges associated with VA research, however, the extent to which these influence the co-creation of experience have been under-researched.

6.3.1 *Value of technology as an interpretative tool*

This theme explores the perceived value that technology provides as an interpretative tool. The motivation to select and implement an interactive touchpoint in an exhibition differed considerably between sites and between the various management perspectives, however there was a shared understanding that technology posed great opportunities for the visitor experience.

The use of technology for the purpose of contextualising content or for illustrative purposes emerged strongly from each of the VA managers. There was a recurring view that technology offers visitors a means by which they can comprehend and visualise content in a clearer manner. An example of this was noted by the manager from SHM, who discussed using an interactive touch-screen to provide visitors with a frame of reference by charting the history of the site in comparison to wider historical events:

“So something fairly dry, like the history of the College in term of documentation and such like, I thought well let’s put it on a timeline, that you swipe through, you put a bit of context there about other scientific things that were happening outside the college, a bit of social context about Michelangelo starting the Sistine Chapel about the same time that this place was founded.”

(SHM, Manager, July 2016)

As discussed above, the manager highlights the importance of linking the museums’ story to notable events in social history. The application of technology for the use of comparison and to support relatability is a key tenet of an interpretative strategy (Gilbert & Stocklmayer, 2001). Similarly, this example correlates with the views of Black (2012) and Prentice and Andersen (2007) who suggest that re-creations and representations in a museum context can aid in visitor understanding by providing a link to personal histories and associated events. The discussion at SHM echo these academic arguments by using simple touch-screens to illustrate wider events that would be relatable to a wide range of visitors. As such, the technology can be used as a tool to support meaning making in the exhibition environment (Poria et al., 2009).

The use of interactive technology to link content to the personal histories and shared social context of visitors could be linked to the resource integration perspective debated in co-creation theory (Vargo & Lusch, 2004; Vargo, Maglio, & Akaka, 2008). From this viewpoint, the interactive platform could be seen as an operand resource (tangible asset central to the VA product), whereas visitors’ previous knowledge and personal histories can be viewed as operant resources (intangible resources that can be acted upon). From this perspective, the technological platform acts a conduit throughout which visitors can engage their individual operant resources. This proposition therefore

contributes to wider body of work that suggests resource integration is a critical force in the co-creation of experiences and highlights its relevance to not only technology-mediated experiences, but also to unique experiential contexts such as VAs.

In another interview, the manager at DP took this discussion further by highlighting their use of technology as a means to replace part of the product offering:

“So that was just kind of our introduction to see what we could do with virtual reality and 3D scanning but it was definitely to add value...so that's what we wanted, something that was quite dramatic, to show that it's not looking at its greatest just now, but this is what it is and why we have to do it and stuff. That some kind of interactive, both handheld and within the gallery would be the easiest way to show it.”

(DP, Manager, November 2016)

The use or adoption of technology for the purpose of replacing parts of the VA experience has had little academic research. This is particularly relevant to VAs in the heritage sector where conservation and preservation of the core resources is a critical management challenge (Garrod & Fyall, 2000; Swarbrooke, 2002). Equally, the drive to maintain a quality visitor experience alongside conservation activity is high on the VA management agenda (Connell & Page, 2009). Technology is thus well placed to offer some form of an alternative representation in the event of core resources being unavailable for public view. While in the DP example, this is a temporary measure the question arises as to the future use of the platform when the rigging is restored. The ability to refocus or develop interactives for future purpose is certainly a management decision that needs factored-in during the design stages. Nevertheless, the functionality of technology to facilitate a level of engagement with the core resource, even when parts of it are off-show, can be seen as a viable strategy for VA managers when faced with unavoidable conservation or maintenance projects.

In this case, technology is used moderately to add additional value rather than a core offering within the visitor journey. As such, visitor focus is retained on

the historical collection rather than being potentially compromised by too many touchpoints. The viewpoint is shared by the manager from DP:

“I think, it’s really good to offer digital stuff but the reason, our unique selling point, the reason our people are going to come to our museum is that authentic object that was taken into the Antarctic and the ship itself that has been to the Antarctic, I suppose that’s how we differ from the science museums...and I think still the objects and the stories behind the objects are what people, why people come to the museum...that’s how we try and use digital things, to kind of add to our objects.”

(DP, Manager, October 2016)

These discussions highlight a division between the motivations of traditional museum managers and their counterparts from a science centre environment. As noted above, the museum viewpoint is largely to use technology to complement the existing collection of physical artefacts. The focus therefore becomes enhancing the visitor experience with more dynamic methods of interpretation alongside tangible evidence for visitors. Latham (2015) argued that the presence of artefacts adds an element of ‘truthfulness’ to the experience through a tangible object that can be observed. As such, from this perspective technology can indeed enhance what is already on offer for visitors. The role of interactive platforms are subsequently to provide additional depth to largely static artefacts. In contrast, the managers at GSC highlight the lack of physical resources in a typical science-based exhibition and, as such, technology is used to replicate or illustrate content that cannot be physically presented:

“I think it’s a lot of the topics and themes perhaps some of them are quite tricky to create an electro-mechanical exhibit and I think we did sort of bang our heads against walls about ‘how can we portray this?’ and some things ultimately you do just come back round to ‘well it just has to be a touch-screen’ because of what it is you’re trying to, you know, what is the theme, what is the message of this exhibit, it’s really hard to sometimes think of a way that you can do it in a physical way.”

(GSC, Manager 1, October 2016)

As discussed above, there is an inherent challenge in science-based VAs in how they can physically present content that may not have a tangible artefact.

This view echoes the work of Horn et al. (2016) who argue that interactives are particularly well suited to the science-based attraction environment as they allow visitors to visualise complex phenomena, processes and events in an accessible way. Furthermore, in-depth interactions with a physical well-designed replication, can provoke visitors to think about and understand the 'original'. An example of this from GSC could involve a greater understanding of the respiratory system through interactions with replicated lungs and associated exhibits. This highlights a need to question the role of interactive technology within unique experiential environments and adds to current thinking in VA research which largely charts the proliferation of technologies and their benefits. The findings identified within this sub-theme would indicate that, from a co-creative perspective, technology adoption must be viewed within the individual experiential context and that the impacts of technology-use are framed by contextual factors.

6.3.3 Widening access agenda

Despite being linked to visitor expectations, this strand of data refers specifically to the motivation for widening access in VAs. Not only are VAs selecting and implementing new technologies to adapt to contemporary visitor expectations, but there has been some evidence to suggest that these technologies have been explored to attract and support diverse audiences and to make content more accessible for different visitor groups.

One particularly interesting perspective comes from the manager at SHM who discussed their motivation to develop exhibitions that presented the museum as an inclusive attraction for the general public:

“...there was a sense of constantly having to repeat your aim in this, which was very definitely moving away from a museum that was seen as: by medics for medics to a genuinely public museum, which we knew, 95% of our visitors had no medical background and it was just people off the street and that’s who we wanted to make it accessible to... so it was kind of moving from a kind of a private institutional museum to a properly public museum although it was public before, I’m maybe overstating that, but certainly in terms of the culture internally, it still had that feel of [pause] you were a little closed.”

(SHM, Manager, July 2016)

This perspective suggests a motivation to present exhibitions that are publicly accessible with content that caters to all visitor groups, not just for those with advanced prior knowledge or expertise. This is particularly relevant for SHM which houses a highly specialised anatomical collection that had previously been guarded by the Royal College of Surgeons. Interesting also, is the acknowledgement of very little prior knowledge from most visitors to the museum. An understanding that the majority of visitors to the site had very limited medical knowledge will have a substantial impact on the way the site is presented and how the interpretation is designed. This perspective adds to existing work in VA management by establishing a link between technology selection as a means of activating and supplementing prior knowledge to enhance the visitor experience. The strategic move towards a more inclusive VA experience flows through to the selection of interpretative tools within the exhibition and how these encourage engagement among varied audience groups. The change of outlook from closed, traditional museum settings to ones that are inclusive and widely accessible is reflected throughout the heritage sector (Camarero et al., 2015; Mencarelli & Pulh, 2012; Sheng & Chen, 2012).

From a co-creative perspective, Ramaswamy and Ozcan (2014) argued that leaders of tomorrow must establish strategic architectures of co-creation and place stakeholder experience at the heart of their thinking. Based on these propositions, it could be argued that the strategic direction of a VA and its approach to inclusivity could have a significant impact on the potential for experience co-creation. A well-managed strategy based upon a widening access agenda would direct the type of co-creative opportunities on offer to

visitors in exhibition spaces. An inclusive site needs to provide interpretation that caters for a range of audience types and this in turn provides opportunities for visitors to customise and personalise the content to their own specific needs/wants.

An equally important point was raised by the manager at DP. In relation to the role of technology in widening access, this participant highlights their use of interactives to support international visitors specifically:

“...we use audio visual a lot because unlike Verdant [sister attraction], where a lot of our visitors are from the local area, the majority of our visitors are international so there is a lot of who perhaps don't have English as their first language, so we want to kind of get the atmosphere of Antarctic exploration without having text-heavy...so we find that video's and sound helps with that.”

(DP, Manager, November 2016)

As highlighted above, this particular manager acknowledges that role that technology-mediated presentation can have for multi-cultural audience groups through foreign language provision (Quétel-Brunner & Griffin, 2014; Swarbrooke, 2001). However, rarely has this been viewed as a motivation to explore/adopt interactive technologies and as such marks a point of departure from the existing academic literature in VA management. Such technology cannot only act as a tool to translate exhibition content into various languages, but also has the potential to facilitate non-verbal immersion and multi-sensory opportunities. For visitor groups without English language proficiency, technology can be seen as a means to facilitate dialogue through a non-verbal interface. From the co-creative perspective, this form of technology-enhanced mediation allows visitors from all backgrounds to engage in virtual dialogue with the exhibitions, therefore providing equal opportunities for meaningful interaction in the experience.

However, challenges could be associated with this approach. If, as Minkiewicz, Evans and Bridson (2014) argue, technology is used as a personalising tool in museums to support co-creation of visitor experiences, what about technology that does not have the functionality to be translated into multiple languages? The same process of visitor engagement and interaction could instantly be

hindered by a lack of functionality that alienates international visitors. This would suggest that VA managers need to not only evaluate their interpretative provision in terms of what they offer, but also in terms of what alternative co-creative opportunities are available for non-native speakers.

In one final discussion, the manager at DP highlighted the motivation to use interactive technology for the purpose of accessibility:

“Digital interaction, is kind of what we're looking at for access, particularly being in a ship, we can't change it, we can't put disability access onto the ship, so... looking maybe into virtual reality and stuff so that everybody can see underneath, which is difficult at the moment as there are very steep stairs.”

(DP, Manager, November 2016)

The point raised in the quote above correlates with a wider trend in VA management with regards to technological adoption to support disabled access to content (Buhalis & Darcy, 2011; Goodall, 2006). The use of VR technology has the potential to overcome many of the operational challenges inherent to the product at DP. With limited access below the deck of the ship, narrow passages, steep stairwells and low ceilings, the core resource cannot safely accommodate wheelchair users or those with support equipment. VR would allow visitors to visualise and virtually explore the interior of the ship albeit from a remote location and detached from the tangible resource. From a co-creative perspective, the use of alternative technologies in the pursuit of replacement can be linked to the concept of customer engagement through active involvement and participation (Brodie et al, 2011).

6.3.4 Funding

This sub-theme focussed on the role of funding as a motivator for VA management adoption of interactive technology in exhibitions. The first quote from the manager at DP highlights the volatile funding landscape and its associated impact on the operations of the site:

“...so we only get 5% funding from the council, so pretty much all of our income kind of has to... and we have conferences and different things that we add to it, but yeah, a challenge at the moment with all the building work and everything.”

(DP, Manager, November 2016)

This raises interesting questions about the particular funding challenges associated with small/medium sized attractions that do not have the prestige or recognition of large-scale sites. The funding situations differ greatly between VAs with national significance (such as the NMS/GSC) and those with a more limited product or appeal (such as DP/SHM). The manager at DP went on to discuss a particularly innovative means of revenue generation for a period of upcoming conservation at the site:

“...just over 40'000 pounds and that was all through crowd-funding and that was within 30 days so that was really good for us. The whole rigging cost is going to be about 350'000 pounds...and we needed to get match-funding so most of them are going to be HLF grants and different things, but we couldn't, even at match-funding of like 50 grand is probably too much out of our means...so I think it's been really useful to get the money and it was successful, but we've been able to get some coverage and press and stuff.”

(DP, Manager, November 2016)

While this does not relate to funding for interactive technology adoption specifically, it does highlight the fragility and uncertainty associated with VA funding. In one sense, the financial input and dialogue between the VA and the public during the crowd-funding campaign could be interpreted as a form of co-creative activity in itself. While not experiential, the clear engagement and interaction for the pursuit of a shared goal (in this case, heritage conservation) bares many of the building blocks of co-creation. Furthermore, the shift toward innovative revenue generation practices can encourage democratic participation in the production of cultural experiences and in the case of crowdfunding, lead to a desire by funders to become heritage visitors themselves (Marchegiani, 2018).

Throughout the management interviews, it became increasingly apparent that the availability of funding has a direct and significant impact on the ability of VAs to provide enhanced layers of mediation, such as those provided by

interactive technology. It is therefore possible to connect the funding conditions and availability, with the opportunity for VA management to diversify the product and invest in interactive technologies. This then flows through to the potential opportunities for meaningful engagement, customisation and interaction that could be offered by mediating platforms. In short, while there may not be an overtly causal link between funding and experiential co-creation, there are significant implications that connect the two. As such, this finding extends current work in both VA management and co-creation research by acknowledging the challenges of limited funding on the provision of co-creative opportunities.

To address the funding constraints, a number of the VA managers cited external funding as a priority. The quote below from GSC discussed their experience of bidding for external funding and how this influenced the planning of the BodyWorks® exhibition:

“Well I think it was a very hot topic and the strapline was ‘understanding health and wellbeing in the 21st century’ so the funding all came from Glaxo Smith Kline and the Wellcome Trust, and they have an obligation to engage with the public, so we knew that there was a potential funding pot there. When you’re thinking about developing an exhibition you are obviously guessing, and securing funding is what comes first, so you need to make sure that you’re finding a topic or theme, but you’ve got something that you can take out to organisations that are interested in funding it. So, it ticked a lot of boxes with regards to the two funders that we would be approaching and that’s half the battle just getting something that they are interested in.”

(GSC, Manager 1, October 2016)

The need to target external funding sources for development was highlighted by Hughes and Carlsen (2010), who suggested that visitor spend (either through entry charges or associated commercial revenue) is often not sufficient to cover major VA developments. The drive towards generating revenue (such as ticket sales for the paid sites or membership schemes for the free VAs), has brought with it a motivation to invest in exhibition design. However, in the same way that the availability of funding can flow through to the visitor experience, the pursuit of external funding potentially raises questions about the level of influence external agencies have over the

exhibition design, content and presentation. It stands to reason that investors will have an interest in the production of the VA exhibition and may seek to take an active role in its design. The presence of additional actors with an influence over the co-creative process links to current research in the service management field that identifies emerging co-creative ecosystems (Frow et al., 2014; Vargo & Lusch, 2010). While the focus of this research remains the business-to-customer dynamic, the presence of additional stakeholders with unique motivations and vested interests in the service provision adds weight to the existence of multi-actor co-creative ecosystems in contemporary service management.

6.4 Operational Issues

The second theme from the management perspective is Operational Issues. This theme highlights the challenges and issues associated with the design, selection and day-to-day management of technology within the exhibition context. Within this theme, the managers drew attention to: the positioning of technology within the interpretation strategy; the concerns and impacts of technology misuse or failure; questions over functionality; and the diverse organisational processes that affect the design and use of technological platforms.

6.4.1 Interpretative layering

The need to choose and design various layers of interpretation came through strongly in each of the management interviews. One notable example illustrates how technology was being pursued to limit the use of textual material in the exhibition at SHM:

“...where I think we used technology well and where it came into its own, was in a few different areas. There’s quite a lot of information we knew we wanted to make available, in terms of having layers of interpretation, there’s only so much space on the wall, there’s only so much you’d want to put on the wall...I think that’s where the technology aided rather than hindered or became a distraction.”

(SHM, Manager, July 2016)

As suggested above, this manager advocated their use of technology as a means to offset another form of interpretative media, namely the information boards that traditionally dominated the exhibition space. It could be seen from an operational standpoint, that an underlying motivation to explore technology in this example was the aesthetic appeal of the exhibition. While much of the existing literature on aesthetics and interpretation revolve around cultural considerations and visitor preferences (Gao, Zhang, & Huang, 2017; Xu et al., 2013) there are parallels with the concept of experience environments and experiencescapes in the co-creation literature. As discussed by Ramaswamy and Ozcan (2014), co-creation is embodied in domains of experience that provide a landscape for engagement platforms to facilitate customers in their experiences. All elements of the aesthetic, sensory, visual and participatory environment can contribute to the successful co-creation of experience. While arguably, multiple touchpoints can offer opportunities for customisation, too many in an unplanned structure can lead to visitor distraction and a 'switching off' from the tourism experience. The importance of aesthetic exhibition design cannot be understated from an experiential perspective (Ooi, 2005). While the motivation to use technology to aid existing information is logical – the extent to which such decisions impact the co-creation of experience is less clear. It is therefore necessary to evaluate these decisions from the visitor perspective, as discussed in Chapter 7.

In association with the motivation to layer interpretation for aesthetics, another manager suggested the potential for using combinations of presentation techniques to add a degree of variety in the product offering:

“...so it’s nice to have those extra messages and something that is also quite different, so we’ve got the sculpture that’s non-interactive, we’ve got the lungs that you can inflate, very interactive and this which is a kind of different type of interactive...I think when we were choosing exhibits we wanted it to be a mix of different styles of exhibits...”

(GSC, Manager 2, October 2016)

In the quote above, the manager identifies the various layers of interpretation revolving around one central theme. This highlights a motivation to not only provide alternative opportunities for visitors to engage with the content, but also the use of multiple platforms to triangulate the message. The combination of various techniques that revolve around a defined theme could reinforce the core messages by incrementally building-up the narrative however, with the exception of Weiler and Smith (2009), there is a surprising dearth of research that questions how various layers of interpretative content contribute to the visitor experience.

In SD Logic, it is widely agreed that value only emerges when customers engage, customise or shape the product offering to their own unique needs (Humphreys & Grayson, 2008; Payne et al., 2008). If this logic were to be applied to a technology-mediated environment, it could be argued that the mere presence of touchpoints is not sufficient; it is the extent to which they can be tailored to the individual visitor. Therefore, from a co-creative perspective, variety in interpretation affords a level of visitor control that could encourage experiential co-creation. By providing various interpretative media (mechanical, print, audio/visual, interactive) throughout the experience, visitors have a small yet powerful level of free choice through which they can customise their own VA experience. This would support the premise that varied interpretative touchpoints can offer a level of visitor control that would contribute to the co-creation of VA experiences. As such, the findings within this sub-theme identify a key departure from the existing literature. While the variety and range of interpretation has been explored within the context of visitor satisfaction, this is the first study to identify interpretative layering as a management practice to support co-creative experiences.

6.4.2 Technology failure

An interesting dilemma that was raised by the VA managers, was the threat of technology failure either within their respective exhibitions or more generally across the sector. While generally, the management discussions viewed technology as a positive tool to enhance the visitor experience, there were perceived limitations and concerns associated with its adoption. Namely, the functionality of the platforms and differences in use between audience types.

A key challenge for the VA managers was the prospect of technology breaking down, losing functionality or becoming damaged. Furthermore, the difficulty shared amongst the managers was the lack of IT expertise onsite that could rapidly rectify technological breakages as they occurred. As many of the touchpoints were designed and implemented by external companies, the technological support was outside of the VA's staffing expertise. The maintenance of interactive platforms was also seen as an ongoing management challenge, as highlighted by one manager from NMS:

"I think what we've been doing on a day-to-day level is having a walk around the galleries and seeing what's broken, it's very much been about what's broken and what's needed an extra patch and where the touch screens aren't working, kind of physical things there's been a few software bugs that have been ironed out, things like that."

(NMS, Manager, October 2016)

Regular monitoring and maintenance of technology-enhanced exhibitions was seen as an important management practice. Not only to ensure that the interactives are functioning correctly, but also to protect against the negative impacts of technology failure on the visitor experience. The quote below succinctly illustrates this concern:

“I think the interaction is a bit too long it sometimes isn’t very sensitive in picking up the QR code, because it’s a QR that’s getting picked up you need to be standing a certain distance otherwise it doesn’t work, if it doesn’t work straight away people have the perception that the exhibits broken which leads to a negative opinion of the science centre in general, so it’s not the most reliable for working straight away when someone’s holding it... so I think it can have mixed results as to how effective it is as an exhibit...”

(GSC, Manager 1, October 2016)

The example from GSC above refers to an anti-smoking interactive that uses a QR code and once read, shows the users’ lungs filling with smoke to illustrate the effects of passive smoking. However, as noted by the manager, the QR technology can be unpredictable and as such the interactive sometimes fails to operate as expected. Interestingly, this manager makes the connection between the interactives failure and a negative perception of the VA as a whole. This would suggest that small failings in technology use could contribute to a negative overall visitor experience. The perception that experiences are formed incrementally through individual interactions has received considerable academic debate in experiential research. Both Gupta & Vajic (2000) and Woodside & Dubelaar (2002) view experiences as being formed in stages through the engagement of various personal, hedonic and relational factors. This would suggest that VA managers need to be aware of the impact small issues (such as touchpoint breakage) may have on the overall visitor experience.

Aside from the potential breakdown of technology once it is positioned within an exhibition, the usability of technology was also seen as a potential issue. An example of this is provided by the NMS manager with regards to an unexpected challenge arising from touch-screen technology:

“... what’s interesting to watch was the different ways different ages of people interact with the screens. So up to about, I’m gonna say about my age, but maybe even a little bit younger, I’m early thirty’s, people did the pinchy hand movement where they kind of did that [hand gesture] to zoom in, kids automatically put their hands down close and flicked it to zoom. Whereas even just a little bit older than me, people pressed the button saying ‘zoom’ and they look for a plus button. I mean some fairly high ranking members of the museum staff were baffled by the touch screen, just the physical interaction with the touch screen they wanted a button to press to make the next screen go sideways, whereas kids would swipe...”

(NMS, Manager, October 2016)

As discussed above, the physical functionality of the interactive technology can cause difficulties for certain visitors who are perhaps less familiar with the interface. Here, the technology in question operates similarly to a large iPad in that the touch-based technology is very sensitive and reactive to certain hand movements. While such conventions, like the ‘pinch’ movement to zoom in and out of content, may be second nature to certain groups, this may be beyond the capabilities of others. While this is one manager’s perspective based on their observations, it does correlate with much of the commentary about the technologically-advanced younger age groups who are much more confident in their use of interactive platforms (Pendergast, 2010). This does however pose challenges for co-creation. While Zhang, Lu and Kizildag (2017) found that complex technological infrastructures did not affect Generation Y’s ability to co-create (due to their ingrained knowledge and problem skills allowing them to overcome technical challenges), this may not be applicable to other cohorts. In reference to the example from NMS, if segments of the audience are unable to operate the technology effectively it would suggest an imbalance in capabilities. This in turn has the potential to compromise the opportunities for experience co-creation. While technology failure has been noted as a management challenge within the VA literature previously, the findings of this study extend current knowledge by arguing that the reliability and usability of technological platforms can have a direct and powerful impact on the co-creation of experience. The design and usability of interactive platforms is therefore a critical decision for VA managers. In the context of technology-mediated VA environments, this could involve greater

instruction/guidance for the use of interactive touchpoints or ‘simplified’ modes of operation that do not require prior knowledge of tactile interfaces.

6.4.3 Organisational processes

An unexpected challenge associated with the operation of technology among the VAs was the organisational processes surrounding technology design, use and management. This sub-theme identifies some apparent difficulties in creating interactives and negotiating their content between the various stakeholders involved in exhibition design.

During the management interviews it became apparent that the design and implementation of technological platforms often created differences between various individuals within the organisation. Chief among these was a perceived tension between interpreters, content editors and/or curatorial experts. An example of these curatorial differences was shared by the manager from SHM in relation to their exhibition redesign:

“...internally, we’re run by the College of Surgeons, a lot of our, you know, fellows of the College have a vested interest. And you’ve got that kind of constant dialogue about dumbing down or not, and all this kinda stuff...And a lot of that content was given to us by surgeons, and it doesn’t matter how often you say to them as part of the brief, remember this is for a lay person, this is not for people with a medical background, but they can’t help themselves [laughs].”

(SHM, Manager, July 2016)

These curatorial differences could potentially flow through to the visitor experience or even compromise the extent to which visitors engage with the interpretation. The nature of the message, its presentation and its clarity could potentially have significant implications for how it is perceived by various visitor groups. Content that is too complex, advanced or in need for substantial prior knowledge could be avoided by visitors. As discussed in Section 2.3, SD Logic suggests that experiences and their subsequent value are actively co-created through the integration of various operand (tangible and inert) and operant (intangible knowledge and skills) resources (Lusch et al., 2007; Lusch & Vargo, 2006). When managed appropriately, interpretative technology could provide an opportunity for positive resource integration leading to the co-creation of

experience. However, Plé and Chumpitaz Cáceres (2010) argued that a misuse of such resources (for example: visitors being unable to understand or engage with interpretative messages due to their advanced language or content) could equally co-destroy the experience.

This potential role conflict and clashing of perspective was even more prominent in the NMS development process. In this case, the site management outsourced some of the interactive development to an external consultancy firm and the following excerpt highlights some of the resulting problems:

“Often times the software consultant seemed to be editing the curators’ content and messages and the software companies would then rewrite what the consultant had written, so there was this biomedical content that was written by a curator with a biomedical degree which was then rewritten by someone with an IT degree which was then tweaked by some people with a design background...so what then came back to us was nonsense and there were some really fraught meetings and some difficult feedback...relations got pretty strained...”

(NMS, Manager, October 2016)

As the manager discusses, the multi-actor decision-making process posed a significant threat to the coherence of the interactive content and potentially diluted the core messages. This perhaps reinvigorates arguments about the role of the interpreter and who has control over interpretation design (Staiff, 2014). As highlighted above, the various specialisms of the stakeholders involved in the design process did not blend as well as they could have. Given the substantial investment required for interactive design, there is need for strategic dialogue to take place within the planning stages. Furthermore, this would suggest a need for creative control to be guarded by the exhibition designers in collaboration with the curatorial experts. The findings in this sub-theme highlight some of the challenges associated with multi-actor co-creative relationships. The examples shown throughout this section refer to VA management, curators and designers co-creating (or more appropriately, co-producing) an interactive platform with IT specialists and external clients. This business-supplier relationship appears to be just as complex as the business-visitor dimension that is the focus of this research. The findings of this study therefore extend knowledge into multi-actor co-creation by arguing that a

significant management challenge arises in the form of organisational processes. While much of the existing co-creation research argues that various actors work harmoniously in co-creation, the finding identified above highlight the danger of difficult organisational relationships limiting the development and implementation of co-creative opportunities that sit within the visitor experience. Similarly, this echoes the concerns raised in Section 6.3.4 with regards to input from external funding bodies and how these relationships may influence technology design and implementation.

6.5 Experience Expectations

The third and final theme in this chapter is titled Experience Expectations. In this theme, the VA managers discuss their expectations and aspirations for the technology-mediated visitor experience. The participants reflected on the potential outcomes they hope to achieve as a result of adopting technology in their respective exhibition spaces and consider how it can influence the co-creation of unique visitor experiences.

6.5.1 Engagement with the subject matter

A number of the managers were concerned about the level of meaningful engagement that visitors had with interactive touchpoints within their respective sites. An interesting point was raised by one of the managers at GSC. Arguably, this was the most technology-dense exhibitions within the study and also predominantly targets the children/families and school-group markets:

“...so there’s loads of commentary and comments about ‘are children engaged with the content or are they just pushing the buttons’ and so I think in a way, we wanted to consciously consider ‘are these experiences meaningful’ and are the buttons not the attraction themselves but they lead to something a bit more engaging. So even to just remind us, that although we want it to be hands-on, that’s not actually the reason we’re doing it...”

(GSC, Manager 2, October 2016)

As discussed above, this individual highlights a valid concern in exhibition design – whether visitors are actively engaging with the core messages or if

the focus is predominantly on the technological touchpoint itself. This concern reflects arguments in the early interpretation literature, which warned against the danger of overusing technology to the detriment of the core messages that it is meant to present (Hughes, 2001; Uzzell & Ballantyne, 1998). As the manager above suggests, the interactives should be seen as a catalyst for deeper engagement with the subject matter of the site. In the context of this study, this creates significant challenges for VA managers. Not only do they need to provide accessible opportunities for engagement, but also there needs to be an awareness that individual visitor factors, their surroundings and circumstances will influence the extent to which visitors will actually engage with those opportunities.

A further question is raised with regards to what makes engagement with technology 'meaningful' and particularly how can this be observed, evaluated or measured? As discussed in Section 3.2.1, visitor feedback and evaluation is a common activity in VA management. There is therefore a need to illuminate and understand visitor engagement with interactive technologies, as this could be seen as paramount for successful experiential co-creation (Breidbach et al., 2014).

In addition to meaningful engagement, a number of VA managers discussed how interactive technology supports visitor comprehension and understanding of the underlying messages portrayed throughout exhibitions. This emerged intensely from the science-based attractions, where visitor learning and knowledge building is a core objective. A particularly strong example comes from the NMS, where the manager discussed a new interactive that focussed on genetic splicing and the ethics surrounding genetic engineering:

“People sometimes talk about science by stealth, which isn’t necessarily a phrase I like very much but just having fun doing something where you also pick something up and I think it’s ended up not being a bad one actually, people, it’s pretty busy people seem to enjoy it, were still, the question to me which we worried about in testing and I’m curious about particularly is, are people understanding that this is a real thing that really happens...and it’s that slight question; is this too frivolous and funny or are they actually getting the ‘oh that’s pretty cool’, so hopefully we’ll find that out.”

(NMS, Manager, October 2016)

This was echoed by one of the managers at GSC who reflected on the gamification of touchscreen interactives in their BodyWorks® exhibition:

“...that sentiment comes out a lot particularly with touch-screen stuff, because most of them are what you’d call games and so there tends to be a conflict between you know is it just a game, is it all about beating the game as opposed to learning about organ donation or whatever it is.”

(GSC, Manager 3, October 2016)

As noted above, the managers raise an important point: does the interaction with the technology correlate to visitor understanding of the underlying subject matter? This can be seen as a dilemma for VA managers and exhibition designers, particularly with regards to investment in interpretation that needs to effectively present messages related to learning, knowledge and understanding (Kuo, 2017). The concern raised by both managers is not uncommon in existing VA research. As noted by Moscardo (2014), the majority of research on interpretation involves some discussion about its role in visitor learning, however the extent to which this can be causally linked is contested.

In the context of this study, the role of interactive touchpoints to stimulate comprehension and understanding provides a marked departure from existing interpretation literature. Through the co-creative lens, it is argued that technology remains an engagement platform that provides the space for unique memorable experiences. This differs from much of the early VA literature that often positions interactive touchpoints as ‘instruments for instruction’ that deliver educational content to receptive visitors. Within the remit of this study, it could be argued that interactives should be viewed as

conduits to inspire visitors and for creating awareness, as opposed to being relied upon for visitor comprehension (Tilden, 2007). From this perspective, it would be argued that, in the GSC case above, the focus doesn't necessarily need to be on whether visitors learn from an exhibit, but whether it activates their interest and a desire to know more in order to make their own individual judgements. While engagement and visitor experiences is a widely discussed area of academic research, the findings of this study contribute to these discussions by being one of the first to question the notion of engagement within the context of technology-mediated experience co-creation in VAs.

6.5.2 Narrative creation

This sub-theme identifies the importance of the attraction narrative from the management perspective. Within this theme, the importance of the story is reiterated and the idea that narratives can be created collaboratively arises as a management expectation.

Throughout the management discussions, there was a shared appreciation of the importance of the story (or narrative) that runs throughout exhibitions. The strongest discussion about the role of narrative came from the manager at SHM. As shown in the following quote, this manager impresses the importance of the story over and above other aspects of the VA product. In their opinion, the visitor preference remains an authentic informative story that is supported by original artefacts (in this case anatomical specimens):

"I mean let's face it, if you're coming in off the street as a visitor to a museum, which is about surgery or it's about specimens or it's about anatomy, I personally would be leaving pretty disappointed if I didn't find out anything about that story...so in very basic terms that influences your thinking from the outset. What's the key part of that story, we've been around five hundred years, so surgery has advanced massively... so what are the key bits of that that we want visitors to take away with them. What are the key bits that we think that visitors will be interested in?"

(SHM, Manager, July 2016)

As highlighted above, this manager suggests a responsibility to authentically present the expected story of the site for visitors. This does however reignite the argument put forward by Staiff (2014) who was critical about the power of

the interpreter who constructs the narrative and to what extent the visitor is positioned as a passive observer or recipient of selected messages.

To a lesser extent, there was discussion with one of the managers about the collaborative creation of attraction narratives. The following quote from the manager at GSC highlights their approach to the communication of health messages in the BodyWorks exhibition:

“...we wanted to make sure the message is portrayed in a way that Glasgow Science Centre likes to portray messages so it's not in a dictative or you know 'you will stop smoking' 'you shouldn't drink alcohol', you know it's more about here are the facts, we present the facts and we let people make up their minds.”

(GSC, Manager 1, October 2016)

As highlighted above, the manager reflects on a conscious decision in the interpretative strategy to present health messages pragmatically. In this case, the management focus on presenting key information in the exhibitions with an absence of value judgements. This is particularly pertinent for GSC who tackle health concerns such as the effects of smoking. While previous research on the relationship between interpretation and behavioural change has largely been reserved to ecotourism and sustainable tourism fields, there are parallels with health-based messages. Walker and Moscardo (2014) proposed a value-based model of interpretation where interpretative techniques could be used to change values and activate visitor behaviours. Similarly, Powell and Ham (2008) found that effective environmental interpretation can positively influence knowledge, behaviours and consumer attitudes.

The management approach identified in the GSC discussion would suggest that rather than using interpretation to present a dictated series of messages, they prefer to provide opportunities for visitors to link to their own lived experiences and generate their own narrative. In the context of VA management, it is therefore advisable to augment core narratives by providing opportunities for personalisation. By encouraging active dialogue within the interpretative experience and a freedom to integrate personal narratives with the core messages provided by the site, there are greater opportunities for the co-creation of memorable visitor experiences. As such, the findings of this

study enhance current perspectives in VA management by arguing that technology (as a mediating force) can assist in the co-construction of narrative, which in turn contributed to the overall co-creation experience.

6.5.3 Dynamism

This sub-theme explores the management view that the VA product on offer in their exhibitions needs to be dynamic, varied and engage multiple visitor senses. The managers discussed their aspirations to offer alternative exhibition experiences to address a range of audience preferences. Similarly, the use of multi-sensory exhibits are discussed as a means to provide higher-level engagement within the visitor experience.

A number of the VA managers highlighted their desire to offer alternative experiences to accommodate different audiences. The necessity to provide opportunities for visitors with a range of different personal interests, goals and backgrounds represented a key objective, as highlighted below:

“...we really wanted this to be an exhibition that has something for everyone, so we wanted things that young children would enjoy, things adults might find more appealing and in terms of interactions as well, so quick button pushing interactives to ones that you might sit down and spend 5, 10 minutes on.”

(GSC, Manager 2, October 2016)

As noted above, this manager highlights the potential for visitors to customise their own experience through the various interpretative options available in the exhibition. Not only is this relevant for different audience groups (e.g. adults vs. children) but also in terms of interactions (variety in length and style). The concept of customisation emerges again with the following quote from the manager at SHM:

“...right we want this to be able to zoom in, we can rotate it, we can look at any angle from any view and then we decide what are the kind of layers that we want. Ok, we’ll have skeleton, we’ll have muscle, we’ll have blood vessels, we’ll have nerves and stuff and you could have gone for more, you could have gone for less, but we thought that was probably about right for a visitor to be able to explore for themselves, get enough out of it that’s it’s of interest but not overwhelming.”

(SHM, Manager, July 2016)

As discussed in the conversation above, the manager highlights one of their newly developed interactives that allows visitors to ‘dissect’ the human body using a full-scale 3D touchpoint. The exhibit provides a level of autonomy for visitors by allowing them to focus in and explore elements of the anatomy that particularly interest them. The combination, view and focus can be tailored to each visitor providing a level of uniqueness without providing so many options that the interpretation becomes incoherent. The findings discussed in this sub-theme correlate with much of the existing interpretation literature. The practice of customising interpretation to the information needs of different audience groups has been widely discussed in the VA literature (Moscardo, 2017; Poria et al., 2009; Wolf et al., 2013). Similarly, there are definite links with co-creation in this sentiment. Consumer control, multiple choice and a recognition of the individuals’ personal context are all central components of experience co-creation. As such, the pursuit of opportunities that offer alternative/customising interpretation experiences for visitors is of critical importance when approaching the technology-mediation from the co-creation perspective.

An additional way that the VA managers encouraged a dynamic experience was through multi-sensory presentation. As noted by the manager from NMS, small design decisions can be made concerning individual interactives that increase their multi-sensory appeal:

“...it’s quite interesting when we were developing the touchscreens, most of them are touchscreens and they were designed as that, but we made a conscious effort to, for one of them, which is in Energise, we actually very much made the decision we wanted physical buttons...kids would come running over and whack whack whack, want to press the buttons...so the mechanical ones and the software interact more closely.”

(NMS, Manager, October 2016)

As discussed above, this manager highlights the conscious decision to retain tangible buttons alongside touch-screen technology. Partly, this return to physical buttons echoes the history of NMS, who championed mechanical exhibits with the infamous ‘red buttons’ that have become synonymous the local Edinburgh heritage. From a broader perspective, the blending of virtually accessible content with physical touch (afforded by mechanical push buttons) has the potential to engage various layers of sensory interaction into the visitor experience. The example provided by the NMS manager draws attention to the potential for hybrid exhibits that combine touch-screen and physical interfaces which, as a means of interpretation, can provide the opportunity for higher level of sensory interaction and engagement for visitors. The pursuit of interpretation that engages the array of visitor senses is even more prominent in the following quote from GSC:

“...the exhibits we’ve got compared healthy and smokers lungs to see the effect on lungs in terms of tar and things, then we’ve got our smokers body that shows everything that could go wrong with smoking in one disgusting sculpture, we’ve got one you can hear lung conditions and use a doctors stethoscope to listen to breathing sounds ... so it’s nice to have those extra messages and something that is also quite different, so we’ve got the sculpture that’s non-interactive, we’ve got the lungs that you can inflate, very interactive and this [touchscreen] which is a kind of different type of interactive.”

(GSC, Manager 2, October 2016)

In this example, the manager is reflecting on the interpretative media used around one theme: the effect of smoking on the human body. As discussed, the manager highlights the various techniques used to illustrate key messages through sensory engagement. In this particular exhibit, GSC predominantly use interactives that are visual, audio and touch-based, although there is

potential to expand into other sensory interactions, such as scent-based (Slåtten, Mehmetoglu, Svensson, & Sværi, 2009). The GSC manager also notes the relationship between interactive and non-interactive platforms, which echoes the sentiments in the NMS example. These discussions correlate the arguments put forward by O'Dell (2005) and Mossberg (2007) who suggested that multi-sensory interactions greatly enhance the physical experiencescape and in turn, its potential to support memorable visitor experiences.

From these perspectives, it could be inferred that VA managers perceive a need to provide multi-sensory opportunities for the purpose of creating more dynamic, engaging experiences, however the extent to which these can be considered co-creative is less clear (Agapito et al., 2013). The findings of this sub-theme therefore add to the academic literature by considering multi-sensory engagement, afforded by interactive technology, as a management practice that can contribute to the process of experiential co-creation. While there have been suggestions that multi-sensory interaction can add to value to the co-creative process (Chathoth et al., 2013), there is a need for greater understanding as to the impact of multi-sensory opportunities on the co-creation of tourism experiences from the perspective of visitors. This is addressed in the forthcoming chapter.

6.6 Chapter Summary

This chapter identified the management challenges and issues inherently linked to technology-mediated experience co-creation in a VA context. Throughout this discussion three distinct themes emerged from the management interviews: Motivating Factors; Operational Issues; and Experience Expectations. Within this analysis, it has become clear that interactive technology is seen by VA managers as a valuable tool to enhance existing collections and meet the needs for various audiences. There is a perceived need to provide a range of touchpoints and interpretative media that offer opportunities for personalisation, and technology acts as an appropriate conduit through which to achieve this. There were however inherent challenges associated with technology particularly with regards to: finance; design and; functionality. Furthermore, in a dilemma unique to the VA sector,

questions were raised as to the level of meaningful engagement afforded by technology and its impact on the core narrative of the site. These challenges highlight that while technology can be seen as a supportive tool for the co-creation of experience, there are potential issues that can compromise this objective. Chapter 7 moves to present the findings and analysis from the phase 2 interviews in relation to Visitor Perceptions and Determinants.

CHAPTER 7. FINDINGS & DISCUSSION - VISITOR PERCEPTIONS & DETERMINANTS

7.1 Introduction

This chapter addresses the second actor within the service relationship, that of the attraction visitor. Where Chapter 6 focussed exclusively on the management dimension, Chapter 7 analyses the role and perception of the visitor in the technology-mediated co-creation experience. Co-creation research has received significant criticisms for focussing on a firm-centric view and for not capturing the holistic relationship that exists between actors. To counteract this, Chapter 7 focusses on the individual perspective of the visitor (as a customer within the service relationship) to uncover the factors and determinants influencing their role in the co-creation of technology-mediated VA experiences.

7.2 Visitor Perceptions & Determinants – Dominant Themes

The findings and analysis in this chapter address Research Question 2: *What is the visitor perspective of interactive technology use in the selected VAs?* Figure 24 provides an overview of the dominant themes emerging from the Visitor Perceptions and Determinants data. As identified in grey, the themes have been broken down to show sub-themes that have emerged during the template analysis process. The first theme discusses the environmental factors that visitors identified as influencing the technology-mediated VA experience. The second theme explores individual visitor perceptions toward technology use in the exhibition spaces. Finally, in the experiential desires theme, visitors reflect on what they sought from the technology-mediated experience and what was particularly important. Each of these sub-themes will be explored individually before being re-contextualised with the management factors into a conceptual model in Chapter 8.

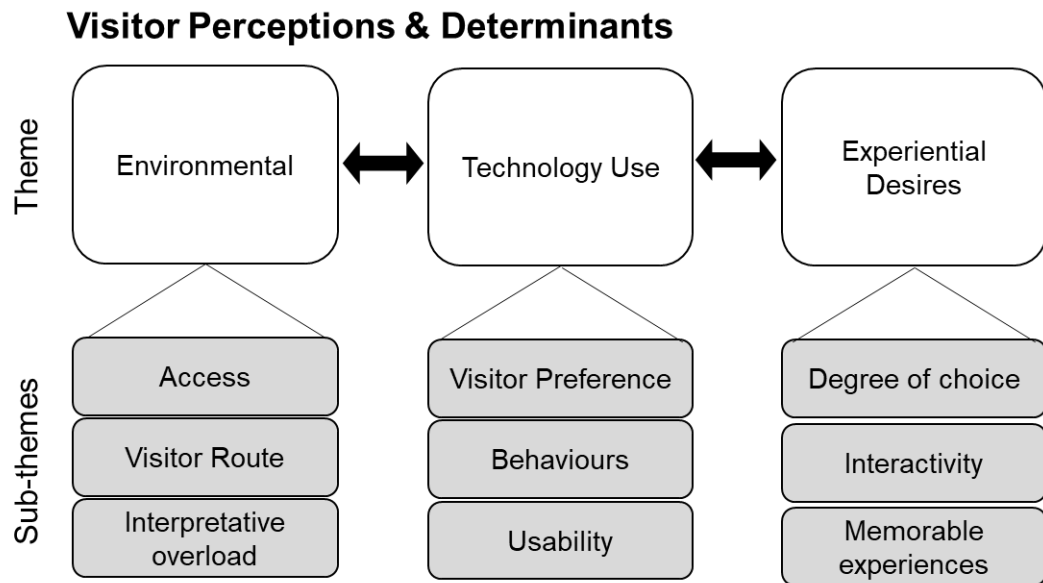


Figure 24. Visitor Perceptions and Determinants – Themes and Sub-themes
Source: Author

7.3 Environmental

Within this theme, visitors reflected on the role and impact of the VA exhibition environment on their visitor experience. Specifically, discussions emerged on how access, visitor flow and interpretative overload featured within technology-mediated environments. The following analysis highlights the perceived environmental factors that influenced the visitor experience, and questions the extent to which they impact the co-creation of such experience.

7.3.1 Access

At the most basic level, several visitors cited access to interactive platforms as either supporting or inhibiting their experience. In this context, access refers to the physical proximity visitors have with the interactive platforms within the exhibition space and the free access they have to interact with the technology. The first example comes from Maria, a participant at NMS who raised concerns about access to certain platforms during her visit:

“It was very busy this morning, we came in just as the museum opened and there were groups in the gallery. We couldn’t try out some of the screens very easily...we decided to go away and come back, and it was a bit better.”

(Visitor 3c, Maria, Female, 55+, Spain – NMS, January 2017)

As noted above, a busy period at the start of the day led to some overcrowding in their chosen exhibition which in turn limited how they interacted with some of the touch-screens. As discussed in Section 3.2.1 visitor management is a critical management challenge for VAs. Furthermore, a number of authors have suggested that overcrowding, particularly in the heritage context, can be particularly damaging to the visitor experience (Ballantyne et al., 2011; Garrod & Fyall, 2000). The quote above would take this criticism further by arguing that overcrowding in a technology-mediated environment can limit the access to engagement platforms and in turn limit the opportunities for visitors to co-create individualised experiences. The presence of large groups, namely school/education groups, and the limiting of access for regular visitors was also raised as a limiting factor by one participant at GSC:

“We didn’t spend too long in the [BodyWorks] gallery, it looked really good but as we came in, three schools came in with us. It was pandemonium and you couldn’t get near anything. We might need to come back in the holidays or later on.”

(Visitor 2h, Amy, Female, 18-24, UK - GSC, February 2017)

Amy’s experience above mirrors that of Maria’s at NMS, the presence of groups and the associated limiting of access to interactives appears to have negatively impacted the visitor experience: ‘we didn’t spend too long...we might need to come back’. Such a finding echoes the work of Wolf et al. (2013) who argued that dwell time and holding time can be heavily affected by the interpretative provision a VA offers. Furthermore, it is conceivable that with shorter visits, the potential for meaningful engagement and subsequent co-creation of the experience is reduced. This would strengthen the argument for VA managers to consider alternative and creative techniques for visitor management. Increasingly, personal technologies can be seen as a tool for VA managers to manage overcrowding in exhibition spaces and reduce the reliance on access to fixed interactives. Examples such as mobile-enabled

learning (Tan & Law, 2016) and augmented reality (Hassan & Ramkissoon, 2017) could be further explored by VA managers facilitate visitor access and provide valuable co-creative opportunities. Issues surrounding access were also recorded in the following observation note collected at GSC:

“Following a quiet morning with small family groups moving around the exhibition, two school groups of approximately 35 pupils descend into BodyWorks. They are not particularly noisy or disruptive, but there is a clear reaction from the family groups that were in the exhibition prior to the school party’s arrival. As the school students approach the interactives, the family groups rapidly made a move onto the next available one. Only as one other school group began to enter the exhibition (3 total now in the space) did one of the family groups elect to leave the exhibition quickly.”

(Author observation note - GSC, 20 December 2016, 11:35am)

While it would be challenging to causally link the presence of school groups, or indeed other visitors, with limiting the extent to which visitors co-created their experience, the issue of access to engagement platforms remains a major factor. Much of the service management literature advocates the value of customer-to-customer (C2C) interaction in experiential co-creation, however findings from this research would indicate that the social dimension was less valued in a technology-mediated environment. In the VA literature, the presence of other visitors and access is more widely discussed, particularly in research surrounding overcrowding and visitor management, however this has yet to be considered for its effects on experience co-creation. While not the sole focus of this study, the points raised here may act as a counterpoint to existing research in C2C relationships in experience co-creation. It could be argued that in some contexts (such as those mediated by interactive technology) visitors are less positive about potential C2C contact and, particularly when access is compromised, may in fact find the presence of fellow visitors as an inconvenience that limits their individual co-creative activities. As such, this study begins to contradict research within service marketing/management that argues to increased and meaningful C2C interaction can benefit the process of co-creation. In the VA context and within technology-mediated environments, it could be argued that the presence of

other visitors can be seen as negatively impacting the opportunities for experience co-creation.

7.3.2 Visitor route

As a key dimension in the environmental theme, the physical visitor route was also raised by a number of visitors as affecting the technology-mediated experience. This specifically refers to the direction and route that visitors take both between and within VA exhibitions. The structure of the visitor route was different in each of the four VAs selected for the study. NMS operates a free-flow route to move between exhibitions, GSC is largely free-flow with defined exhibitions on each of its three floors, SHM has two exhibitions separated with an atrium but allows visitors to select their route, and DP has a largely fixed route that moves visitors through a linear timeline.

In a discussion at SHM, one visitor reflects on how they perceived the visitor route and the overall design of the exhibition space:

“I really liked the way everything fitted together...having never been before we wanted to understand the history and having the trail to follow around the room was good....yeah we did get a bit confused when the projection started, we should have started with that, but we caught the end.”

(Visitor 1e, Phil, Male, 45-54, UK - SHM, November 2016)

In this interview, Phil reflects positively on the way that the exhibition is laid out and particularly mentions a desire to ‘understand the history’, which in SHM is presented chronologically but also linked to wider social events. Similarly, the benefit of some form of ‘trail’ for a first-time visitor was clearly acknowledged. Interestingly however, even with a loose structure, the visitor mentions missing part of the introductory projection (cf. p137). This acts as an overview to the History of Surgery and provides historical background for visitors. This would indicate that even in exhibitions that offer a clear visitor route, there is still potential to miss important spaces and stages. This visitor does however reflect positively on the way that the exhibition ‘fitted together’ which would suggest that a clear visitor route, in this context, was beneficial. A visitor to DP

took this idea further with reference to ‘zones’ that they felt they were moving through that linked to points in history:

“...I particularly liked how there were zones that you walked through that was like a timeline. You felt like you were clear as to where you were, but you could also sightsee on your own.”

(Visitor 4d, Michelle, Female, 55+, USA – DP, February 2017)

This participant draws attention to the clarity that was achieved through the use of a linear timeline (exhibitions presented in a chronological order) that provided a means to orientate herself. Interestingly, Michelle adds to this by advocating the value in being able to ‘sightsee on your own’ or otherwise focus in to parts of the exhibition that most appealed to the visitor. In the case of DP, where the route is linear, there is scope for visitors to return back through previous exhibitions and also attend screenings of various presentations in a central auditorium. This is illustrated in Image 8 to show the core cyclical route present in the museum, with the free choice to move backward and forward at various points within the tour.



Image 8. Visitor Route at Discovery Point Museum. Author photograph, February 2017

In another discussion, taking place in the free-flow Explore exhibition at NMS, one visitor provided an interesting contrast to the DP visitor's experience:

"Yeah, this place is amazing...the only thing I'd say is we could have done with a route to follow. We got a bit lost between galleries and wandered from animals to space...it felt a bit confusing."

(Visitor 3d, Sam, Male, 45-54, UK - NMS, January 2017)

In this comment, Sam highlights the positioning of exhibitions becoming confusing without a structured visitor route to follow. While it is difficult to compare the experiences of NMS/DP directly (NMS is free to enter, has

multiple entry points and is significantly larger than DP), the relationship between visitor route and experience is still important. The confusion associated with the visitor route, as cited above, may have significant implications for the extent to which this visitor was able to engage with the co-creative opportunities.

The presence of free-choice and the opportunity for visitors to tailor their own route (based on individual preference) correlates closely with the co-creation perspective. However, there is a fine balance to be struck between the levels of guidance provided by the VA management. In the comment from the NMS visitor above (Sam), it would appear that the lack of direction or guidance potentially compromised how they engaged with the experience. In the VA literature, Moscardo (2003) advocates clear guidance on prescribed visitor routes for the benefit of visitor management, however this could be seen as restrictive. Moving to a co-creative perspective, Etgar (2008) argued that there is a need to support individuals in their experience co-creation by providing support alongside the freedom to customise. Therefore, in a VA context, it is argued that complete visitor autonomy with regards to visitor flow and direction may limit the extent to which individuals can co-create their experience. A balance between management driven guidance (such as trails, potential/recommended routes and orientating signage) and visitor free-choice (such as the opportunity to diverge from the route or tailor it accordingly) would be optimal for successful experience co-creation. Furthermore, being able to highlight key technological platforms that provide opportunities for engagement and dialogue would be particularly beneficial for visitors to tailor their visitor route accordingly. These findings therefore challenge a number of perspectives in co-creation which advocate customers as the sole creator of both the experience, and its subsequent value. The discussion above would suggest that, as in SD Logic, the VA management has a critical role in guiding, supporting and directing the visitor within their co-creative activities and as such, must be viewed as an equally important actor within the co-creation of experience.

7.3.3 Interpretative overload

This sub-theme introduces findings from visitor discussions surrounding the range and amount of interpretative messages/media present in exhibition environments. The following extracts highlight the concept of interpretative overload, where several visitors suggested that the density of interpretative messages or the methods by which they were communicated had an impact on their visitor experience. The first quote comes from a participant at GSC who offers their perspective on the interpretative provision in the BodyWorks® exhibition:

“I think it’s great for kids, it’s a real ‘run off and explore’ sort of place but there was quite a lot going on at once. I don’t know if I could stay all day, I think my head would be banging!”

(Visitor 2e, Tina, Female, 25-34, UK - GSC, February 2017)

As discussed above, immediately this visitor links the experience as being well-placed for a younger audience and celebrates the free choice in the exhibition by being able to ‘run off and explore’. However, the participant does suggest that there is a degree of overload in the presentation. This raises questions as to how visitors can actively engage with the VA product and its associated narrative when there are multiple distractions from other interpretative touchpoints. This was also found during an early observation period within the exhibition:

“The exhibition itself has no fixed route and appears to be designed in a ‘science-mall’ style with lots of exhibits grouped together. Many of the interactives feature their own sound effects and this does provide a lot of conflicting sounds, making it quite challenging to focus during peak visiting times. Particular areas seem to create bottlenecks with great density of interactives in defined zones, this has led to large groups forming in some spots (such as the anti-smoking/lung/DNA space) where other parts of the exhibition are empty. The density of interactive touch-points in some areas appears quite overwhelming. This is definitely a science ‘playground’ environment rather than a fixed story or narrative.”

(Author observation note - GSC, October 2016, 12:15pm)

Within this theme, interpretative overload was not limited to the overuse of technology in an exhibition. As discussed in the quote below, one participant

suggested that it was an excess of printed material (such as interpretative panels or storyboards) that had an impact on her experience at DP:

“There is a lot of writing, maybe a bit too much I think, it would be good to have some other things as well. The videos were good, especially the cinema bit, but yeah, a bit intense for reading!”

(Visitor 4b, Anna, Female, 45-54, UK - DP, February 2017)

It becomes necessary to consider that interpretative overload is not isolated to technology-based exhibits. As such, there is a need to view interpretative provision as a sum of its parts rather than the impact of individual platforms. Despite this thesis being focussed on interactive technology as a tool for interpretation, it is important to question the role of technology within the larger experience environment that will include other forms of interpretation. The extent to which these different channels complement one another and combine to build an attraction narrative can have a significant impact on the co-creation of experience. McIntyre (2009) argued that there is a need in cultural attractions (museums and galleries) for quiet spaces which allow visitors to ‘bathe’ in contemplation and absorb the cultural experience that they are exposed to. This study would go a step further to argue that all VAs should consider the balance of interpretation on offer and consider, from an environmental perspective, whether there is space for visitors to reflect on the experience they are generating.

The majority of existing commentary on interpretative overload comes from industry-orientated interpretative design manuals rather than academic sources. Of the few examples where this is highlighted as a potential barrier to the visitor experience, Bramwell and Lane (1993) argued that there must be a balance between interpretative material and visual appeal so not to overwhelm visitors. Similarly, Moscardo (1996) suggested that information overload in a VA setting can result in ‘mindless’ behaviour as visitors struggle to comprehend all of the messages presented to them. Kempia et al. (2017) even went on to argue that excessive information in VA environments can frustrate and discourage visitors. The findings from the visitor interviews would appear to agree this argument.

The impact of interpretative overload has yet to be explored in the context of experience co-creation and therefore the findings of this thesis move the academic debate into new territory. In a similar dilemma to that raised in Section 7.3.2 with visitor flow, there is a need for balance in interpretative provision. There is a danger of ‘over-interpreting’ exhibitions in the pursuit of offering ample visitor choice. This could be beneficial by providing free-choice for visitors (a central tenet of experiential co-creation), however too many interpretative messages coming through diverse channels has the potential to alienate visitors or distort the exhibition narrative. The findings of this sub-theme highlight the danger of compromising experience co-creation as a result of the excessive use of interactive technology within certain spaces. This is an area yet to be considered in the technology-mediated experience co-creation literature.

7.4 Technology Use

This theme uncovers individual visitors’ perspectives toward technology use in exhibitions. Through semi-structured discussions, visitors reflected on the various factors that influenced how they used technology in the VAs. Within these discussions, three main areas emerged from the data: visitor preference for technological mediation; visitor behaviours toward interactive platforms; and the usability of the technology.

7.4.1 Visitor preference

In the first sub-theme, individuals began to express preferences for technological mediation within the VA exhibitions. The data drew attention to the viewpoints and perspectives of individual visitors as to their preferences towards technology in the VA experience. It was particularly interesting to see the disparity of views towards technology use between different visitor groups. The main finding within this theme is that visitor preferences toward technology are inherently varied and provide challenges for VAs to react to effectively.

While this study did not aim to examine specific demographic trends with regards to technology use in attractions, a number of visitors cited age difference as having an influence on their preferences towards technology.

The following quote from Wayne offers his personal view on a new interactive exhibit in DP:

“I wouldn’t say it’s really my thing, I’m probably a bit behind the times but certainly for those that have grown up with this sort of kit [motions to VR presentation/Xbox] then it makes sense to offer it. I don’t think I could work it [laughs].”

(Visitor 4f, Wayne, Male, 35-44, Ireland - DP, February 2017)

As highlighted above, this visitor’s individual view draws attention to a perceived division between ‘those that have grown up’ with sophisticated technology and those that have not. In the case above, the exhibit was an Xbox style interactive (see Images 9 & 10) that allowed visitors to virtually manoeuvre around the exterior of the RRS Discovery. The visitor could zoom-in, have a birds-eye view and then select icons that opened dialogue boxes of information about certain design elements of the ship. Interestingly, the exhibit used a handheld controller that needed a separate sheet of instructions to use. As noted above, this style of interactive may not be the most accessible for certain older visitor groups and especially those that have little experience with gaming platforms.

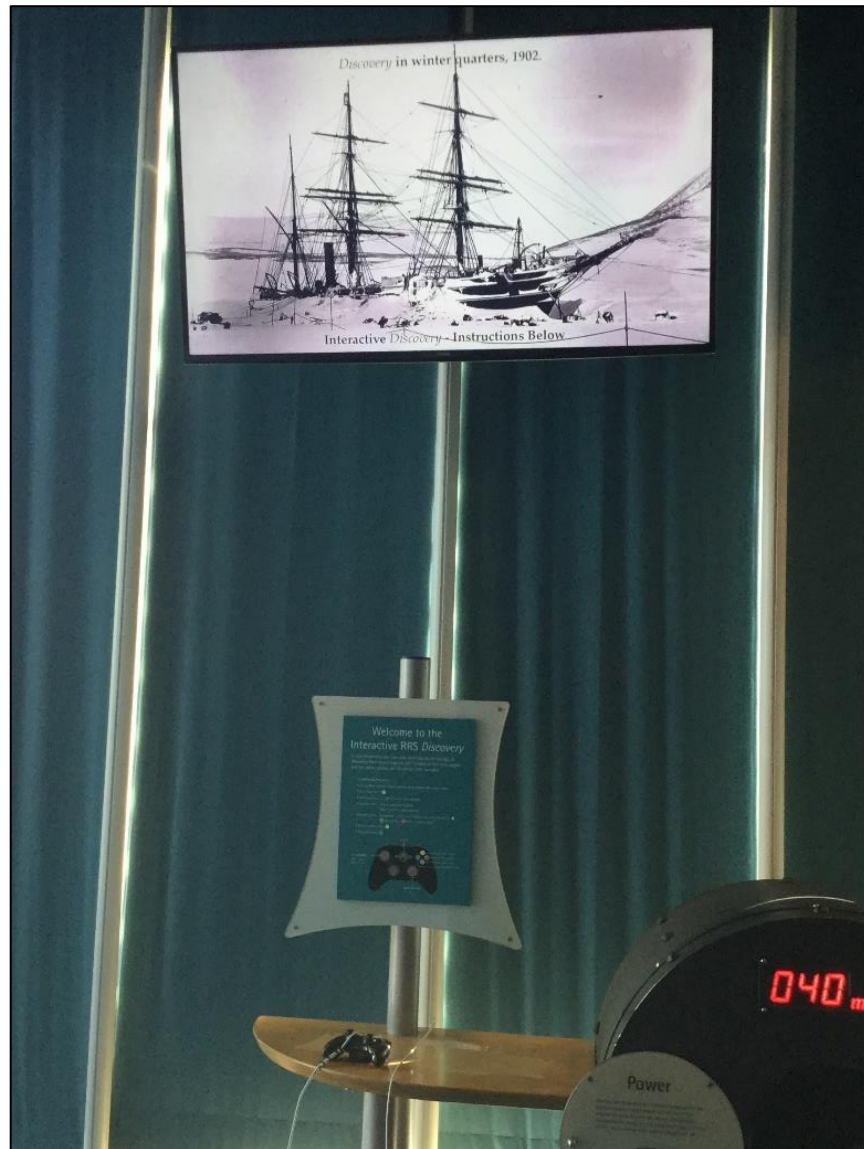


Image 9. Xbox Style Interactive, DP. Author photograph, 2016

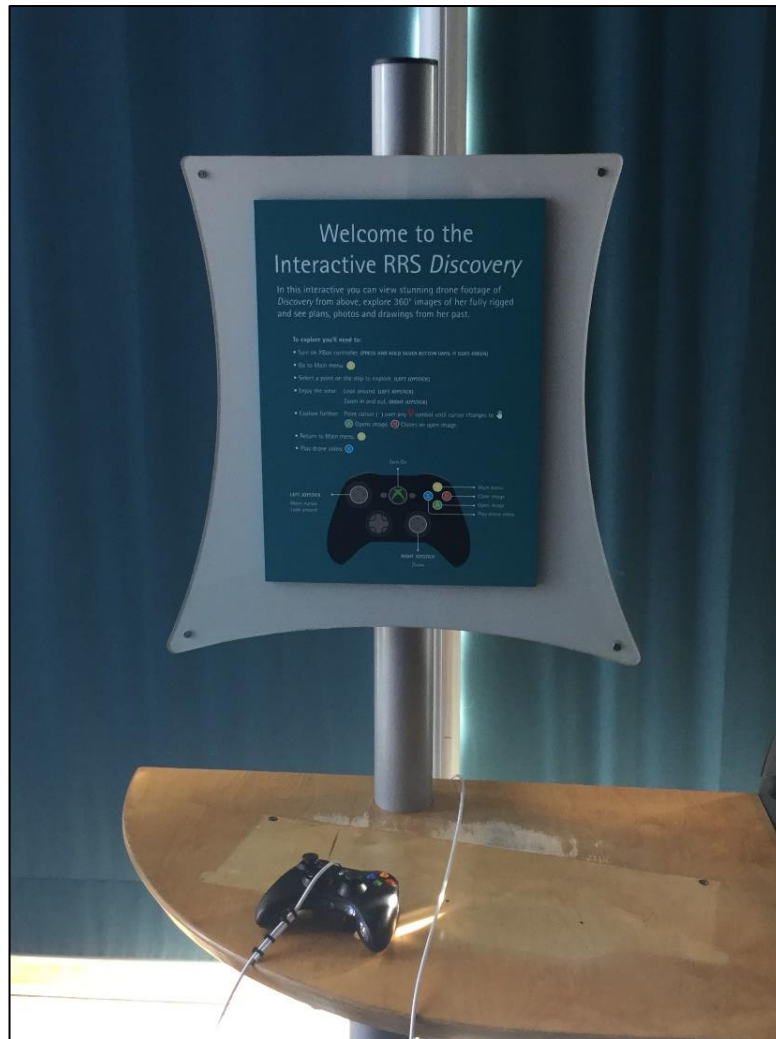


Image 10. Xbox Style Interactive (close-up), DP. Author photograph, 2016

In contrast, a discussion with a visitor to NMS (Janet) highlights a potential generational distinction that may influence preferences towards technology in a variety of contexts:

“Yeah, I’m obsessed with my tech, I get properly stressed if my iPhone goes missing, so I guess I do expect it [technology in exhibitions] and like to use it... but maybe we should step back, I dunno, I think my generation, like young people, are so stuck with so much technology that maybe we don’t take enough time away from it.”

(Visitor 3f, Janet, Female, 18-24, UK - NMS, January 2017)

As discussed above, Janet perceived her preference toward technology as being influenced by generational norms: ‘...young people, are stuck with technology that maybe we don’t take enough time away from it’. This provides

a dilemma for VAs seeking to offer co-creative experiences. From one perspective (as argued by Stuedahl & Smørðal, 2011) if younger audiences are more likely to prefer technology-mediated experiences, VAs may be more inclined to provide such opportunities, however there is a growing body of literature that cites a desire amongst younger generations to disconnect from technology in certain environments in favour of more reflective 'isolated' experiences (Dickinson et al., 2016). This sentiment appears to be suggested in Janet's quote above '...but maybe we should step back'. This then raises questions as to whether VAs should minimise the technological provision in certain spaces to cater for this trend. Beyond this, it should be noted that there are inherent difficulties with generalising visitor preferences solely on generation. The co-creation literature supports this by stressing the individuality of visitors and their needs/wants in experiences.

In addition to individual preferences, a number of visitors cited the group that they visited with as having a significant impact on their preferences toward technology. An example of this was provided by a participant at NMS who reflected on two visits they had made to the same exhibition, but in different visitor groups:

"It's funny, when we came before with the kids, we were at every touch-screen and playing with stuff. They just gravitate towards it and we were looking at everything. But today, with just the two of us [two adults] we've just wandering around and taking things in...we're a lot calmer and slower today which is nice."

(Visitor 3d, Sam, Male, 45-54, UK – NMS, January 2017)

This would suggest that visitor preferences toward technology can in fact shift and reconfigure based on the visitor grouping that they attend the VA with. As noted by Sam above, the presence of children in the group altered the visitor preference for technology from something they would typically avoid to something they sought out for its perceived educational value. In examining this data within the context of co-creation, it would add weight to the argument proposed by Verhoef et al. (2009) that customer perceptions and preferences can be externally influenced and can shift depending on contextual factors (such as different visitor groups). This does however pose difficulties for VA

managers with regards to how they plan, design and implement exhibitions. If visitor preferences toward technology can indeed reconfigure based on visitor grouping, this potentially could create numerous combinations of needs/wants that the VA exhibition would need to address and cater for in the pursuit of a co-creative experience. Such an argument supports the advice proposed by Calver and Page (2013), who argue that VAs must constantly be researching their visitors in an attempt to uncover their complex preferences and not assume needs/wants of market segments.

Finally, there was an interesting perspective offered by Sarah at GSC. This individual was the only one to specifically refer to staff in relation to technology preferences:

“Yeah, I think it’s sort of expected at a science centre...I’m not sure, I think there’s sometimes too many screens and stuff. I personally would prefer to hear from staff or maybe go to talks about science...I felt like there was maybe too much [technology].”

(Visitor 2c, Sarah, Female, 55+, UK – GSC, December 2016)

While little can be drawn from one individual quote from one participant, the unique nature of this viewpoint is in itself valid. As noted throughout this thesis, the human resource is not a key focus of the research, however Sarah’s desire for staff interaction provides an interesting counterpoint to technology-focussed views. As another engagement platform that can contribute to the co-creation of experience, it may be necessary for future research to explore the interface between technology and the human-resource within the context of visitor preferences. It may also be particularly interesting to note that this individual sought personal interaction in a science centre which, as the most technology-enhanced site in the sample, was a surprising finding. Previous research that focusses on science centre experiences highlights the proliferation of technology in science-based experiences for the reason that scientific phenomena are often difficult to present by other methods. Sarah’s view that greater staff-visitor interaction would be beneficial, challenges traditional perspectives on the use of technology in science centres and encourages VA managers to think about the co-creation of experience as a dynamic process. A key finding drawn from this sub-theme is an awareness of

not only the individual preferences of visitors, but the extent to which these can reconfigure based on external factors (such as their visitor grouping). While the VA management literature does indeed acknowledge visitors as individuals with their own needs, wants and values, the impact of visitor grouping on technology-mediated co-creation has yet to be explored.

7.4.2 Behaviours

The second sub-theme emerging from Technology Use concerns visitor behaviours toward interactive platforms. Specifically, a number of visitor discussions highlighted various behaviours that visitors exhibit when engaging with platforms. Furthermore, observation in the exhibition spaces began to indicate dominant behaviours with regards to how visitors approach, use and manoeuvre between various touchpoints. In the first quote from DP, Anna reflects on her behaviour toward interactive technology when she visits attractions:

“I have to say, I don’t tend to use it [technology] very much....I wouldn’t say I avoid it, but I don’t spend long using it...If I had the choice between looking at something real or using one of the screens, I would definitely be going for the real thing.”

(Visitor 4b, Anna, Female, 45-54, UK - DP, February 2017)

As noted above, Anna prefers tangible objects over technology-mediated presentation. However, her perspective about her behaviour toward the platforms is very particularly interesting: ‘I wouldn’t say I avoid it, but I don’t spend long using it’. This furthers the arguments put forward by Benckendorff et al. (2005) and Sheldon (1997) who suggested that the acceptance of technology in leisure and tourism settings is inherently personal, and acceptance behaviours can be influenced by individual tourist attitudes and preferences. A similar view is offered by Linda at SHM who reflects on her experience of technology use at the museum:

“Well, I think it’s good to have the technology, but I still prefer to see real objects! That’s why we came to see the anatomy but it’s also good to offer different things. I don’t think it’s [the exhibition technology] made a big difference to me but maybe for younger people it does.”

(Visitor 1f, Linda, Female, 45-54, Germany - SHM, November 2016)

In the quote above, Linda largely agrees with the argument put forward by Anna at DP; she doesn’t perceive technology as having a major impact on her visitor experience, but doesn’t completely reject it either. Interestingly, both participants cited the importance of ‘real things’ or ‘objects’ within the experience. These perspectives would agree with the arguments surrounding the presence of original artefacts in the VA setting. As suggested by Latham (2015) the presence of tangible objects, particularly in a heritage context, can often represent a major motivation for a visit to an attraction. However, from a co-creative perspective, tangible artefacts are largely static, protected items which visitors cannot personalise or interact with. This reinforces the view that technology can be used as a supporting tool to enhance existing collections and provide a means for visitors to interact with the collection (Benckendorff et al., 2005; Moscardo & Ballantyne, 2008).

A range of visitor behaviours toward interactive technology were observed throughout the fieldwork, however the following observation note identifies two contrasting behaviours that were observed at DP:

“One visitor group (2 adults + 2 children) enter the ‘Men of Discovery’ exhibition. While the children gravitate towards a nearby glass case the two adults freely move around the space. What is particularly interesting is the totally different behaviours the adults display towards the interactive exhibits. The adult male spends all this time using the first interactive touch-screen. The female adult moves between the glass cases and the artefacts but chooses not to approach the interactive technology at all. The two contrasting behaviours within an empty gallery and within one visitor group show the significant differences between visitor behaviours and use of interactive technology by different visitors.”

(Author observation note – DP, 21 January 2017, 2:20pm)

In addition to the observation above, an interesting behaviour was discussed by Tony at NMS, who reflects on his use of technology during VA experiences:

“I tend to stand back and let the kids play with them [the touchscreens], I’ll maybe help them when they need but I don’t usually get involved.”

(Visitor 3a, Tony, Male, 35-44, Russia – NMS, January 2017)

Both the observational data and the quote from Tony at NMS would correlate with the early findings of Stewart et al. (1998) who identified four distinct visitor behaviours toward interpretative media in a VA context: ‘seekers; stumblers; shadowers; and shunners’ (cf. p89). In the DP observation, both ‘seeker’ and ‘shunner’ behaviour was observed whereas, in Tony’s case, he appears to exhibit ‘shadowing’ behaviour towards technology. He approaches touchpoints to support other visitors (his children) in their engagement rather than being actively involved himself. While other categorisations of visitor behaviour exist, the example above poses significant challenges for VA managers who are hoping to foster co-creative experiences. Active participation in the service offering is seen as a central tenet of co-creation (cf. p43), therefore if visitors exhibit passive behaviour towards interactive touchpoints (such as the ‘shadow’ or ‘shunner’ behaviour identified above) how can they actively participate in the experience? As such, a key finding of this sub-theme is the notion of avoidance in technology-mediated experience co-creation. While much of the co-creation literature assumes that visitors will engage with technology for the interactivity that it offers, the findings above suggest that individuals can also actively avoid technological mediation in the pursuit of other sorts of experience. The challenge for VA managers is to provide suitable opportunities to accommodate a range of visitor behaviours whilst not overloading visitors with content and interpretation.

7.4.3 Usability

The final sub-theme refers to visitor perceptions toward the usability of technological platforms in VA exhibitions. Within the visitor discussions, several issues were raised as to the user experience of various platforms and in particular their functionality as interactive touchpoints. While there was both positive and negative views shared throughout the interviews, the main issues revolve around the touch-based interface, the duration of presented content and the presence of instructions/visitor guidance.

The first comment from Paul below, provided insight into a negative experience with the 'Collection Cascade' exhibit (cf. p138) at NMS:

"It [the cascade] looked really nice but I don't think it worked very well. We were just hitting items and we didn't really get it...also someone else tried to use it next to us and it couldn't cope with multiple people using it at once, it's a shame."

(Visitor 3h, Paul, Male, 55+, UK - NMS, January 2017)

As discussed above, there were a number of criticisms relating to this particular exhibit. Initially, a lack of instruction or supporting information led to confusion as to the purpose of the exhibit and how to use it. Furthermore, Paul highlighted that when multiple visitors engaged with the interactive, it did not function as expected. While there are a multitude of reasons why an interactive touch-point may not function as expected, the main issue arising from the discussion above is the lack of instruction surrounding the operation of the exhibit. As discussed by Vargo and Lusch (2008a), service providers need to adequately support customers in the co-creation process to suitably engage their operant resources (such as skills and knowledge). The quote above would suggest that the engagement platform was offered, but a lack of supporting guidance compromised its usability for visitors. As such, this led to visitor confusion and potentially limited the extent to which the visitor could meaningfully engage with the platform and its content.

Interestingly, the following quote also from NMS (but referring to a different interactive exhibit) presented different issues:

"I thought they were really easy to use. The instructions were clear and the screen was sensitive so everything moved when it was supposed to. The only thing I would say is the text was a bit small and disappeared quite quickly, I don't think I managed to read everything."

(Visitor 3e, Lola, Female, 35-44, USA - NMS, January 2017)

In this example, Lola had a different experience. She found the instructions were clear and the touch-based sensitivity was appropriate for her groups use. However, she highlights the presentation of the content as being a challenge for usability: 'the text was a bit small and disappeared quite quickly'. This would suggest that the physical usability of the interactive was satisfactory, however

the design of the content limited the extent to which Lola could engage with the message. This begins to reignite the debate surrounding the appropriateness of technological platforms for presenting key messages in the VA experience. From a co-creative perspective, failures in the usability of interactive touchpoints (such as those identified in Lola's experience above), have the potential to compromise the key messages which may negatively impact the visitor experience. This correlates with recent work by Benckendorff et al. (2014) who raised concerns over the adoption of advanced technology that doesn't deliver the appropriate content in VA environments. Similarly, failings in the technological platform have the potential to co-destroy the visitor experience through a misalignment of resources (visitor actions with an engagement platform that do not provide a mutually beneficial response). Such an experience is identified in the final quote from Karl, who reflects on his use of an anti-smoking exhibit located in the BodyWorks® exhibition at GSC:

"It was a good idea to try and show the effects of smoking, but it didn't quite work for me. I think I was too tall or maybe wasn't standing far enough back as the lungs kept disappearing and then there was just smoke [on the screen] billowing from nowhere. I preferred the other exhibit where you could inflate the lungs, I think it was a bit better."

(Visitor 2f, Karl, Male, 25-34, Ireland – GSC, February 2017)

This is particularly interesting considering the concerns raised by the VA management at GSC, who were worried about the usability of their anti-smoking exhibit (cf. p192). From Karl's perspective, the premise of the interactive exhibit was valuable, but the implementation lacked the necessary usability. In parallel with the concerns raised by management, Karl's experience of using the exhibit was inhibited by his positioning in front of the camera and perhaps a lack of instruction with regards to the use the QR code. Because of this interaction, he goes on to highlight his preference for a simple mechanical exhibit that allows visitors to inflate replica lungs. This example would suggest that simple mechanical interpretation was preferred and the complex usability of the technology-based exhibit led to a negative impression for the visitor. This reignites criticisms put forward by Stevens (1989) who argued that overly advanced technological platforms can indeed compromise the core messages that the VA is aiming to convey. While the usability of

technology has received considerable research, it has yet to be identified as a mitigating factor in the co-creation of experience in VAs. In summary, despite the benefits and opportunities offered by technology, its poor design, functionality and/or usability can inhibit the co-creative process and the transferability of the core VA message.

7.5 Experiential Desires

The final theme in the Visitor Perceptions and Determinants data concerns experiential desires. In the same way that the VA managers identified their expectations for the technology-mediated experience, visitors were asked what they sought from VA experiences that feature interactive technology as part of the product offering. Within this theme, three sub-themes were identified: degree of choice; interactivity; and the depth of the experience. There are similarities with the views of VA managers in some of these categories and where appropriate these have been linked. There are however some differences in what visitors desire from technology-mediated experiences. These provide an interesting contrast between the perspectives of the two actors in the co-creative relationship.

7.5.1 Degree of choice

In the first sub-theme, visitors reflected on the degree of choice that was on offer in the VA exhibitions. This particularly refers to the visitor perception of the variety of interpretative opportunities present in exhibition spaces. From these discussions, two clear perspectives emerged. The first sees a greater degree of choice as preferred by visitors, whereas the second argues for a limit to the range of interpretation on offer.

In the first quote from NMS, Sam is particularly satisfied with the degree of choice on offer within the museum:

"I think it's great to have different spaces and exhibits to cater for everyone. We're quite a big group and lots of different ages, so I'm really happy that the museum has something for everyone."

(Visitor 3d, Sam, Male, 45-54, UK - NMS, January 2017)

As noted above, Sam particularly finds the variety of spaces and exhibits valuable to meet the needs of his visitor group. From this visitors' perspective, the presence of different age groups increases the need for greater choice in the exhibition. The need to cater for various visitor groups and provide ample choice in the interpretation of VA exhibitions is well documented in the VA literature (Hughes et al., 2013; Poria et al., 2009; Taheri et al., 2014), however the visitor perspective toward the degree of interpretative choice in relation to experiential co-creation is less understood. As noted above, the provision of 'different spaces and exhibits to cater for everyone' was particularly valued and this can be achieved through the provision of free-choice throughout the visitor experience. Another visitor, (Susan at GSC) took this idea further:

"...I'm always looking for places that offer different things. I think it's important to have a choice...it's great to have the technology but are there other things to do? It makes the day a lot more interesting."

(Visitor 2b, Susan, Female, 18-24, UK – GSC, December 2016)

Both quotes above would suggest that a degree of choice is necessary and within this, a range of different interpretative media. As discussed by Weiler and Walker (2014) effective interpretation must be enjoyable and varied to create an engaging experience. Similarly, from the co-creative perspective, embedding free-choice in the service offering is crucial for providing opportunities for co-creation (Etgar, 2008; Morgan, 2006). As such, the findings above agree with previous research advocating free-choice in the visitor experience as a factor influencing co-creation (such as the work of Moscardo, 2017).

However, as discussed in the management challenges and issues (Chapter 6), the lack of funding, complex organisational processes and associated management issues would make this incredibly difficult to achieve consistently across VAs. The findings of this study would suggest a gap between the theoretical foundations of experience co-creation and its operationalisation.

While free-choice within experiential contexts may be highly valued by visitors (as was evident in this study), significant questions are raised as to how VAs can accommodate this in light of the management challenges and issues identified. An additional finding is the need for VA managers to consider smaller opportunities for integrating free-choice into the visitor experience. By integrating ‘moments’ of free-choice and flexibility, visitors can begin to shape the activities that they engage with, whilst also offering a realistic product from the perspective of VA management.

Throughout the visitor discussions, there were examples of an alternative view to those shared above. The following quote from Simon at DP was more hesitant about excessive interpretative choice in VA experiences:

“I’m not sure, I think sometimes museums offer too much. I can be a bit overwhelming... I really like here [DP], it’s simple but you get a real feel of the history. I’m not sure you’d get that if it was jam-packed with tech or shows or videos.”

(Visitor 4a, Simon, Male, 45-54, UK – DP, February 2017)

In an interesting departure from the earlier quotes from NMS & GSC, Simon was more reserved with regards to the level of choice offered in VA experiences. From his perspective, the presence of too much interpretation could ‘be a bit overwhelming’. This reiterates the variety in visitor perceptions toward the level of choice that is needed and desired within VA exhibitions. This would agree with the argument put forth by Voase (2002) who suggested that there is a danger of ‘consumer fatigue’ as a result of overly information-rich VA experiences. The views shared above have definite parallels with the management motivation to provide dynamism in the visitor experience. As identified throughout the findings, there is a fine line between providing engaging opportunities for co-creation and over-interpreting exhibition spaces.

7.5.2 Interactivity

The second sub-theme discusses the desire for interactivity in the technology-mediated experience. Specifically, the findings reflect the visitor perception toward their expectations toward opportunities for interaction and how important interactivity features within their visitor experience.

The first quote comes from Jordan at DP, who reflects on the need for interactivity and freely available information in museums:

“I think it’s really important to have the option to find out more by using the tech. We’re so used to having information at the touch of a button, it only makes sense to have that in museums.”

(Visitor 4e, Jordan, Male, 18-24, UK - DP, February 2017)

As highlighted above, Jordan mentions the value in being able ‘to find out more by using the tech’. As discussed throughout this thesis, the ability for visitors to control and customise the product offering they receive is paramount for the successful co-creation of experience (Etgar, 2008; Moscardo, 2017). As such it is important for VAs to provide ample access to supplementary information as a means for visitors to customise the content. In addition, Jordan draws attention to the wider social trend of rapid, easily accessible information (‘used to having information at the touch of a button’) as having a bearing on his perspective toward interactivity in VAs. As termed by Coussement and Teague (2013), the ‘constantly connected consumer’ has become accustomed to rapidly available information due to the easy access of the internet and smartphone-enabled applications (Sawhney et al., 2005). It is conceivable that this need for instant access to information and feedback has gradually bled into leisure settings such as VAs. As such, it is necessary for VA management to recognise this growing trend and acknowledge such expectations in their exhibition design and interpretative planning. The need for interaction throughout the visitor journey is also extended by Laura at GSC:

“I like to feel involved. When I’m at a museum, even if I’m just walking around, I always use the screens...I also like to use the apps and podcasts, I travel a lot so its good to be able to use things on the move.”

(Visitor 2g, Laura, 35-44, Italy – GSC, February 2017)

Initially, Laura makes a clear statement about the need to ‘feel involved’ in the VA experience. From a co-creative perspective, involvement is an integral part of the process and the means by which visitors can become involved in the VA experience is through various levels of interaction afforded by technological platforms. This echoes the work of Ramaswamy and Ozcan (2014) who argued

that technology can support ‘environments of interaction’ within which, customers can co-create individual experiences. Laura’s comments also referred to interactivity beyond the confines of the on-site visit. By using ‘apps and podcasts’ it is possible to extend the VA experience both into the pre- and post-visit stages. As highlighted by Payne et al. (2008) it is important to consider the preparation and reflection stages of the customer journey as further opportunities for experience co-creation. For VAs this is particularly important in a challenging operating environment that is so often mediated by social media (Leask, Fyall, & Barron, 2014). While this study did not exclusively aim to explore mobile technology in the VA context, there is potential for future research to apply the factors identified throughout this thesis both to handheld media and beyond the in-situ visitor experience where this study is based.

Interestingly, from the visitor perspective, a desire for interactivity went beyond just the technology-mediated platforms (such as touch-screens or presentation). One example comes from a discussion at NMS:

“For us it’s been great, there’s loads to touch and watch and things. Particularly for young kids, I mean they won’t really understand what the screens do but there’s lots of, you know, textures and building things to keep them occupied.”

(Visitor 3g, Rachel, Female, 25-34, UK - NMS, January 2017)

As discussed above, Rachel identifies the mechanical exhibits (building things) and sensory/tactile exhibits (textures) as particularly valuable to their visitor group. Rachel’s comments above reinforce the need for the servicescape to be carefully considered as part of the service experience. In particular Benckendorff et al. (2005) identified a distinction between high-tech and high-touch interpretative experiences and the varying visitor preferences for each. Despite this study being based on technology-mediated experiences, it is important to recognise the various other interactions that occur within VA environments alongside technological touch-points. A key finding therefore is a widening of the concept of interactivity within technology-mediated experience co-creation. The findings would suggest a need to consider the complex web of interactions that can be supported from various tactile, virtual,

sensory and ambient engagement platforms that often exist within VA environments.

7.5.3 Memorable experiences

The final sub-theme within the Experiential Desires theme explores visitor perceptions about what encourages memorable visitor experiences and specifically how the presence of interactive technology features within lasting memories of the VA experience. In the first quote, Tom reflects on what he'll take away from his visit to GSC:

“There will be loads I’ll remember from today. The hamster wheel and the running machine, we must have done them both about 10 times...I’m not sure I’ll remember all the screens, but we certainly used them.”

(Visitor 2a, Tom, 18-24, UK – GSC, December 2016)

While there may be a degree of temporal bias to the quote above (what is remembered at the immediate end of a tour may not be remembered post-visit), it's particularly interesting that Tom cited the mechanical exhibits as being more memorable than the technology-mediated platforms. While, in the GSC case, many of the touch-points required physical interaction (e.g. touch screens and Kinect® technology), these appeared to be less memorable than the mechanical exhibits based on physical activity (e.g. running, strength and balance). This supports the findings of Minkiewicz et al. (2014) who argued that physical interactions in the attraction space are particularly important for the co-production of visitor experiences. However, as discussed throughout this thesis, the individual nature of visitor experiences clearly indicate that what may be memorable to one visitor may not be memorable to another. A key finding therefore is a reframing of technology-mediated experience co-creation to consider the continuous process of actions, reactions and reflections that contribute to memorable visitor experiences. Furthermore, these findings reinforce the subjectivity of memorability in experiential co-creation research which has yet to receive significant academic attention. The following quote from Mick at SHM demonstrates this:

“I’ll definitely remember the body at the start with the projector [cadaver]. It was something totally different and helped a lot being able to see how the surgery was performed...the organs [specimens] all started to look the same after a while but yeah the projection was my favourite.”

(Visitor 1g, Mick, Male, 25-34, UK – SHM, November 2016)

In contrast to the views put forward by Tom at GSC, Mick identifies one of the interactive platforms in the SHM exhibition as the most memorable component of the visit. The value in the technological platform was clearly its power to illustrate the events and make them more relatable to this particular visitor (Poria et al., 2009). With greater understanding and illustration of the content, it is argued that the experience can become more memorable for visitors. Furthermore, Kim, Ritchie, and McCormick (2012) identified novelty (in particular uniqueness and experiencing something new) as being one of the seven factors influencing memorable tourism experiences. Mick’s perspective above would appear to agree with this: ‘it was something totally different’. Interestingly, Mick was less focussed on the physical artefacts (the specimens) in favour of the story and the history that surrounds them. This is a departure from much of the VA literature which argues that physical museum artefacts are the most important aspect of the visitor experience (Latham, 2015; Wanhill, 2009a, 2009b).

The findings presented above, would support existing works in SD Logic which argue that the more co-creative an experience becomes, the greater its chances of being memorable in the mind of the visitor. Additional research is however needed to evaluate the extent to which co-creation involving various interpretative tools can lead to memorable experiences. In another discussion, Jake from NMS reflects on how he will remember his visit:

“I really liked how everything fitted together, all the galleries link well and I think there are a few that I’ll remember...It’s great to see the museum renovated too, it’s amazing.”

(Visitor 3b, Jake, Male, 18-24, UK – NMS, January 2017)

The discussion from Jake above suggests that rather than one specific exhibition or interaction being overly memorable, it is the collective experience

that is more prominent for him. Such a sentiment correlates with the findings of Gupta and Vajic (2000), and Woodside and Dubelaar (2002) who argued that tourism experiences are inherently organic and develop incrementally. From a co-creative perspective it is therefore necessary to identify the range of opportunities for engagement within the incremental visitor experience, this in turn can positively impact on how memorable the experience can be (Chen & Rahman, 2018). Interlinked with this, is the need to consider that VA narratives incrementally build throughout the experience. As argued by Tung and Ritchie (2011: p1373), *“storytelling acts to both consolidate and recover experiences from memory”*, therefore to truly provide memorable visitor experiences in a VA context, it is argued that the provision of a strong narrative is crucial. As such, an additional finding drawn from this sub-theme is the powerful role that technology can have in the co-construction of VA narratives that sit within the wider co-creation of experience. While largely unique to the VA context, this is a new area of study that has yet to be acknowledged within the co-creation literature and provides a starting point for future scholarly work.

7.6 Chapter Summary

Chapter 7 presented and analysed a range of visitor perceptions and determinants of interactive technology use in VA exhibitions. As the second actor within the co-creative relationship, it was critical to capture the visitor perspective within this research. Where Chapter 6 questioned the motivations and challenges for VA managers in designing, selecting and implementing technology in VA exhibitions, Chapter 7 provided a counterpoint by exploring how visitors both reacted to and felt about the technology as part of their visitor experience. The visitor perspective presented three main themes: environmental; technology use; and experiential desires. Each of these have been explored within the context of the VA management literature and co-creation theory to create generate nine factors that influence the co-creation of technology-mediated VA experiences. Chapter 8 synthesises both the management and visitor factors into a conceptual model to bridge the two different actors within the co-creative relationship.

CHAPTER 8. CONTRIBUTIONS AND CONCLUSIONS

8.1 Introduction

The purpose of this chapter is to bring the factors from both the VA management and visitor perspectives together into a conceptual model. Chapter 6 identified the key challenges and issues associated with technological-mediation in VAs in the pursuit of experience co-creation. Similarly, Chapter 7 analysed the visitor perspective of technology use in a range of VA environments and identified the factors contributing to experience co-creation from the perspective of visitors. Chapter 8 synthesises and concludes the findings presented in the analytical chapters and considers the key contributions that have been made to both theory and practice. A conceptual model that bridges the two actors prominent within the study is presented and four building blocks that facilitate the technology-mediated co-creative VA experience are identified. Furthermore, this chapter re-contextualises the findings of this thesis into wider experiential research and identifies the key implications for VA management practice. Finally, the chapter summarises the contributions to knowledge that this thesis has provided and indicates avenues for future research.

8.2 Conceptual Model

This section presents the Technology-mediated Co-creative Visitor Attraction model drawn from the management and visitor data analysis. As a key contribution of this thesis, the model is segmented and discussed to highlight both its originality and significance to contemporary tourism research. As shown in Figure 25, the conceptual model identifies the VA Management Challenges and Issues alongside the Visitor Perceptions and Determinants, and highlights the key concepts drawn from the study.

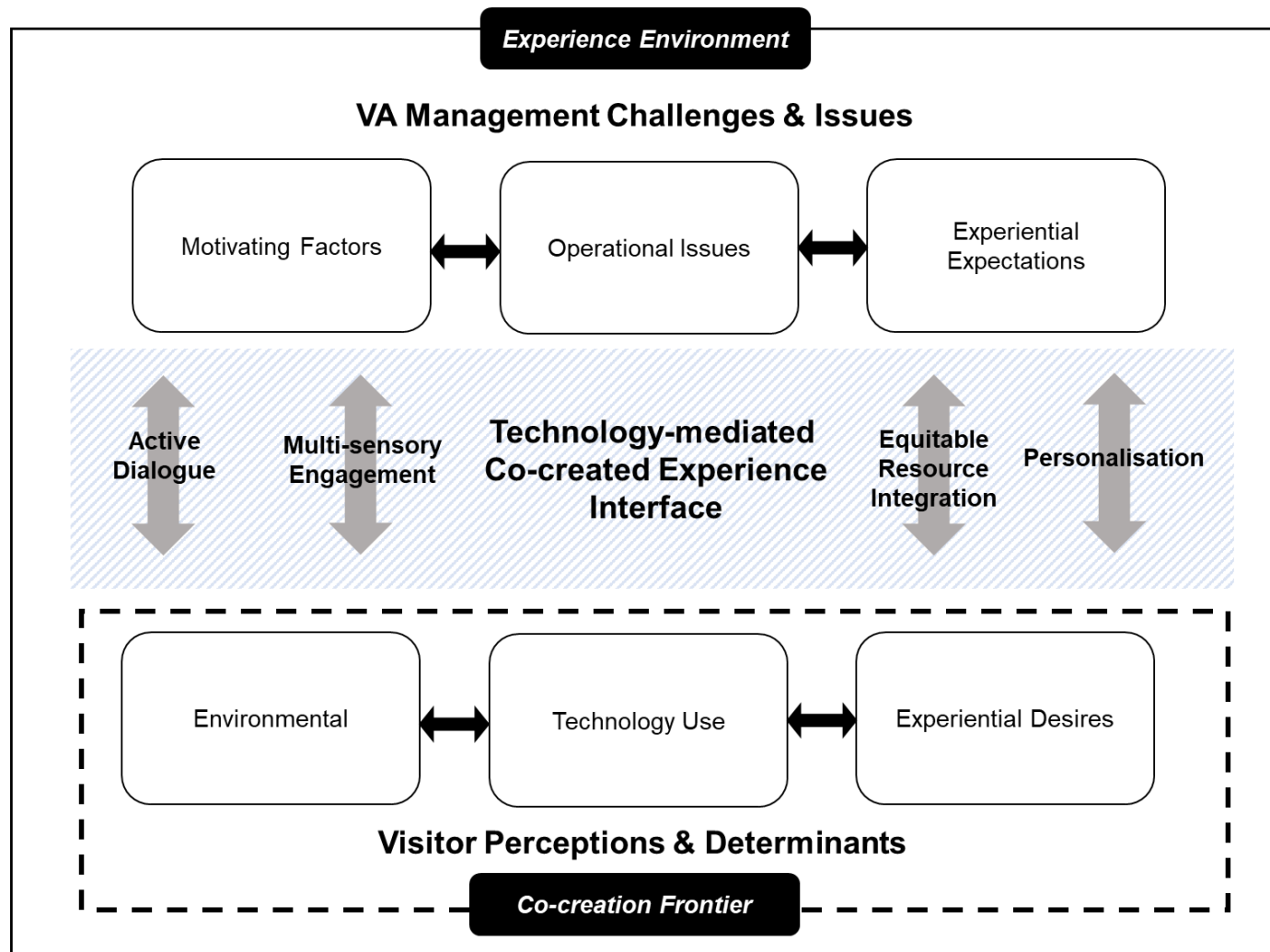


Figure 25. The Technology-mediated Co-creative Visitor Attraction Experience model

8.2.1 Overall Structure and Design

The model presented in this thesis can be identified as illustrative in nature. In contrast to a 'process' model that would present direct correlations between management actions and visitor perceptions, the Technology-mediated Co-creative Visitor Attraction Experience model sought to illustrate the range of factors that can influence the phenomenon. This output aligns with the exploratory nature of the research which aimed to present the factors influencing technology-mediated experience co-creation in VAs, but not necessarily to provide final conclusions, further reinforcing co-creation as a subjective process. The thesis provides a framework of critical issues that could be applied and tested in future explanatory research.

The structure of the model echoes the central tenets of SD Logic, by highlighting the inter-relationship between actors (VA management and visitor), whilst also distinguishing between the unique management activities and the visitor actions. As shown in the model, VA Management Challenges and Issues sit at the top and link three inter-related factors: Motivating Factors; Operational; and Experiential Expectations. There are two main justifications for this positioning. Firstly, the thesis approached the concept of technology-mediated experience co-creation from a business/management perspective and therefore views the VA management as having a vital role in driving the co-creation of experience. Secondly, it is argued that the VA management, as designers of the VA exhibitions and the subsequent product offering, facilitate the co-creative relationship by providing engagement platforms (Carù & Cova, 2006, 2015). The significance of the three main management themes are discussed in Section 8.2.2.

The lower part of the model presents the Visitor Perceptions and Determinants with three themes: Environmental; Technology Use; and Experiential Desires. These have been positioned mirroring the management factors to illustrate the equalising of the VA management (as the service provider) and the visitor (as a customer) roles within the co-creative relationship. As highlighted by Grönroos and Voima (2013) contemporary service logic indicates a service provider sphere, a customer sphere and a collaborative sphere each with

different roles and responsibilities in the co-creative process. Furthermore, in SD Logic, the relationship between customer and service provider is seen as equal and reciprocal (Gummesson, 2007; Gummesson et al., 2010; Verhoef et al., 2010). Therefore, the Technology-mediated Co-creative Visitor Attraction Experience model positioned both actors (VA management and visitors) equally to mirror one another, signifying the interactivity and togetherness between the actors (Greer et al., 2016). The significance of the three visitor themes are discussed at length in Section 8.2.3.

Finally, the thick black arrows between the themes illustrate their interconnected nature. The VA management challenges and issues and equally, the visitor perceptions and determinants do not act in isolation. The interlinking of the themes attempts to reiterate the dynamic and challenging nature of experience co-creation that is influenced by an array of forces. In the context of VA management, the factors that motivated the managers to adopt interactive technologies will have a direct impact on operational issues and site management. Similarly, a combination of motivating factors and operational issues will dictate the product offering and therefore influence the expectations that VA managers will have for the visitor experience. Conversely, in the context of visitor perceptions, the environmental factors will influence the extent to which visitors use the technology. The resulting product will arguably be compared against the expectations and experiential desires that visitors enter the VA exhibition with. It is therefore important to visualise the interconnected nature of the factors which influence the co-creation of technology-mediated VA experiences from both actors within the service relationship.

The Experience Environment

The model sits within a frame identified as The Experience Environment. While this has been widely discussed in the co-creation literature, its application is particularly unique within this study. The model is situated within the unique VA environment and in engineered exhibition spaces. This context is different from much of the previous literature which questions co-creation in naturalistic settings; similarly, the unique design of VA exhibition spaces makes the

environment for co-creation particularly significant. As has been discussed throughout this thesis VAs, as a service setting, are unique in their attention to exhibition design. The physical layout, format, flow, direction, ambience and interpretative provision are critical management decisions when creating VA exhibitions. As such, these decisions create the 'space' for experiences and indeed the opportunities for co-creation (Zatori et al., 2018). The model therefore acknowledges the important role that the physical environment plays in experience co-creation and in a VA context, must be viewed as a contributing factor. This experience environment, resonates with the arguments put forward by Mossberg (2007) and O'Dell (2005) who suggested that 'experiencescaping' is a vital management function that can have significant impacts on the consumer experience. However, where traditionally, the focus in service management has been on experience design, staging and theming, the findings of this study would argue for a change in perception to acknowledge the wider-reaching impact that the experience environment can have on the successful co-creation of technology-mediated experiences.

8.2.2 VA Management Challenges & Issues

The top of the model presents the main themes from the VA management data. As discussed in Chapter 6, the management challenges and issues have been segmented into three main themes: Motivating Factors; Operational Issues; and Experiential Expectations. As shown in Figure 25, each of these themes have been linked together at the same level. This positioning of these themes is significant in that they are interconnected management factors. Various motivating factors can create operational issues which can in turn reinforce experiential expectations. In viewing this flow in reverse, the expectations management has for the technology can dictate operational issues which may then influence whether the VA management are motivated to explore technology-based platforms in the future. The following sections identify the key findings from each of the themes and their sub-themes.

- *Motivating Factors*

The first of the three management themes explored motivating factors for the adoption of interactive technology in VA exhibition spaces. The findings raised

the need for technology to contextualise content and to add value to the visitor experience. While these sentiments echo much of the research in service marketing/management which identify technology-mediated environments as being particularly well places for adding value to the consumer experience (Breidbach et al., 2014; Dimitrios Buhalis & O'Connor, 2005; Minazzi, 2017; Ramaswamy & Ozcan, 2014). The findings of this study extend existing arguments by highlighting the value of interactive technology that is purposefully selected, not only to afford co-creative opportunities, but also as a means to add experiential value.

The VA management also acknowledged the diverse nature of different visitor groups, categories and audiences with regards to technology adoption. Much of the existing literature considers these from a consumer perspective, by arguing that visitors must be viewed as individuals each with their own preferences, motivations and expectations (Coghlan et al., 2012; Lee, 2015; Vittersø et al., 2000). Whereas this study draws attention to the impact of diverse audience groups on VA management practice. The study extends current thinking in VA research by highlighting the management challenges associated with shifting perceptions toward technology and how these can influence exhibition design, development and the provision of co-creative opportunities.

Value of technology as an interpretative tool. Interactive technology was seen as a powerful tool that aided in the contextualisation of content whereby various platforms helped illustrate complex messages for visitors. The approaches varied depending on the site, but the motivation to present understandable and relatable content through the interactives was shared throughout the management discussions. A number of the participants did however voice concerns as to the relationship between technology and original artefacts. A key finding within this theme is the renewal of questions over the appropriate use of technology in certain VA settings. While much of the contemporary literature advocates and accepts the use of interactive technology in VAs as the norm, this study highlights a need for caution by VA managers to consider the impact of technology adoption on the experience within their individual VA contexts. In museum settings, the recurring argument

was that interactive technologies should be used to enhance existing collections, whereas in the science centre, technology was largely used to replicate or illustrate phenomena that could not be presented through other interpretative methods. An additional finding therefore, is the need to view the role of interactive technology within individual contexts and recognise that the provision of co-creative opportunities should be appropriate for the unique experience environment. Furthermore, the findings of this study contribute to the management perspective of co-creation by arguing that the motivation to adopt technology in experiential spaces can differ depending on the unique nature of the VA product offering.

Widening access agenda. A number of the VA managers highlighted the role they hoped technology plays in widening access for various audience types. The use of interactive touchpoints within dynamic exhibition design was seen as an effective means to attract visitors from a range of backgrounds and with varied prior knowledge. Moreover, the findings of this study considered the selection of interactive technology as a means of supporting visitors with limited prior knowledge of the core VA resource. While prior knowledge has been identified as an antecedent in the co-creative process (Taheri et al., 2014), this study adds to this argument by highlighting the role of technology in activating prior knowledge and supplementing it where necessary to enhance visit engagement with the exhibition content. Equally, technology was seen to provide opportunities for virtual dialogue particularly for non-native English speakers. From this perspective, technology not only acts to support inclusivity but also enables visitors from all backgrounds to participate in active dialogue within the VA experience. As such, this study is one of the first to make the link between a management motivation to adopt technology and widening access. While the VA literature does highlight a shift in management practice toward becoming more inclusive (Black, 2012), the findings of this study depart from the existing literature by identifying a specific motivation by VA managers to actively consider and adopt technological mediation for the purpose of targeting new audience groups.

Funding. The availability and level of funding for exhibition development is perhaps less immediately visible in the experience co-creation process.

However, the findings would suggest that funding opportunities dictate the ability of VA managers to enhance the exhibition product and the subsequent adoption of interactive technologies. This in turn impacts the opportunities for engagement and interaction and therefore directly feeds in to the potential for a co-created visitor experience. While an understanding of funding pressures is well established in the VA literature (Leask et al., 2013; Swarbrooke, 2001; 2002), their impact on the provision of co-creative opportunities has yet to be comprehensively discussed in the literature. As such, the findings of this study have enhanced existing literature by acknowledging the challenges (namely limited funding) linked to technology adoption for the pursuit of co-creative experiences.

- *Operational Issues*

The second management theme explored the operational issues surrounding technology adoption and management in VA exhibition spaces. The need for various layers of interpretation (that encompass both technology-mediated and traditional media) is of central importance to exhibition design. The findings of the thesis also identified organisational processes as a potential issue in technology management within experiential environments. This would correlate with existing works in SD Logic which advocate the need for a 'co-creative ethos' to be embedded at all levels of experiential businesses and championed by all stakeholders (Ramaswamy & Gouillart, 2010). Similarly, the findings in relation to technology failure and misuse particularly contribute to the emerging co-destruction literature in service management. The potential threats associated with technology failure or misuse can be translated into a variety of leisure settings. The findings reiterate the difficulties that can arise from an over-reliance on technology in experiential spaces and encourage managers to be aware of the potential impacts on the visitor experience should the technology be inappropriate, unnecessary or poorly managed.

Interpretative layering. Each of the managers acknowledged the need for interpretation to work in unison and for various techniques to complement one another. Exhibition spaces need to be aesthetically diverse and provide layers of interpretation that will engage various audiences. Similarly, there was a

shared appreciation for creating touchpoints to add degrees of variety to the product offering. This reaffirmed the need for visitors to have free-choice and a level of control over their individual experience. While the need for various interpretative techniques has been explored in the context of visitor satisfaction (de Rojas & Camarero, 2008; Jeong & Lee, 2006; Nowacki, 2009), the use of interpretative layering as a management practice to support co-creative experiences represents a departure from the existing literature. The findings of this study indicate a VA management perception that increased and dynamic use of interpretation leads to greater value in the co-creative opportunities offered for visitors. This study further extended existing research by contrasting this perspective with the visitor perception.

Technology failure. A number of management discussions reflected on the threat of technology failure as an operational issue. Breakages or faults in the technology would remove or limit the opportunity for visitors to interact and engage with that particular set of messages and the resulting potential to co-create that component of the experience would be diminished. Too many occurrences of technology failure in the experience space would therefore limit the extent to which visitors could actively co-create their own experience with the VA. Much of the VA literature draws attention to the threat of technology failure, however this study extends this by arguing that the reliability and usability of technology is a key management challenge that can influence the co-creation of visitor experiences. The findings add to existing work in the management of technology-mediated experience co-creation by highlighting the danger of technology failure for limiting the co-creative opportunities that visitors can engage with.

Organisational processes. An unexpected challenge that arose in the data was the organisational processes and relationships that surrounded the adoption and design of technological platforms for VA environments. A number of the managers discussed the inherent difficulties in negotiating the design and implementation element of interactive platforms. The relationship between the various management actors (designers, curators, consultants etc.) can present challenges for the clarity of the interpretative content and as such, collaborative negotiations are essential. The findings of this study begin to

contradict existing perspectives of multi-actor co-creation. While much of the literature implied that the various actors (managers, suppliers, designers and so on) work harmoniously in the pursuit of co-creation, the findings of this study draw attention to the challenges of actor-to-actor negotiation and collaborative decision making with regards to developing technology-mediated engagement platforms. While there may be a management motivation to support co-creative experiences, complex organisation processes and relationships can limit the extent to which co-creative opportunities can be developed.

- *Experiential Expectations*

The final management theme explored the expectations that VA management held for the technology-mediated visitor experience. The findings within this theme strongly advocated the role of interactive technology for creating more dynamic experiences and adding value to the visitor journey. These findings correlate with wider tourism experience theory which identifies the pursuit of memorable experiences as critically important to contemporary tourism management (Pizam, 2010; Sfandla & Björk, 2013; Tung & Ritchie, 2011). However the key findings of this study extend these views by highlighting the increasing role that interactive technology has for supporting engagement with VA resources, creating a strong narrative and providing dynamic opportunities. This study is one of the few that sought to capture VA management views on how they expect interactive technology to contribute to visitor experiences and what they hope it can achieve as a co-creative tool.

Engagement with subject matter. Findings from this theme drew attention to visitor comprehension and understanding as a management expectation. Furthermore, the managers indicated that technological mediation was one way in which they expected to stimulate visitor engagement with the subject matter. However, the extent to which these engagements are meaningful is uncertain due to the subjectivity of the concept. This has implications for the co-creation of experience as it can be argued that brief or unengaging interactions may not provide a strong enough opportunity for the visitor to activate their own individual resources. These findings act to extend current

academic understandings of engagement within technology-mediated co-creation. While a number of authors (such as: Brodie et al., 2011; Hollebeek, 2012; Taheri et al., 2014) have explored customer engagement within the realm of SD Logic, tourism and VAs, this is one of the first to question the notion of engagement within the context of technology-mediated experience co-creation.

Narrative creation. Each of the management discussions reaffirmed previous findings in VA interpretation research to suggest that the VA story is seen as the priority as opposed to its presentation. Furthermore, the management participants highlighted their hope for visitors to generate their own stories from the VA experience. As such, an awareness of the co-construction of narrative was seen as important from the management perspective. These findings further adapt co-creation theory into the unique VA context by reframing the concept of dialogue to include narrative creation in technology-mediated environments. While existing research in VA management has identified that narratives are important and valued (Chronis, 2012b; Guthrie & Anderson, 2010; Mossberg, 2008), the findings of this study take a step further by questioning how technology (as a mediator) can encourage the co-construction of stories and narratives that can contribute to the wider co-creation of experience.

Dynamism. The managers acknowledged the need to create dynamic and varied exhibitions that appeal to various audience preferences. There was discussion about the importance of providing alternative experiences and interpretative touchpoints through which visitors could customise the content and information they receive. Similarly, exhibits that targeted multiple visitor senses were seen as a key expectation in the discussions. The importance of technology-mediated sensory engagement adds to the existing literature in experience co-creation, that has rarely considered it as an important management practice. The findings of this study suggest that VA managers increasingly rely on technology as a means to engage the senses of visitors which further validates the role of technological platforms as a critical tool within the co-creation experience.

8.2.3 Visitor Perspective & Determinants

The lower part of the Technology-mediated Co-creative Visitor Attraction Experience model presents the key themes drawn from the visitor data. As discussed in Chapter 7, the visitor perspectives and determinants have been segmented into three themes: Environmental; Technology Use; and Experiential Desires. In unison with the management factors, the visitor themes have also been linked together and positioned at the same level of Figure 25. The following sections identify the key findings from each of the themes and their sub-themes.

- *Environmental*

The first of the three visitor themes explored the environmental factors that influenced the visitor experience in technology-mediated VA exhibitions. The findings of this theme reiterate the importance of the servicescape on the visitor experience. The perceptions shared throughout the visitor interviews correlate with the work of Bitner (1992) and O'Dell (2005) who stress the importance of the physical and ambient environment on the customer journey and the associated satisfaction attributed to it. The findings of this study do however extend knowledge and understanding by linking environmental issues with technology-mediated co-creative experiences. In contrast to existing works which question environmental factors in the context of satisfaction, enjoyment and purchase behaviour (Bonn et al., 2007; Jeong & Lee, 2006; Slåtten et al., 2009) this study questions the environmental dimensions which can contribute to, or indeed limit, the co-creation of technology-mediated visitor experiences in VAs. The findings encourage scholars to reconsider the importance of environmental factors with reference to tourism, hospitality and events settings. This is particularly relevant to built VAs, where the exhibition environments are often highly constructed and engineered (Ahmad et al., 2014; Ardley, Taylor, McLintock, Frankii, & Leonard, 2012).

Access. The main finding in this sub-theme referred to the potential limiting of access to interactive touchpoints as a result of other visitors in the exhibition space. A number of the participants highlighted the presence of large groups

(such as education visits/school groups) as having a compromising effect on their experience. In a similar perspective to that of organisational processes as a management challenge (cf. p243), the findings of this study challenge the assumption that multi-actor interactions are always beneficial for co-creation. The visitor perceptions shared within this sub-theme indicate that the presence of certain actors (namely other visitors) can be viewed as detrimental in technology-mediated co-creative experiences as they can limit access to engagement platforms. This contradicts some of the current research advocating for increased customer-to-customer interaction opportunities within tourism experiences to support co-creation (Rihova et al., 2018; Tynan et al., 2014; Yi & Gong, 2013). Furthermore, issues with access reignite arguments in the VA literature which suggest that overcrowding and poor visitor management can have significant impacts on the visitor experience.

Visitor route. The findings in the visitor route sub-theme indicate that there must be a balance between management-driven guidance and visitor free-choice in VA experiences. Several visitors valued the clarity that was provided by a fixed visitor route or some sort of indicative 'trail' to structure the visitor route. This was particularly strongly felt in exhibitions that followed a chronological flow where the narrative was built-up incrementally as if the visitor progressed through the exhibition as if through time (i.e. beginning, middle and end). In other comments, a degree of free choice was particularly valued through the provision of opportunities for visitors to select and customise their own route. A need for a balance between visitor autonomy to create their own route but also guidance (or even recommendations) from VA management is argued as the optimum strategy to encourage the co-creation of VA experiences. As such, these findings challenge a number of perspectives in co-creation which argue that customers should be considered the sole creator of value and should be entirely autonomous in the construction of their experience.

Interpretative overload. In a similar finding to that of the visitor route sub-theme, a balance was needed between providing ample interpretative opportunities for visitors whilst also guarding against an excessive overload of information. A number of visitors suggested that a reliance on technology

made the visitor experience overwhelming, whereas others cited the combination of interpretative media (technology, visual, sound) as being distracting. Likewise, the forms of presentation and the environment must be evaluated to ensure that the physical space (sounds, design, competing interactives) does not overload the visitor. The findings within this sub-theme present a new issue that has yet to be explored within the co-creative experience literature. While a number of authors have advocated the integration of resources (both operand and operant) in the process of co-creation (Gummesson & Mele, 2010; Kleinaltenkamp et al., 2012; Kohli, 2006), the findings of this study highlight the danger of disintegrating resources as a result of interpretative overload. As such, a key finding drawn from the study is the negative effect on experience co-creation that can occur due to excessive use of interactive technology in certain VA environments.

- *Technology Use*

The second visitor theme explored the visitor perspective toward technology use in VA exhibition spaces. The broad variety of behaviours towards technology and the differing preferences towards its use, raises questions for several technology-mediated contexts (such as retail, banking or the leisure sector). The findings of this thesis would argue that VA managers need to be aware of the diverse perceptions toward technology use and factor these views into technology-design and implementation. Similarly, the usability of technology is critically important in experience co-creation. The findings from the visitor perspective indicated that poor design or an overly complex technological interface contributed negatively to the overall visitor experience. Furthermore, complex usability compromised the extent to which visitors could actively engage with the touchpoint and this therefore limited the opportunities for co-creation. The impact of poor technology usability is less prominent in tourism research and particularly lacking in the experience co-creation literature. As such, this study has added to the existing body of knowledge by not only capturing the management challenges associated with technology usability, but also considering its limiting effects on the co-creation of the visitor experience. The findings of this study would encourage scholars in tourism and other experience-related fields to consider the influence of technology

design and implementation in the overall experience, particularly in relation to co-creative practices.

Visitor preference. The main findings with regards to visitor preference toward technology use was the vast differences between individuals. While not explicitly a focus of this study, a number of visitors perceived generational differences with regards to technology use and preferences of certain visitor types. A key finding of this study indicated that visitor preferences for technology in VA exhibitions can reconfigure depending on the group they are visiting with. Rather than viewing visitors as a homogenous group, from a technology-mediated co-creative perspective, visitors not only have individual preferences, but these can change depending on the composition of their visitor group. This contributes to VA management research which, despite acknowledging visitors as individuals, has yet to consider the impact of visitor grouping on technology-mediated co-creation.

Behaviours. Through observation and discussion, a number of visitors reflected on their behaviour toward technology use and in particular their willingness to engage with platforms. The findings strengthened the arguments surrounding original artefacts as being vitally important for VA experiences, but also exposed the significant variety in visitor behaviours towards either the acceptance or avoidance of technology in exhibition spaces. As such, a key finding in this study was the notion of avoidance within the context of co-creation. Much of the existing literature assumes that visitors will gravitate towards technology for the engagement and interactivity that it provides (Coussement & Teague, 2013; Rey & Casado-Neira, 2013; Wolf et al., 2013). However, the findings presented here argue that visitors can also choose to actively avoid technology in favour of more tangible and traditional VA experiences. This begins to raise a fundamental flaw with co-creative experience research that assumes customers consistently seek to be active co-creators as opposed to more passive observers, although more research is needed to explore this concept further.

Usability. Several visitors highlighted the impact of usability on their technology use within the VA exhibitions. The findings indicated that the design of the

physical interface can have a significant impact on the extent to which visitors use the technology. Instances of overly complex presentation or poorly designed content were seen as a negative factor which limited how much certain visitors engaged with the platforms. Similarly, the lack of guidance and/or instruction on how to effectively use VA interactives was raised as an issue. The findings link particularly to current work surrounding experience co-destruction, where poor interactions with engagement platforms can in fact lead to a destruction of the experience through a disintegration of resources. The usability of technology has been explored in technology management/computing studies previously, however this has yet to be explored as a mitigating factors in the co-creation of experience in VAs. The findings indicated that failings in the usability of technology can have damaging effects on the message that the technology is there to convey. As such, a key conclusion is that despite the opportunities provided by interactive technology, poor design, functionality or usability can significantly threaten the potential for experience co-creation in addition to compromising key VA messages.

- *Experiential Desires*

The final visitor theme explored the visitor desires for their experiences in technology-mediated VA exhibitions. The need for ample choice in the VA product correlates with much of the co-creation literature (Etgar, 2008; Morgan, 2006), however the findings of this study extend this interpretation by calling for a level of balance and reservation. As a number of the visitors highlighted, too much choice can lead to a level of visitor fatigue in the VA experience and this concept has yet to receive attention in the co-creation literature. The findings would also support early arguments in the tourism literature that suggest memorable experiences form incrementally over time, and as such the data indicates a need for VA managers to consider the position of co-creative opportunities within the incremental experience. This would suggest that VA managers must view experiences holistically rather than being isolated to the on-site visit (Kempiak et al., 2017). This is equally relevant to other sectors such as festivals and events or hospitality. Considering the need for co-creative opportunities at all stages of the visitor journey is therefore argued as a critical management capability.

Degree of choice. The visitors interviewed throughout this research sought varying levels of choice within their experience. The availability of various interpretative media was highly valued, and this was particularly relevant when discussing meeting the needs of different visitor types and audiences. Free-choice in VA experiences was seen as particularly important, however the threat of information overload was also restated as a potential issue within the VA experience. While providing ample degrees of choice for visitors was acknowledged in the previous literature, the findings of this study highlighted the inherent management challenges that accompanied this. A key conclusion therefore, was that despite co-creation theory advocating free-choice, from a VA management perspective this is impossible to achieve completely. A balance is therefore needed to provide incremental 'moments' of free-choice and flexibility, while maintaining realistic VA management operations that need to accommodate varying numbers of visitors.

Interactivity. Interactivity was crucially important for the visitors interviewed throughout this study. The proliferation of rapid, open-access information facilitated by the internet has led to a perception that VA interpretation should provide interactive opportunities that enable free-access to information at the touch of a button. There is also a need to view interactivity as a holistic concept by widening our view of interaction in VAs as being solely technology-mediated. The findings support the need to acknowledge the sensory, ambient, tangible and mechanical interactions as being equally important to the visitor experience and as powerful tools in the pursuit of experiential co-creation. A further finding therefore, is that within the context of technology-mediated co-creation, it may be necessary to widen the concept of interactivity to acknowledge the complex web of interactions that can be woven through various engagement platforms. This extends current research which often views interaction as a binary and linear relationship between actors.

Memorable experiences. The visitor interviews identified a range of factors that contributed to a memorable VA experience. The degree of novelty in the presentation or content was seen as an important contributing factor. Similarly, the visitors indicated that rarely was it one exhibit which made the experience memorable, but rather the holistic visitor journey. It is therefore important for

VA managers to consider the overall technology-mediated experience and identify the co-creative opportunities that are present throughout. This does conflict with some of the VA management literature which argues that visitors often focus on one central aspect of the visitor experience and attribute value accordingly. In contrast, the findings of this study presented experiences as continuous processes of actions, reactions and reflections. Therefore, from a co-creation perspective, it is necessary to consider the various opportunities for engagement as parts of a wider ecosystem of experience. Furthermore, to encourage memorable experiences for visitors it was argued that the creation of a strong narrative is paramount. As such, this research illuminates a new area of study which questions the co-construction of narrative as mediated by interactive technology. While only identified as a sub-theme for the purpose of this study, the findings can act as a starting point for future scholarly work focussing on narrative creation within the context of experience co-creation.

- *The Co-creation Frontier*

As can be seen in the Technology-mediated Co-creative Visitor Attraction Experience model (Figure 25), the Visitor Perceptions & Determinants factors have been bordered by a perforated line entitled: The Co-creation Frontier. The significance of this structure cannot be underestimated. While the visitor factors are situated within the frame of the Experience Environment, which is constructed by the VA management, this does not position the visitor into a passive role. The Co-creation Frontier signifies a boundary in the relationship between VA manager and visitor. The presence of the border shows that the visitor maintains an active role in the co-creation of their own experience (Voase, 2002). They do not act as passive recipients of a pre-determined experience but determine to what extent they engage with the VA product-offering and engagement platforms afforded by the VA management.

This presence of The Co-creation Frontier aligns the model with existing theory in the service management field, which advocates the autonomy of customers in the co-creative relationship. Lusch et al. (2007) suggested that the customer is an active contributor and co-creation of the value creation process, likewise Prahalad and Ramaswamy (2000) argued that customers initiate the dialogue

and hold substantial power in the process of experiential co-creation. The findings from this thesis would support both premises and it is therefore argued that while VA management can provide the opportunities for co-creation, the visitor may choose not to cross the frontier and dismiss the opportunities available to them. As argued by Helkkula et al. (2012) value is generated by the holistic service experience and determined by the personal motivations, preferences and drivers of individual customers. It is therefore critical to recognise the potential divide between the two actors within the co-creative relationship and view The Co-creation Frontier as both an opportunity and a potential threat. This conceptual development adds to the existing literature by arguing that despite the inter-relationship of various actors within the process of co-creation and the perceived equity highlighted in the literature, scholars must also consider the potential divide between actors and the resulting implications on successful co-creative experiences. The findings of this study would suggest that, in some cases, visitors actively chose not to enter into co-creative activities and this poses questions for VA managers as to how to accommodate visitors who seek alternative and more traditional experiences.

8.3 The Technology-mediated Co-creative Experience Interface

At the centre of the model sits the Technology-mediated Co-creative Experience Interface. Within this space, four building blocks can be seen that support technology-mediated co-creative experiences: Active Dialogue; Personalisation; Equitable Resource Integration; and Multi-sensory Engagement. These have emerged as a result of holistic analysis that compared the key themes in the management data with the visitor perceptions. While many of the factors discussed in this thesis are unique to their respective actors (i.e. management issues or visitor perceptions), the four building blocks identified in the model are broad concepts that unify these disparate actors into a co-creative relationship. The four concepts have been identified in different guises in the previous co-creation literature, but this is the first study to situate them between management challenges and visitor perceptions within the unique VA context. These building blocks re-contextualise the findings of this thesis into the wider service management and tourism fields.

They can be adapted to address other mediating forces (such as the human resource) or indeed applied to other experiential contexts (such as festivals & events, transport, accommodation or the wider leisure sector). The establishment of the four building blocks also address Research Question 3: *What factors influence the co-creation of technology-mediated experiences in the selected VAs?* And these have been discussed individually in the following sections.

8.3.1 Active Dialogue

The notion of dialogue is well established as an antecedent for co-creation (Prahalad & Ramaswamy, 2000, 2004a) and this is evident through the prominence of the DART model of co-creation discussed earlier in this thesis (cf. p27). However, such a model has been criticised for its applicability to practice (Mazur & Zaborek, 2014) and arguably its relevance to the tourism, hospitality and events context can be questioned. As highlighted by Ramaswamy and Ozcan (2014) active dialogue refers to the engagement of individuals 'on their own terms' and the mutual relationship that contributes to experiential value. The findings of this thesis extend the notion of active dialogue in two ways. Firstly, when translated into a technology-mediated environment, the concept of active dialogue takes on new meaning. Where in many traditional service settings, dialogue is fostered by face-to-face communication, technology-mediated environments can provide opportunities for virtual dialogue. This is important for VA management as it not only fosters engagement with the subject matter of the site but from an operational viewpoint, also acts to disperse visitors within the exhibition space. The findings of this study would argue that active dialogue can not only enhance the visitor experience and co-creative opportunities, but it can also act to support visitor management through encouraging longer dwell times, providing direction and diffusing visitors throughout the experiential space. This is particularly relevant to the heritage sector where many of the management challenges discussed throughout this thesis relate to the movement of visitors and their management within sensitive environments.

The second way that this thesis has extended the concept of active dialogue is linked to the unique VA product and the presence of VA narratives. As discussed throughout the literature review and findings, the creation of a strong narrative through effective interpretation is vital for the VA product (Beck & Cable, 2002; Knudson et al., 1995, 2003; Veverka, 1998; Widner-Ward & Wilkinson, 2006). For visitors, opportunities for active dialogue provide the potential for the co-creation of the VA narrative. In interaction with various engagement platforms, visitors can tailor the information or stories they receive to their own preferences and as such become actively involved in crafting their own VA narrative. This is unique to the VA sector where the story and the associated experience represent a major motivator for visitation.

8.3.2 Personalisation

The second building block for technology-mediated experience co-creation is personalisation. While this is not a new concept in tourism research, there is little existing research that cites personalisation as a critical component of the technology-mediated co-creative experience. The findings of this thesis add to the work of Minkiewicz et al. (2014) who argued that personalisation involved the customisation of the experience, interaction with staff and technology. However, the authors did not specifically question how technology can be used to foster personalisation in the co-creation of tourism experiences. This thesis goes further by arguing that engagements with interactive technology act as a virtual channel through which visitors can personalise and tailor their individualised experience. It is therefore necessary for VA managers to view technological platforms as a critical tool within the experiential setting. As technology becomes more autonomous and sophisticated, the potential for experiential personalisation is only likely to increase.

The findings of this thesis agree with the conceptual framework developed by Sørensen and Jensen (2015) that identified experience encounters in tourism as being driven by personalisation. In contrast to traditional service relationships which were largely standardised, contemporary tourism managers must consider the opportunities for visitors to personalise their experience as a major contributor to both satisfaction and experiential value

(Boswijk et al., 2005). As noted by Wolf et al. (2013), the VA sector is particularly well equipped to offer personalisation in the visitor experience through operational decisions and associated products. Examples of this can already be seen in the use of AR/VR technology in exhibition experiences (see Section 3.4.1), however greater insight into the range of personalisation practices applicable to the VA domain is needed.

8.3.3 Equitable Resource Integration

The third building block for technology-mediated experience co-creation is equitable resource integration. As discussed at various stages throughout this thesis, SD Logic argues that co-creation involves the integration of various resources (Kohli, 2006; Scott et al., 2009; Vargo, 2009; Vargo & Lusch, 2014), however rarely has this been considered in the context of technology-mediated co-creation, and especially not in VAs. The findings of the thesis would agree with Vargo and Lusch (2008a), in that resource integration needs to be mutually beneficial to both actors within the co-creative relationship (in this case, management and visitor). As such, interactive technology acts as conduit through which both actors can engage their operand and operant resources. For VA managers, the implementation of interactive platforms within the VA exhibition demonstrates an integration of resources, particularly in knowledge and expertise. Curators and exhibition designers craft value propositions in the form of interpretative content to share knowledge or provoke debate. Without the VA management integrating their operant resources (i.e. subject-specific knowledge) there would be no need for interpretation and therefore no value propositions.

However, this study goes further by arguing that the use of interactive technology (such as games and activities) allows visitors to apply, test and engage their own knowledge and individual skills. Similarly, through engaging with the interpretative content, visitors integrate their own personal resources in the construction of a unique VA narrative. Equitable resource integration of both actors within the service relationship is therefore necessary for the successful co-creation of technology-mediated experiences. In practice, this requires VA managers (and indeed managers from other technology-mediated

service settings) to provide the adequate opportunities for visitors to meaningfully engage their own resources and subsequently encourage visitors to interact with the platforms.

8.3.4 Multi-sensory Engagement

The final building block is particularly relevant to the VA sector. Multi-sensory engagement refers to the provision and use of various tools and techniques to engage the senses of visitors within an exhibition environment. As an experiential product, VAs are particularly well placed to provide multi-sensory interactions that can engage visitors beyond the visual. Technology provides the opportunities for not only visual stimuli, but also can be used to engage with sound, touch and smell. While the importance of multi-sensory engagement has been considered in both the tourism and service management literature (Chronis, 2006; de Farias, Aguiar, & Melo, 2014; Joy & Sherry, 2003; Moscardo, 2010; Moscardo, 1996; Zomerdijk & Voss, 2010), little work has explored the concept from the co-creative perspective (Agapito et al., 2013). The findings of this research would suggest that engaging the range of visitor senses can be mutually beneficial for both VA management and the visitor, and should therefore be viewed as integral to the co-creation of experience. In practice, managers can innovate with various forms of sensory interpretation and provide opportunities to engage on a deeper level with visitors and in turn, visitors can engage in a more dynamic experience which is memorable and enriching.

The findings of this thesis would also argue that traditional conceptualisations of engagement must look beyond the physical interactions that exist within experiential spaces. The research aligns with the work of Taheri et al. (2014) that argued that engagement is an organic and highly contextual concept that is influenced by an array of factors. However, this study moves beyond current discussions on the nature of engagement to suggest multi-sensory interactions as a tool that could be used in the co-creation of experience. Such arguments could again be applied in other experiential contexts, however VAs are particularly rich in opportunities for multi-sensory interaction that can be afforded by technology.

8.4 Contributions of Study

The following sections identify and discuss the various contributions of this study. Initially, the key contributions to knowledge and understanding are clarified to indicate the departures from existing research. Thereafter, a series of management strategies are discussed and summarised as contributions to professional practice emerging from the findings of the study.

8.4.1 Contributions to Knowledge & Understanding

- *Development of the Technology-mediated Co-creative Visitor Attraction Experience model*

The main contribution of this study is the development of the Technology-mediated Co-creative Visitor Attraction Experience model. As discussed throughout Chapters 6 and 7, there are a unique range of VA management challenges and visitor perceptions that, collectively, can influence the successful co-creation of technology-mediated experience co-creation. This is the first academic study to consider both of these actors equally within the co-creation of technology-mediated experiences and to explore the factors which influence the process.

The distinctive management challenges and issues that affect VAs have been captured that identify and evaluate the complex decision-making that underpins technology adoption, selection and management. A key contribution from this perspective is that although VA managers are aware of the benefits that technology can offer for supporting co-creative experiences, there are significant operational factors which can inhibit this process. The model also captures the visitor perspective within the co-creation of technology-mediated experiences. These act as a meaningful counterpoint to the management challenges by evaluating how visitors perceive, use and engage with technological platforms and questions the extent to which these contribute to the co-creation of their own individual experiences.

The Technology-mediated Co-creative Visitor Attraction Experience model not only captures the unique factors from the perspective of each actor, but also synthesises these to identify points of commonality between these previously

separate actors. The model acknowledges the complexity that accompanies co-creation as a theoretical process and departs from the existing literature by identifying the challenges associated with its management.

- *Conceptualisation of the Technology-mediated Co-created Experience Interface*

This contribution takes existing co-creation theory into new directions by arguing that despite VA managers and visitors being very different actors in the co-creative relationship, there are shared antecedents that mutually affect the technology-mediated co-creative process. The four building blocks identified in the interface (Active Dialogue, Personalisation, Equitable Resource Integration and Multi-sensory Engagement) support the process of technology-mediated experience co-creation and add to existing theory in both tourism and service management.

The study has found that active dialogue is particularly critical to technology-mediated experience co-creation and although this has been linked to co-creation research before, the importance of the concept within technology-mediated and experiential environments has yet to be fully considered until now. The role that technology has in the personalisation of experiences has received previous research, however this study was the first to evaluate the extent to which personalisation, as afforded by technology, influenced the co-creation of experience. Similarly, resource integration remains a core theoretical component of both SD Logic and co-creation research, however this study extended knowledge by questioning the role that interactive technologies had in activating resource integration between actors in the co-creation of experience. Finally, multi-sensory engagement, whilst a critical part of VA products, is increasingly important in other service environments, and this study was one of the first to identify technology-mediated multi-sensory engagement as a tool that can be used to support the co-creation of experience.

The Technology-mediated Co-creative Experience Interface also extends the scope of this research into the wider service industry by identifying building blocks that are not exclusively linked to VAs. As highlighted throughout Section

8.3, active dialogue, personalisation, equitable resource integration and multi-sensory engagement can act as objectives within a variety of service/experience-based environments. However, this is the first study to specifically identify these as unifying concepts that link the management and visitor perceptions in technology-mediated experience co-creation. As such, these four building blocks have far-reaching applications beyond the VA sector and into other environments where technology is used to support the co-creation of experience.

- *Reframing of VA management challenges within the context of technology-mediated experience co-creation*

This study adds a further contribution to VA research specifically, by reframing VA management challenges within the context of technology-mediated experience co-creation. While VA management challenges and issues have been explored previously within the academic literature, this study is the first to identify the unique challenges that VA managers face when identifying, selecting and adopting interactive technology for the purpose of experience co-creation. The significance of this contribution is that while co-creation is advocated in the service management literature as being an ideal business strategy to support competitive advantage and service quality, the findings of this study have argued that there are under-reported challenges in implementing and maintain this strategy.

In particular reference to VAs, a number of the well-established management challenges (such as funding, organisational processes, and targeting diverse audiences) appeared heightened when considered in the context of technology-mediated experience co-creation. Furthermore, a number of other challenges that hadn't previously been identified in relation to interpretation, technology use or exhibition design became more apparent in the context of experience co-creation. As a key contribution of this study, it can be seen that the pursuit of technology-mediated experience co-creation brings with it significant management challenges and this is the first study to identify and evaluate these within VAs.

- *Application of the technology-mediated co-creative experience concept to the unique VA context*

Finally, from a broader perspective, this study contributes to knowledge and understanding by applying the concept of technology-mediated experience co-creation to the unique VA context. Despite the proliferation of co-creation research in neighbouring fields, and indeed in tourism research more generally, the concept has rarely been applied in VAs as a distinct sector within the wider tourism industry. As has been discussed at length throughout this study, VAs offer unique experiential products and are reliant on the creation of a memorable and engaging visitor experience as part of their core business strategy. Furthermore, as discussed throughout Chapter 3, VAs make particularly unique use of interactive technology which sets them apart from other sectors in the tourism, hospitality and events industries. The use of interpretative media as part of the product offering and as a central component within VA storytelling is particularly different from any other industry. However, despite the importance of VAs and their diversity in product offering, the sector lacks in-depth, theoretically-driven research in academia. To add to the body of knowledge surrounding VA management, this study is the first to specifically question the role and application of interactive technology in the co-creation of VA experiences.

8.4.2 Contributions to Professional Practice

In addition to the contributions to knowledge and understanding identified above, Figure 26 presents a **range of management strategies** drawn from the findings that could be used to foster the technology-mediated co-creative experience in a VA context. Through visitor guidance, innovative exhibition design, evaluation of the technological interface and holistic audience research, this thesis has provided avenues for VA managers to assess, evaluate and consider the factors influencing experience co-creation in their own VA contexts. The various strategies identified in Figure 26 provide an opportunity for VA managers to integrate the factors influencing technology-mediated experience co-creation into their planning and evaluation processes. Furthermore, through future development, these strategies could be

operationalised to develop a practice-based toolkit for fostering experiential co-creation in the VA sector.

This section specifically addresses RQ4: *How could the technology-mediated co-creative relationship be further encouraged and supported in VAs?* The following discussion contributes to VA management research by tailoring existing practices to the context of experience co-creation. As shown in Figure 26, four main categories have been identified based on the findings of this research and subsequent VA management strategies have been considered.

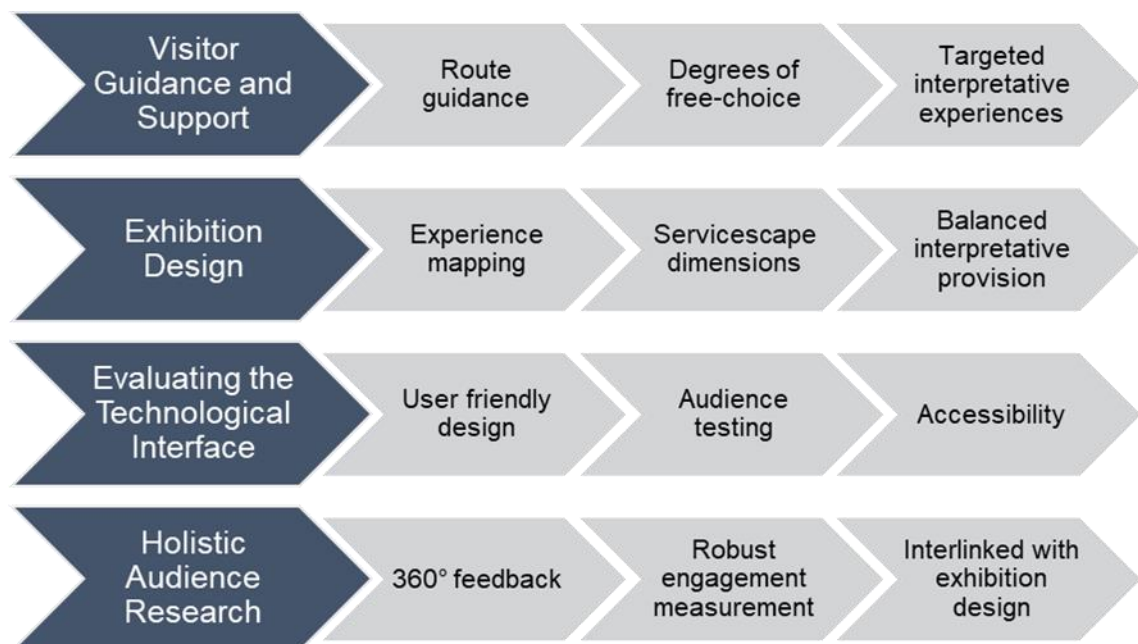


Figure 26. VA Management Strategies for Technology-mediated Experience Co-creation

- *Visitor Guidance and Support*

A critical strategy for VA management is to identify appropriate levels of visitor guidance and support within the product. As discussed throughout this thesis, there is a fine balance between providing enough autonomy for visitors to customise their experience whilst also providing enough guidance so that they are supported in the co-creative process. Such techniques include an assessment of the route guidance that is offered to visitors and to consider alternative tools for offering suggested routes. Similarly, VA managers should identify opportunities for free-choice within the VA product that can foster the

co-creation of experience (Etgar, 2008; Morgan, 2006; Moscardo, 2017). Finally, long-term planning could involve targeting interpretative experiences to specific audience types. As highlighted throughout this study, visitors to VAs are not one homogenous group and recognising individual, group and generational preferences is vital for the co-creation of experience to take place (Moseley, 2013; Rennie & Stocklmayer, 2003). Targeted interpretative experiences may encourage VA managers to consider the audiences for specific exhibits and assess whether suitable alternatives have been provided for other visitor groups.

- *Exhibition Design*

The findings of this thesis provide renewed validity of experience mapping as a management tool to be better used in VAs. The strategies recommended here add to the early work of Laws (1998) who suggested that heritage managers should consider service blueprinting to explore visitor experience and satisfaction levels. Similarly, Kirchberg and Tröndle (2015) used various psychological and physiological measures to create experience maps of museum exhibitions as a means to classify visitor experiences. Such processes could be developed to pinpoint co-creative opportunities within the VA product. Similarly, this technique can be adapted to consider the servicescape dimensions that were highlighted in both the management and visitor interviews. As such there is a need for the ambience, flow, structure and variety in exhibition spaces to be evaluated through the co-creative lens. Finally, balance in interpretative provision should also be considered by VA management during the exhibition design process. Identifying points where interpretative techniques conflict with one another and an awareness of the threats posed by interpretative overload should be built into VA management planning and monitoring processes.

- *Evaluating the Technological Interface*

The findings of the thesis would strongly indicate that a focus on user friendly design is built into interpretative plans and consideration into ways that can make interactive touchpoints more user friendly for various visitor types. Similarly, in-depth audience testing, and monitoring is an important strategy

for VA management to consider. Particularly in the development stages of interactive exhibits, it is recommended that target audiences are given the opportunity to pre-test prototypes of the interactives and engage in visitor feedback. Many of the issues identified in regard to technological misuse, failure, and usability could have been addressed in the design phase if visitors had an active role in pre-testing. Finally, accessibility needs to be seen as a holistic concept. As noted by Buhalis and Darcy (2011) integrative access in tourism is of critical importance and in a VA context, interpretation is particularly well placed to address this (Quétel-Brunner & Griffin, 2014). However, the findings of this study would argue that assessing accessibility needs to go further than foreign language provision and disability inclusion. The accessibility of interactives needs to be viewed in the context of all visitors particularly those from different audience groups and with varying levels of technological confidence and acceptance.

- *Holistic Audience Research*

The findings of this thesis would further support the need for in-depth audience research in VAs (Leask, 2016). The perspectives shared throughout the data collection would support the need for VA managers to enact 360° feedback practices where the visitor experience is explored and analysed in the pre-, on-site and post-visit stages (Payne et al., 2008). Furthermore, robust engagement measurements could be developed by mapping co-creative behaviours with visitor observation and research. Current frameworks largely explore length of engagement and level of interaction which tell VA managers little about the extent of co-creation occurring in the exhibitions. Recommendations to overcome this include using more qualitative research methods to evaluate the visitors' engagement with co-creative opportunities and then compare this with overall experience satisfaction. Examples that may be useful for VA management could include interview techniques (as employed within this study) or other methods (such as diary techniques, observation, visitor tracking etc.) to provide insight into co-creative activity. Finally, the interlinking of audience research into future research design can act to engage visitors in the co-production of technological touchpoints or other interpretative techniques. As argued by Chathoth et al. (2016) there are

significant opportunities to involve customers in the pre-service stage to produce outputs (e.g. interactive exhibits) that are better suited to the end-users.

8.5 Broader Applications of the Technology-mediated Co-creative Experience

The contributions of this study have far reaching applications for other experiential contexts. While this thesis is grounded in the VAs, the findings and conceptualisation of the technology-mediated co-creative experience have definite implications for other sectors. While, undoubtedly, the specific management challenges and visitor perceptions presented here are unique to VA experiences, the core constructs within the technology-mediated co-creative VA experience model can be readily transferred. The following discussion considers the broader applications of the Technology-Mediated Co-creative Visitor Attraction Experience model to other sectors.

The relevance of the **experience environment** is not limited to the VA sector, as arguably this can be applied across most service-orientated organisations. While the design considerations of experiential spaces is a well-established field, the findings of this study highlight its importance for the pursuit of memorable co-creative experiences. Arguably, the importance of the experience environment for co-creation is not limited to the physical space. The need to carefully manage the space in which co-creative experiences can occur could increasingly be applied to the virtual business landscape. With the rapid growth of artificial intelligence and autonomous systems in the service sector, there is a renewed need for service managers to carefully craft their virtual environments to not only support customer service but also to maintain their competitiveness in the marketplace. A notable example of a sector where this research could be applied is finance and banking as a particularly interesting context that is increasingly straddling both the physical (e.g. traditional high street banks and building societies) and virtual (e.g. online banking, virtual appointments, mobile applications) environment. The findings of this study could encourage alternative sectors, such as banking/finance to consider the co-creative potential of their experience environments. By having

a greater awareness of the environmental conditions that can contribute to co-creative experiences, alternative sectors may be able to build strategies into their physical and virtual design to enhance the customer experience.

Similarly, **management challenges and issues** associated with technology adoption and use is not reserved to the VA sector. Arguably all services could face some of the challenges identified throughout this thesis (such as funding restrictions, technology failure, organisational processes or the perceived value of technology). In considering other sectors within tourism and leisure, a number of the management challenges and issues suggested in this study could be applied to the festival and event sector. Technology is becoming increasingly diffused through events as a form of mediation, for adding value and for encouraging audience participation (Bohez et al., 2018; Schulte-Römer, 2018). However, research into the co-creative potential of technology within events is still in its infancy. This is coupled with a number of unique management challenges facing events (such as the lack of permanence) that dictate the selection, adoption and use of technology. The findings of this study could equip scholars in festival and event management to explore the role and application of technology for the co-creation of event experiences, with particular reference to the specific management challenges facing this sector.

A further broader application can be seen in the **Technology-mediated Co-created Experience Interface** presented as a contribution of this study. For example, the four building blocks identified within the interface (cf. p265), despite emerging from the VA context, could equally be applied to other sectors, such as retail. Increasingly, the retail sector has faced significant uptake in technology use to enhance in-store experiences as a means to remain competitive. In-store touchscreen technology, augmented/virtual reality and digitised personal shopping experiences are becoming more common on the high-street, and as such, retailers could apply the following building blocks to assess the co-creative potential of these platforms:

- Retailers could assess the **active dialogue** that is supported by interactive technologies that act as an additional link within the sales and communication chain.

- Opportunities for **personalisation** could be explored through technological-mediation within the shopper experience or to assess technology for the purpose of efficiency.
- Retailers could assess the level of **equitable resource integration** that is afforded by interactive technology in the in-store experience by questioning the extent to which shoppers can integrate their own skills, knowledge and preferences to the experience.
- Finally, **multi-sensory engagement** could be considered through the opportunities that technology offers for visualising products to shoppers or increasingly the tangibility of services (e.g. the increasing use of virtual reality in travel retailing to immerse customers in destinations).

As highlighted above, the findings of this study could be manoeuvred and adopted in a number of alternative contexts. In the retail example, the continued requirement for retailers to personalise and enhance the traditional shopping experience requires new ways of assessing technology-use. The building blocks identified within the Technology-mediated Co-creative Experience Interface could act as a framework to not only question, but to foster experience co-creation within this alternative context.

One final application of the findings of this study could be into the airport/airline experience. The far reaching application of technology within the aviation sector has radically changed the passenger experience. Online reservation systems, e-ticketing, check-in touch points, passport e-gates and other forms of technology are rapidly becoming the norm (Benckendorff et al., 2014). However the extent to which customers can exercise control over these and their propensity to use them is less understood. What is particularly interesting in the context of this study is the relevance of **The Co-creation Frontier**. Where the VA context largely provided technology as opportunities for visitors (i.e. the customer actively chooses to engage, therefore crossing the Frontier of their own free will), the aviation industry is increasingly forcing travellers to use technology as part of the service. From this perspective, the choice of customers to not interact with technology is diminished and it could be argued that they are effectively 'pulled over' the Frontier. The findings of this study could therefore be applied to the aviation industry to question to effect on

customers who lose the freedom to reject interactive technologies within services and whether this could compromise the chance of a co-created experience.

8.6 Reflection on Aim and Objectives

This thesis attempted to fill a significant gap in both the co-creation and VA management literature by producing an empirical study into technology-mediated experience co-creation in the unique VA context. To advance existing knowledge in visitor attraction management and experiential co-creation theory, the aim of the study was *to examine the role and application of interactive technology in the co-creation of visitor experiences in Scottish visitor attractions*. An in-depth qualitative methodological approach that was grounded in a constructivist epistemology was employed to explore technology-mediated experience co-creation in four leading VAs in Scotland. To achieve the aim, four research objectives were identified and have been addressed throughout the thesis. Each of the objectives have been summarised and evaluated in the following sections:

Objective 1. To critically review the literature surrounding the co-creation of tourism experiences in the context of VAs

The first objective involved a comprehensive literature review of the existing research in co-created tourism experiences. Chapter 2 achieved this objective by providing an in-depth critique of co-creation theory and the experiential perspective. The existing literature in technological mediation in experience co-creation was also reviewed to provide a conceptual base for the study. The final part of Chapter 2 explored the application of co-creation as a theoretical construct in tourism research. The findings of this review indicated a significant paucity of research that questioned technology-mediated experience co-creation in the VA domain.

Objective 2. To examine the role and application of interactive technology within different VA exhibition spaces

The second objective involved a specific focus on interactive technology as a mediator in the VA experience. Chapter 3 presented an in-depth literature

review of previous research surrounding the VA product, interpretative practice and the use of technology in exhibitions. This provided a theoretical base for qualitative inquiry that was then presented in the Findings and Discussion chapters.

Chapter 6 questioned the management challenges and decision issues that surrounded the selection and adoption of technology in VA exhibitions and identified context-specific factors arising from the four VA sites. Chapter 7 then explored the visitor perceptions and determinants toward interactive technology use in exhibition spaces. Through the Literature Review and Finding and Discussion chapters, Objective 2 was achieved by gaining a holistic understanding of how technology was used in VA exhibitions and what role is played in the visitor experience.

Objective 3. To develop a conceptual model that explores the factors influencing the co-creation of technology-mediated experiences in VAs

The third objective involved the creation of a conceptual model that synthesises the factors presented in the Findings and Discussion chapters. Objective 3 was achieved in Chapter 8 in the development of The Technology-mediated Co-creative Visitor Attraction Experience model (see Figure 25). The model identified the key VA management challenges and issues alongside the visitor perceptions and determinants emerging from the findings. Furthermore, the model identified a Co-creation Frontier that reiterates the complexity of the co-creative relationship between actors. Finally, the Technology-mediated Co-creative Experience Interface presented four building blocks (Active Dialogue, Personalisation, Equitable Resource Integration and Multi-sensory Engagement) as conduits which connect the disparate factors emerging from the two actors (VA managers and visitors).

Objective 4. To contribute to the development of knowledge in VA research by debating how interactive technology can be further developed as a co-creative platform in Scottish VAs

The final objective involved providing theoretical and practical contributions to VA research. This was achieved in Chapter 8 both through the Technology-

mediated Co-creative Experience Interface (as discussed above) and through the development of a series of VA management strategies. As a practical contribution to VA management, the thesis presented a range of strategies that could contribute to VA master planning and evaluation processes to support the development and implementation of interactive technology as a co-creative platform in VAs.

8.7 Limitations of the Research

While a comprehensive evaluation of the research methods was presented in Section 5.6, the following sections consider the key limitations of this PhD research.

Initially, this research was conducted exclusively in Scottish VAs and indeed did not acknowledge all forms of VA in the data collection. While these are undoubtedly limitations in generalisability there is a solid rationale for both choices. Firstly, the context-rich individual nature of co-creation (as a phenomenon) would limit any vast generalisations between VAs and this therefore was not an objective for the study. The Scottish VA sector is also particularly rich in variety and density which aided in the recruitment of appropriate sites and as such there was little need to expand the geographic reach of the study.

Secondly, not all types of VAs were included in this study. Through the literature review and discussions with industry partners, there was a clear focus on technology-adoption in museums, heritage sites and science centres. As the focus of this study was on fixed interactives rather than hand-held or mobile enabled, there were some VA types that were largely excluded from the sample. While there are pockets of research questioning technology use in galleries (Han, tom Dieck, & Jung, 2018), botanical gardens (Xu et al., 2013), and religious sites (Hughes et al., 2013), these are largely focussed on mobile technology and this thesis aimed to explore the concept of technology-mediated experience co-creation in fixed exhibition spaces as the majority of VAs still rely on fixed interpretative media.

Thirdly, the study followed a purposive sampling strategy throughout both in the selection of sites and in the selection of participants. While this strategy invariably limits the extent to which the findings can be generalised, the individual and subjective nature of visitor experiences warranted a more flexible and inclusive sampling strategy. The objectives of this study sought to explore the role and application of interactive technology in a range of VA exhibition spaces and therefore sites were selected (within a criteria) that showcased interactive technology use in various ways. VA managers were also purposefully selected based on their expertise and appropriateness to answer the research questions derived from the literature review. Finally, visitor participants were approached more randomly within exhibition spaces to capture a diverse range of perceptions toward interactive technology use that would not have emerged from a rigid sampling regime that focussed on generalizable findings. While it could be argued that this strategy can bring with it a degree of selection bias (Miles et al., 2014), the resulting findings have clearly presented a range of views that are not weighted towards a positive or indeed negative perspective on technology-mediated experience co-creation. The flexibility afforded by purposive sampling led to the inclusive collection of appropriate data that celebrated individual perspectives, thoughts and feelings which was befitting of this explorative study.

Finally, this study followed a purely qualitative approach and as such, lacks the large-scale comparative quality that quantitative measures bring to social science research. However, as suggested by Jamal and Hollinshead (2001), rigorous practice and reflexivity in qualitative research can overcome many of the criticisms. This research utilised a pilot study to evaluate and critically reflect on the selected research methods and techniques, similarly all the transcription was conducted solely by myself to ensure a close relationship and understanding with the data. The template analysis method, while iterative and flexible, provided a robust structure through which the data was synthesised, coded and analysed. Finally, as discussed throughout this thesis, the individualistic nature of co-creation and the exploratory objective of this study reinforced qualitative inquiry as the appropriate research approach. As argued by Walle (1997), the questioning of consumer behaviour in tourism

research particularly warrants in-depth, iterative research methods such as those offered by qualitative approaches.

8.8 Future Research Directions

The findings of this thesis have produced a number of future research directions and opportunities for further inquiry. The following sub-sections summarise the key areas that could take the study into new directions.

Firstly, this exploratory study did not focus on specific visitor segments or audience types within the data collection. As such, further inquiry could potentially *segment the visitor perceptions of specific groups* to better understand the diversity in visitor preference, behaviour and expectations toward technology-mediated experience co-creation. Particular groups include the Generation Y and Generation Z cohorts, senior visitors and visitors with special needs. The findings of this study could act as a starting point for segmenting the technology-mediated co-creative VA experience into various subgroups to identify where VAs need to focus their interpretative provision. Furthermore, future research could *replicate the study in different cultural contexts*. Where this thesis was based in Scotland, and as such largely adhered to Westernised cultural norms, future research could aim to explore the technology-mediated co-creative VA experience in locations with different cultural systems, behaviours and values. Examples could include the replication of the study in VAs located in Middle Eastern, Asian or African nations.

Secondly, the findings of this research also lay the foundations for explanatory research. Future studies could operationalise technology-mediated VA experience co-creation and assess its *impact on commercial performance*. The exploratory findings of this study strongly support the value of interactive technology in providing opportunities for personalisation, dialogue, resource integration and multi-sensory engagement, however future research could evaluate how these translate into commercial benefits for the VA as a competitive business. Future studies could aim to analyse the impact of technology-mediated experience co-creation on: revenue generation;

satisfaction; quality grading; repeat visitation; or associated commercial spend. From a different perspective, future work could also consider the *impact of co-created VA experiences on perceived authenticity*. While beyond the realm of this study, the Technology-mediated Co-creative Visitor Attraction Experience model could act as a foundation to question visitor perceptions of authenticity as a result of the on-site experience.

Finally, there is potential to adapt the Technology-mediated Visitor Attraction Experience Co-creation model in two further ways - adapting the mediating force or the experiential context. This thesis has focussed on the role of interactive technology within the co-creative experience however, as noted in the Literature Review, *there are other mediators which could be explored*. In the VA context, an alternative mediator involves the human resource. The presence of service personnel (such as tour guides) in VA exhibitions could have very different impacts on the co-creation of experience. Similarly, the management and visitor factors would be very different than those linked to technological-mediation. As such, there is scope to explore the role of other mediators on the co-creation of such experiences and uncover the factors influencing their success or failure. Particularly, pertinent to this discussion is the emerging *role of technology as an equal actor* in the co-creation of experience. While the theoretical foundations of the study continue to view technology as a mediating force within the co-creative process, the findings of the thesis would begin argue that technology could indeed be viewed as an equal actor within co-creative relationships. While this discussion is beyond the remit of this thesis, it poses interesting questions for future research. In addition, this study has focussed exclusively on the VA sector that has unique management challenges, issues and products; there is however potential to *replicate the study in other experiential contexts*. An evaluation of the four building blocks in other sectors would provide insight into the factors influencing technology-mediated experiential co-creation in other experience-based settings. Examples could include the festival and event sector, the airline or airport industry, retail, banking or leisure environments that use technology as a method for interactivity, communication or engagement.

8.9 Concluding Remarks

This thesis attempted to explore the role and application of interactive technology as a mediator in the co-creation of VA experiences. Through a holistic, qualitative approach the study was able to identify a range of factors that influence the co-creation of technology-mediated experiences. As such, it represents a novel piece of research that has provided contributions to knowledge and professional practice in tourism, and VA research in particular. The findings presented throughout this thesis demonstrate the complex inter-related factors that influence experience co-creation and, as the concept moves toward paradigmatic status, provides a timely contribution to a rapidly growing body of knowledge. The topic of technology-mediated co-creation is likely to gain further prominence in the academic literature and this is visible in the growing number of academic and industry publications focussing on this phenomenon.

The need to explore co-creation as a holistic multi-actor concept is critical for the future debate. As demonstrated in this thesis, the role of management cannot be understated in providing the experience environment and engagement platforms. Moreover, the visitor perceptions and determinants have a significant influence over the success or failure of co-creative practices. Although there are substantial challenges (particularly for VA managers) in fostering experience co-creation, the findings held in this thesis also pose significant opportunities for industry. As a sector based on enriching and engaging experiences, tourism is particularly well placed to further explore the concept of co-creation as both an operational tool and as a business ethos.

While this thesis predominantly extends knowledge in VA management, the findings and contributions of this study have significant implications for other experiential sectors. This exploratory study in technology-mediated co-creative VA experiences therefore provides the groundwork for future scholarly work and potential lines of inquiry have been highlighted in this chapter. This thesis advances knowledge of experiential co-creation in an increasingly technology-mediated world and hopes to act as a precursor to further debate as to the role technology plays in tourism experiences.

REFERENCES

- Ablett, P. G., & Dyer, P. K. (2009). Heritage and hermeneutics: towards a broader interpretation of interpretation. *Current Issues in Tourism*, 12(3), 209–233. <https://doi.org/10.1080/13683500802316063>
- Adhikari, A., & Bhattacharya, S. (2016). Appraisal of literature on customer experience in tourism sector: review and framework. *Current Issues in Tourism*, 19(4), 296–321. <https://doi.org/10.1080/13683500.2015.1082538>
- Agapito, D., Mendes, J., & Valle, P. (2013). Exploring the conceptualization of the sensory dimension of tourist experiences. *Journal of Destination Marketing & Management*, 2(2), 62–73. <https://doi.org/10.1016/j.jdmm.2013.03.001>
- Ahmad, S., Abbas, M. Y., Taib, M. Z. M., & Masri, M. (2014). Museum Exhibition Design: Communication of Meaning and the Shaping of Knowledge. *Procedia - Social and Behavioral Sciences*, 153(1), 254–265. <https://doi.org/10.1016/j.sbspro.2014.10.059>
- Ahmad, S., Abbas, M. Y., Yusof, W. Z. M., & Taib, M. Z. M. (2013). Museum Learning: Using Research as Best Practice in Creating Future Museum Exhibition. *Procedia - Social and Behavioral Sciences*, 105(1), 370–382. <https://doi.org/10.1016/j.sbspro.2013.11.039>
- Akaka, M. A., Vargo, S. L., & Schau, H. J. (2015). The context of experience. *Journal of Service Management*, 26(2), 206–223. <https://doi.org/10.1108/JOSM-10-2014-0270>
- Albrecht, J. (2017). Current Knowledge and Future Research Directions in Visitor Management. In J. Albrecht (Ed.), *Visitor Management in Tourism Destinations* (pp. 191–196). Wallingford: CAB International.
- Alexander, M. (2012). *Value Co-Creation: Exploring the effects of collaborating with a proactive generation of customers*. Doctoral Thesis, Department of Marketing, Strathclyde University, Glasgow. Retrieved from https://pure.strath.ac.uk/portal/files/12382686/MatthewAlexanderPhD_final.pdf
- Aliyu, A. A., Bello, M. U., Kasim, R., & Martin, D. (2014). Positivist and Non-Positivist Paradigm in Social Science Research: Conflicting Paradigms or Perfect Partners? *Journal of Management and Sustainability*, 4(3), 79–95. <https://doi.org/10.5539/jms.v4n3p79>
- Alkahtani, S. J. H., Xia, J. (Cecilia), Veenendaaland, B., Caulfield, C., & Hughes, M. (2015). Building a conceptual framework for determining individual differences of accessibility to tourist attractions. *Tourism Management Perspectives*, 16(1), 28–42. <https://doi.org/10.1016/j.tmp.2015.05.002>
- Allen, D. (2014). Disneyland: Another kind of reality. *European Journal of American Culture*, 33(1), 33–47. https://doi.org/10.1386/ejac.33.1.33_1
- Allen, S., & Gutwill, J. (2004). Designing With Multiple Interactives: Five Common Pitfalls. *Curator: The Museum Journal*, 47(2), 199–212. Retrieved from <http://dx.doi.org/10.1111/j.2151-6952.2004.tb00117.x>

- Anderson, G. (2004). *Reinventing the Museum: Historical and Contemporary Perspectives on the Paradigm Shift*. Oxford: Altamira Press.
- Andriotis, K. (2010). Brits behaving badly: template analysis of newspaper content. *International Journal of Tourism Anthropology*, 1(1), 15. <https://doi.org/10.1504/IJTA.2010.036844>
- Angrosino, M., & Mays de Perez, K. (2003). Rethinking Observation: From Method to Context. In N. Denzin & Y. Lincoln (Eds.), *Collecting and Interpreting Qualitative Materials* (2nd ed., pp. 107–154). Thousand Oaks: Sage Publications Inc.
- Anker, T. B., Sparks, L., Moutinho, L., & Grönroos, C. (2015). Consumer dominant value creation. *European Journal of Marketing*, 49(3/4), 532–560. <https://doi.org/10.1108/EJM-09-2013-0518>
- Anne Coussement, M., & J. Teague, T. (2013). The new customer-facing technology: mobile and the constantly-connected consumer. *Journal of Hospitality and Tourism Technology*, 4(2), 177–187. <https://doi.org/10.1108/JHTT-12-2011-0035>
- Ansbacher, T. (2002). What Are We Learning?: Outcomes of the Museum Experience. *The Informal Learning Review*, 53(1), 1–5.
- Anstey, T. (2016). ALVA director Bernard Donoghue raises concerns that Brexit will create cultural funding gap [Online] Attractions Management. Retrieved from <http://www.attractionsmanagement.com/index.cfm?pagetype=news&subject=news&codeID=325069>
- Antón, C., Camarero, C., & Garrido, M.-J. (2018). Exploring the experience value of museum visitors as a co-creation process. *Current Issues in Tourism*, 21(12), 1406–1425. <https://doi.org/10.1080/13683500.2017.1373753>
- Apostolakis, A., & Jaffry, S. (2013). An Analysis of Monetary Voluntary Contributions for Cultural Resources: The Case of the British Museum. *Tourism Economics*, 19(3), 631–651. <https://doi.org/10.5367/te.2013.0222>
- Ardley, B., Taylor, N., McLintock, E., Frankii, M., & Leonard, G. (2012). Marketing a memory of the world: Magna Carta and the experiential servicescape. *Marketing Intelligence & Planning*, 30(6), 653–665. <https://doi.org/http://dx.doi.org/10.1108/02634501211262618>
- Arnould, E. J., & Price, L. L. (1993). River Magic: Extraordinary Experience and the Extended Service Encounter. *Journal of Consumer Research*, 20(1), 24–45. <https://doi.org/10.2307/2489198>
- Ashworth, G., & Howard, P. (1999). *European Heritage Planning and Management*. Exeter: Intellect Books.
- Askegaard, S., & Linnet, J. T. (2011). Towards an epistemology of consumer culture theory. *Marketing Theory*, 11(4), 381–404. <https://doi.org/10.1177/1470593111418796>
- Auh, S., Bell, S. J., McLeod, C. S., & Shih, E. (2007). Co-production and customer loyalty in financial services. *Journal of Retailing*, 83(3), 359–370. <https://doi.org/10.1016/j.jretai.2007.03.001>

- Austin, N. K. (2002). Managing heritage attractions: marketing challenges at sensitive historical sites. *International Journal of Tourism Research*, 4(6), 447–457. <https://doi.org/10.1002/jtr.403>
- Azevedo, A. (2010). Designing unique and memorable experiences: co-creation and the “surprise” factor. *International Journal of Hospitality and Tourism Systems*, 3(1), 42–62. Retrieved from http://cassiopeia.ipleiria.pt/esel_eventos/files/3903_10_BEST_PAPER__AntonioAzevedo_4bf562aed71a9.pdf
- Ballantyne, D., Frow, P., Varey, R. J., & Payne, A. (2011). Value propositions as communication practice: Taking a wider view. *Industrial Marketing Management*, 40(2), 202–210. <https://doi.org/10.1016/j.indmarman.2010.06.032>
- Ballantyne, R., Hughes, K., Lee, J., Packer, J., & Sneddon, J. (2018). Visitors’ values and environmental learning outcomes at wildlife attractions: Implications for interpretive practice. *Tourism Management*, 64, 190–201. <https://doi.org/10.1016/j.tourman.2017.07.015>
- Ballantyne, R., Packer, J., & Hughes, K. (2009). Tourists’ support for conservation messages and sustainable management practices in wildlife tourism experiences. *Tourism Management*, 30(5), 658–664. <https://doi.org/10.1016/j.tourman.2008.11.003>
- Ballantyne, R., Packer, J., & Sutherland, L. (2011). Visitors’ memories of wildlife tourism: Implications for the design of powerful interpretive experiences. *Tourism Management*, 32(4), 770–779. <https://doi.org/10.1016/j.tourman.2010.06.012>
- Bannon, L. (2005). A human-centred perspective on interaction design. In A. Pirhonen, P. Saariluoma, H. Isomäki, & C. Roast (Eds.), *Future Interaction Design* (pp. 31–51). London: Springer.
- Barry, A. (1998). On interactivity: Consumers, citizens and culture. In S. Macdonald (Ed.), *The Politics of Display: Museums, Science, Culture* (pp. 98–117). London.
- Bateson, G. (1972). *Steps to an ecology of mind*. New York: Ballantine.
- Bath, B. (2006). The Use of New Technology in the Interpretation of Historic Landscapes. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 163–172). Oxon: Routledge.
- Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, 13(4), 544–559. Retrieved from <http://www.nova.edu/ssss/QR/QR13-4/baxter.pdf>
- Bazeley, P. (2009). Analysing Qualitative Data: More than “Identifying Themes.” In *Malaysian Journal of Qualitative Research* (Vol. 2, pp. 6–22). Retrieved from www.researchsupport.com.au/Bazeley_MJQR_2009.pdf
- Beard, L., Scarles, C., & Tribe, J. (2016). Mess and method: Using ANT in tourism research. *Annals of Tourism Research*, 60(1), 97–110. <https://doi.org/10.1016/j.annals.2016.06.005>

Beattie, J. M., & Schneider, I. E. (2018). Does service type influence satisfaction?: A case study of Edinburgh Castle. *Tourism Management*, 67, 89–97. <https://doi.org/10.1016/j.tourman.2018.01.005>

Beck, L., & Cable, T. (2002). *Interpretation for the 21st century: Fifteen guiding principles for interpreting nature and culture* (2nd ed.). Champaign: Sagamore.

Beckman, E. (1999). Evaluating visitors' reactions to interpretation in Australian National Parks. *Journal of Interpretation Research*, 4(1), 5–20. Retrieved from <https://eric.ed.gov/?id=EJ625406>

Beeho, A., & Prentice, R. (1997). Conceptualizing the experiences of heritage tourists. *Tourism Management*, 18(2), 75–87. [https://doi.org/10.1016/S0261-5177\(96\)00103-3](https://doi.org/10.1016/S0261-5177(96)00103-3)

Benckendorff, P., Moscardo, G., & Murphy, L. (2005). High Tech versus High Touch: Visitor Responses to the Use of Technology in Tourist Attractions. *Tourism Recreation Research*, 30(3), 37–47. <https://doi.org/10.1080/02508281.2005.11081485>

Benckendorff, P., Moscardo, G., & Murphy, L. (2006). Visitor perceptions of technology use in tourist attraction experiences. In *Proceedings from Cutting Edge Research in Tourism - New Directions, Challenges and Applications, School of Management, University of Surrey, UK, 6th-9th June* (pp. 1–17). Guildford.

Benckendorff, P., & Pearce, P. (2003). Australian Tourist Attractions: The Links between Organizational Characteristics and Planning. *Journal of Travel Research*, 42(1), 24–35. <https://doi.org/10.1177/0047287503253948>

Benckendorff, P., Sheldon, P., & Fesenmaier, D. (2014). *Tourism Information Technology* (2nd ed.). Oxfordshire: CABI Publishing.

Benckendorff, P., Tussyadiah, I. P., & Scarles, C. (2018). The Role of Digital Technologies in Facilitating Intergenerational Learning in Heritage Tourism. In B. Stangl & J. Pesonen (Eds.), *Information and Communication Technologies in Tourism 2018. Proceedings of the International Conference in Jönköping, Sweden, January 24-26, 2018* (pp. 463–472). Springer International Publishing. https://doi.org/10.1007/978-3-319-72923-7_35

Bennett, M. (1999). The Role of Technology. In A. Leask & I. Yeoman (Eds.), *Heritage Visitor Attractions: An Operations Management Perspective* (pp. 83–93). London: Cassell.

Benton, G. M. (2013). The role of intrinsic motivation in a science field trip. *Journal of Interpretation Research*, 18(1), 71–81. Retrieved from <http://go.galegroup.com/ps/i.do?id=GALE|A343945407&v=2.1&u=napier&it=r&p=EA1M&sw=w&asid=6f83042d44e5446d024cf730ca4d811f>

Berg, B. (2004). *Qualitative Research Methods for the Social Sciences* (5th ed.). Boston: Pearson Education Inc.

Bertella, G. (2014). The Co-creation of Animal-based Tourism Experience. *Tourism Recreation Research*, 39(1), 115–125. <https://doi.org/10.1080/02508281.2014.11081330>

- Berthon, P., & Hulbert, J. M. (2003). Marketing in metamorphosis: Breaking boundaries. *Business Horizons*, 46(3), 31–40. [https://doi.org/10.1016/S0007-6813\(03\)00027-2](https://doi.org/10.1016/S0007-6813(03)00027-2)
- Betsworth, L., Bowen, H., Robinson, S., & Jones, M. (2014). Performative technologies for heritage site regeneration. *Personal and Ubiquitous Computing*, 18(7), 1631–1650. <https://doi.org/10.1007/s00779-014-0766-3>
- Binkhorst, E. (2006). The Co-Creation Tourism Experience. *Paper Presented at the XV International Tourism and Leisure Symposium, Barcelona*. Available from: http://www.esade.edu/cedit2006/pdfs2006/papers/esther_binkhorst_paper_esade_may_06.pdf, (Accessed 15/06/15).
- Binkhorst, E., & Den Dekker, T. (2009). Agenda for Co-Creation Tourism Experience Research. *Journal of Hospitality Marketing & Management*, 18(2-3), 311–327. <https://doi.org/10.1080/19368620802594193>
- Biran, A., Poria, Y., & Oren, G. (2011). Sought Experiences at (Dark) Heritage Sites. *Annals of Tourism Research*, 38(3), 820–841. <https://doi.org/10.1016/j.annals.2010.12.001>
- Bitner, M., Brown, S., & Meuter, M. (2000). Technology infusion in service encounters. *Journal of the Academy of Marketing Science*, 28(1), 138–149. <https://doi.org/10.1177/0092070300281013>
- Bitner, M. J. (1992). Servicescapes: The Impact of Physical Surroundings on Customers and Employees. *Journal of Marketing*, 56(2), 57. <https://doi.org/10.2307/1252042>
- Björner, E., & Berg, P. O. (2012). Strategic creation of experiences at Shanghai World Expo: a practice of communification. *International Journal of Event and Festival Management*, 3(1), 30–45. <https://doi.org/10.1108/17582951211210924>
- Black, G. (2012). *Transforming Museums in the Twenty-First Century*. Oxon: Routledge.
- Blatter, J., & Haverland, M. (2012). *Designing Case Studies: Explanatory Approaches in Small-N Research*. Basingstoke: Palgrave Macmillan.
- Blazquez-Resino, J. J., Molina, A., & Esteban-Talaya, A. (2015). Service-Dominant Logic in tourism: the way to loyalty. *Current Issues in Tourism*, 18(8), 706–724. <https://doi.org/10.1080/13683500.2013.863853>
- Bødker, M., & Munar, A. M. (2014). New Territories in Information Technologies and Tourism Research. In A. Lew, C. M. Hall, & A. Williams (Eds.), *The Wiley Blackwell Companion to Tourism* (pp. 262–274). Oxford: John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118474648.ch21>
- Boghossian, P. (2010). *Fear of Knowledge: Against Relativism and Constructivism*. Oxford: Clarendon.
- Bohez, S., Daneels, G., Van Herzeele, L., Van Kets, N., Decrock, S., Geyter, M. De, ... Famaey, J. (2018). The crowd as a cameraman: on-stage display of crowdsourced mobile video at large-scale events. *Multimedia Tools and Applications*, 77(1), 597–629. <https://doi.org/10.1007/s11042-016-4257-6>

- Bonn, M. A., Joseph-Mathews, S. M., Dai, M., Hayes, S., & Cave, J. (2007). Heritage/cultural attraction atmospherics: Creating the right environment for the heritage/cultural visitor. *Journal of Travel Research*, 45(3), 345–354. <https://doi.org/10.1177/0047287506295947>
- Booth, B. (1998). Understanding the information needs of visitors to museums. *Museum Management and Curatorship*, 17(2), 139–157. [https://doi.org/10.1016/S0260-4779\(99\)00012-6](https://doi.org/10.1016/S0260-4779(99)00012-6)
- Boswijk, A., Thijssen, T., & Peelen, E. (2005). A New Perspective on the Experience Economy. Retrieved from <https://yuiworld.files.wordpress.com/2011/07/1-a-new-perspective-on-the-experience-economy.pdf>
- Botterill, D., & Platenkamp, V. (2012). *Key Concepts in Tourism Research*. London: Sage Publications Ltd.
- Bramwell, B., & Lane, B. (1993). Interpretation and Sustainable Tourism: The Potential and the Pitfalls. *Journal of Sustainable Tourism*, 1(2), 71–80. <https://doi.org/10.1080/09669589309450706>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Breidbach, C., Brodie, R., & Hollebeek, L. (2014). Beyond virtuality: from engagement platforms to engagement ecosystems. *Managing Service Quality: An International Journal*, 24(6), 592–611. <https://doi.org/10.1108/MSQ-08-2013-0158>
- Brinkmann, S. (2013). *Qualitative Interviewing*. New York: Oxford University Press.
- Brinkmann, S., & Kvale, S. (2005). Confronting the Ethics of Qualitative Research. *Journal of Constructivist Psychology*, 18(2), 157–181. <https://doi.org/10.1080/10720530590914789>
- Brodie, R. J., Hollebeek, L. D., Jurić, B., & Ilić, A. (2011). Customer Engagement: Conceptual Domain, Fundamental Propositions, and Implications for Research. *Journal of Service Research*, 14(3), 252–271. <https://doi.org/10.1177/1094670511411703>
- Brodie, R. J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of Business Research*, 66(1), 105–114. <https://doi.org/10.1016/j.jbusres.2011.07.029>
- Brooks, J., McCluskey, S., Turley, E., & King, N. (2015). The Utility of Template Analysis in Qualitative Psychology Research. *Qualitative Research in Psychology*, 12(2), 202–222. <https://doi.org/10.1080/14780887.2014.955224>
- Bryant, M. (2006). Tilden's Children: Interpretation in Britain's National Parks. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 173–188). Oxon: Routledge.
- Bryce, D., Curran, R., O'Gorman, K., & Taheri, B. (2015). Visitors' engagement and authenticity: Japanese heritage consumption. *Tourism Management*, 46, 571–581. <https://doi.org/10.1016/j.tourman.2014.08.012>
- Bryman, A. (2001). *Social Research Methods*. Oxford: Oxford University Press.

- Bryman, A. (2012). *Social Research Methods* (4th ed.). Oxford: Oxford University Press.
- Buhalis, D., & Darcy, S. (2011). *Accessible Tourism: Concepts and Issues*. Bristol: Channel View Publications.
- Buhalis, D., & O'Connor, P. (2005). Information Communication Technology Revolutionizing Tourism. *Tourism Recreation Research*, 30(3), 7–16. <https://doi.org/10.1080/02508281.2005.11081482>
- Bulmer, M. (2001). The Ethics of Social Research. In N. Gilbert (Ed.), *Researching Social Life* (2nd ed., pp. 45–57). London: Sage Publications Ltd.
- Buonincontri, P., Morvillo, A., Okumus, F., & van Niekerk, M. (2017). Managing the experience co-creation process in tourism destinations: Empirical findings from Naples. *Tourism Management*, 62, 264–277. <https://doi.org/10.1016/j.tourman.2017.04.014>
- Burr, V. (2003). *Social Constructionism*. New York: Routledge.
- Cabiddu, F., Lui, T.-W., & Piccoli, G. (2013). Managing Value Co-creation in the Tourism Industry. *Annals of Tourism Research*, 42(1), 86–107. <https://doi.org/10.1016/j.annals.2013.01.001>
- Calver, S. J., & Page, S. J. (2013). Enlightened hedonism: Exploring the relationship of service value, visitor knowledge and interest, to visitor enjoyment at heritage attractions. *Tourism Management*, 39(1), 23–36. <https://doi.org/10.1016/j.tourman.2013.03.008>
- Camarero, C., Garrido, M. J., & Vicente, E. (2015). Achieving effective visitor orientation in European museums. Innovation versus custodial. *Journal of Cultural Heritage*, 16(2), 228–235. <https://doi.org/10.1016/j.culher.2014.05.006>
- Campos, A. C., Mendes, J., Valle, P. O. do, & Scott, N. (2015). Co-creation of tourist experiences: a literature review. *Current Issues in Tourism*, 21(4), 369–400. <https://doi.org/10.1080/13683500.2015.1081158>
- Campos, A. C., Mendes, J., Valle, P. O. do, & Scott, N. (2017). Co-creating animal-based tourist experiences: Attention, involvement and memorability. *Tourism Management*, 63, 100–114. <https://doi.org/10.1016/j.tourman.2017.06.001>
- Candi, M., Beltagui, A., & Riedel, J. C. K. H. (2013). Innovation through Experience Staging: Motives and Outcomes. *Journal of Product Innovation Management*, 30(2), 279–297. <https://doi.org/10.1111/j.1540-5885.2012.00999.x>
- Candlin, F. (2017). Rehabilitating unauthorised touch or why museum visitors touch the exhibits. *The Senses and Society*, 12(3), 251–266. <https://doi.org/10.1080/17458927.2017.1367485>
- Carnall, M., Ashby, J., & Ross, C. (2013). Natural history museums as provocateurs for dialogue and debate. *Museum Management and Curatorship*, 28(1), 55–71. <https://doi.org/10.1080/09647775.2012.754630>

- Carrozzino, M., & Bergamasco, M. (2010). Beyond virtual museums: Experiencing immersive virtual reality in real museums. *Journal of Cultural Heritage*, 11(4), 452–458. <https://doi.org/http://dx.doi.org/10.1016/j.culher.2010.04.001>
- Carù, A., & Cova, B. (2006). How to facilitate immersion in a consumption experience: appropriation operations and service elements. *Journal of Consumer Behaviour*, 5(1), 4–14. <https://doi.org/10.1002/cb.30>
- Carù, A., & Cova, B. (2015). Co-creating the collective service experience. *Journal of Service Management*, 26(2), 276–294. <https://doi.org/10.1108/JOSM-07-2014-0170>
- Chambers, E. (2009). From authenticity to significance: Tourism on the frontier of culture and place. *Futures*, 41(6), 353–359. <https://doi.org/10.1016/j.futures.2008.11.003>
- Chandler, J. D., & Vargo, S. L. (2011). Contextualization and value-in-context: How context frames exchange. *Marketing Theory*, 11(1), 35–49. <https://doi.org/10.1177/1470593110393713>
- Chathoth, P., Altinay, L., Harrington, R. J., Okumus, F., & Chan, E. S. W. (2013). Co-production versus co-creation: A process based continuum in the hotel service context. *International Journal of Hospitality Management*, 32(1), 11–20. <https://doi.org/10.1016/j.ijhm.2012.03.009>
- Chathoth, P. K., Ungson, G. R., Harrington, R. J., & Chan, E. S. W. (2016). Co-creation and higher order customer engagement in hospitality and tourism services. *International Journal of Contemporary Hospitality Management*, 28(2), 222–245. <https://doi.org/10.1108/IJCHM-10-2014-0526>
- Chen, C.-H. T. (2011). Extending Service Dominant Logic: Proposition, Lexicon and Framework. Retrieved May 29, 2015, from [http://www.naplesforumonservice.it/uploads/files/Chen Extending Service Dominant Logic Proposition, Lexicon and Framework.pdf](http://www.naplesforumonservice.it/uploads/files/Chen%20Extending%20Service%20Dominant%20Logic%20Proposition,%20Lexicon%20and%20Framework.pdf)
- Chen, H., & Rahman, I. (2018). Cultural tourism: An analysis of engagement, cultural contact, memorable tourism experience and destination loyalty. *Tourism Management Perspectives*, 26, 153–163. <https://doi.org/10.1016/j.tmp.2017.10.006>
- Chen, H.-J., Hwang, S.-N., & Lee, C. (2006). Visitors' characteristics of guided interpretation tours. *Journal of Business Research*, 59(10-11), 1167–1181. <https://doi.org/10.1016/j.jbusres.2006.09.006>
- Cho, J. (2017). *Evaluating Qualitative Research* (Vol. 1). New York: Oxford University Press. Retrieved from <http://www.oxfordscholarship.com/view/10.1093/oso/9780199330010.001.0001/oso-9780199330010>
- Chronis, A. (2005a). Coconstructing heritage at the gettysburg storyscape. *Annals of Tourism Research*, 32(2), 386–406. <https://doi.org/10.1016/j.annals.2004.07.009>
- Chronis, A. (2005b). Our Byzantine heritage: consumption of the past and its experiential benefits. *Journal of Consumer Marketing*, 22(4), 213–222. <https://doi.org/10.1108/07363760510605326>

- Chronis, A. (2006). Heritage of the senses. *Tourist Studies*, 6(3), 267–296.
<https://doi.org/10.1177/1468797607076674>
- Chronis, A. (2012a). Between place and story: Gettysburg as tourism imaginary. *Annals of Tourism Research*, 39(4), 1797–1816.
<https://doi.org/http://dx.doi.org/10.1016/j.annals.2012.05.028>
- Chronis, A. (2012b). Tourists as Story-Builders: Narrative Construction at a Heritage Museum. *Journal of Travel & Tourism Marketing*, 29(5), 444–459.
<https://doi.org/10.1080/10548408.2012.691395>
- Chronis, A. (2015a). Moving bodies and the staging of the tourist experience. *Annals of Tourism Research*, 55, 124–140.
<https://doi.org/10.1016/j.annals.2015.09.008>
- Chronis, A. (2015b). Substantiating Byzantium: The role of artifacts in the co-construction of narratives. *Journal of Consumer Behaviour*, 14(3), 180–192.
<https://doi.org/10.1002/cb.1509>
- Chung, N., Han, H., & Joun, Y. (2015). Tourists' intention to visit a destination: The role of augmented reality (AR) application for a heritage site. *Computers in Human Behavior*, 50(1), 588–599. <https://doi.org/10.1016/j.chb.2015.02.068>
- Chung, N., Lee, H., Kim, J.-Y., & Koo, C. (2018). The Role of Augmented Reality for Experience-Influenced Environments: The Case of Cultural Heritage Tourism in Korea. *Journal of Travel Research*, 57(5), 627–643.
<https://doi.org/10.1177/0047287517708255>
- Coffey, A., & Atkinson, P. (1996). *Making Sense of Qualitative Data: Complementary Research Strategies*. Thousand Oaks: Sage Publications Inc.
- Coghlan, A., Buckley, R., & Weaver, D. (2012). A framework for analysing awe in tourism experiences. *Annals of Tourism Research*, 39(3), 1710–1714.
<https://doi.org/10.1016/j.annals.2012.03.007>
- Cohen, E. (1972). Towards a Sociology of International Tourism. *Social Research*, 39(1), 164–89.
- Cohen, E. (1979). A Phenomenology of Tourist Experiences. *Sociology*, 13(2), 179–201. Retrieved from <http://soc.sagepub.com/content/13/2/179.abstract>
- Cohen, S. A. (2013). Reflections on reflexivity in leisure and tourism studies. *Leisure Studies*. <https://doi.org/10.1080/02614367.2012.662522>
- Collin-Lachaud, I., & Passebois, J. (2008). Do Immersive Technologies Add Value to the Museumgoing Experience? An Exploratory Study Conducted at France's Paléosite. *International Journal of Arts Management*, 11(1), 60–71. Retrieved from <http://www.jstor.org/stable/41064975>
- Connell, J., & Meyer, D. (2004). Modelling the Visitor Experience in the Gardens of Great Britain. *Current Issues in Tourism*, 7(3), 183–216.
<https://doi.org/10.1080/13683500408667979>

- Connell, J., & Page, S. (2009). Visitor Attractions. In S. Page (Ed.), *Tourism Management: Managing for Change* (3rd ed., pp. 341–375). Oxford: Butterworth-Heinemann Ltd.
- Connell, J., & Page, S. J. (2008). Exploring the spatial patterns of car-based tourist travel in Loch Lomond and Trossachs National Park, Scotland. *Tourism Management*, 29(3), 561–580. <https://doi.org/10.1016/j.tourman.2007.03.019>
- Cooper, C. (1991). The technique of interpretation. In S. Medlik (Ed.), *Managing Tourism* (pp. 224–230). Oxford: Butterworth-Heinemann Ltd.
- Cooper, C., Fletcher, J., Fyall, A., Gilbert, D., & Wanhill, S. (2004). *Tourism: Principles and Practice* (3rd ed.). Harlow: Financial Times Prentice Hall.
- Copeland, T. (2006). Constructing Pasts: Interpreting the Historic Environment. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 83–96). Oxon: Routledge.
- Cova, B., & Dallı, D. (2009). Working consumers: the next step in marketing theory? *Marketing Theory*, 9 (3), 315–339. <https://doi.org/10.1177/1470593109338144>
- Cranmer, E., Jung, T., tom Dieck, M. C., & Miller, A. (2016). Understanding the Acceptance of Augmented Reality at an Organisational Level: The Case of Geevor Tin Mine Museum. In A. Inversini & R. Schegg (Eds.), *Information and Communication Technologies in Tourism 2016: Proceedings of the International Conference in Bilbao, Spain, February 2-5, 2016* (pp. 637–650). Springer International Publishing. https://doi.org/10.1007/978-3-319-28231-2_46
- Creswell, J. (2014). *Research Design: Qualitative, Quantitative & Mixed Methods Approaches* (4th ed.). Thousand Oaks: Sage Publications Inc.
- Crotty, M. (1998). *The Foundations of Social Research: Meaning and perspective in the research process*. St Leonards, NSW: Allen & Urwin.
- Crowther, P., & Donlan, L. (2011). Value-creation space: The role of events in a service-dominant marketing paradigm. *Journal of Marketing Management*, 27(13-14), 1444–1463. <https://doi.org/10.1080/0267257X.2011.626786>
- Csikszentmihalyi, M. (1997). *Finding flow: the psychology of engagement with everyday life*. New York: BasicBooks.
- Csikszentmihalyi, M. (2000). The Costs and Benefits of Consuming. *Journal of Consumer Research*, 27(2), 267–272. <https://doi.org/10.1086/314324>
- Csikszentmihalyi, M. (2002). *Flow: the classic work on how to achieve happiness*. London: Rider.
- Daengbuppha, J., Hemmington, N., & Wilkes, K. (2006). Using grounded theory to model visitor experiences at heritage sites. *Qualitative Market Research*, 9(4), 367–388. <https://doi.org/http://dx.doi.org/10.1108/13522750610689096>
- Dahl, D. W., & Moreau, C. P. (2007). Thinking Inside the Box: Why Consumers Enjoy Constrained Creative Experiences. *Journal of Marketing Research*, 44(3), 357–369. <https://doi.org/10.1509/jmkr.44.3.357>

Dancstep, T., Gutwill, J. P., & Sindorf, L. (2015). Comparing the Visitor Experience at Immersive and Tabletop Exhibits. *Curator: The Museum Journal*, 58(4), 401–422. <https://doi.org/10.1111/cura.12137>

de Rojas, C., & Camarero, C. (2008). Visitors' experience, mood and satisfaction in a heritage context: Evidence from an interpretation center. *Tourism Management*, 29(3), 525–537. <https://doi.org/10.1016/j.tourman.2007.06.004>

Deetz, S. (1996). Crossroads—Describing Differences in Approaches to Organization Science: Rethinking Burrell and Morgan and Their Legacy. *Organization Science*, 7(2), 191–207. <https://doi.org/10.1287/orsc.7.2.191>

Deighton, J. (1992). The Consumption of Performance. *Journal of Consumer Research*, 19(3), 362–372. <https://doi.org/10.2307/2489394>

Del Chiappa, G., Andreu, L., & G. Gallarza, M. (2014). Emotions and visitors' satisfaction at a museum. *International Journal of Culture, Tourism and Hospitality Research*, 8(4), 420–431. <https://doi.org/10.1108/IJCTHR-03-2014-0024>

Denzin, N., & Lincoln, Y. (2003). Introduction: The Discipline and Practice of Qualitative Research. In N. Denzin & Y. Lincoln (Eds.), *Collecting and Interpreting Qualitative Materials* (pp. 1–46). 2nd ed, Thousand Oaks: Sage Publications Inc.

Denzin, N., & Lincoln, Y. (2011a). Introduction: The Discipline and Practice of Qualitative Research. In N. Denzin & Y. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (pp. 1–20). 4th Ed, Thousand Oaks: Sage Publications Inc.

Denzin, N., & Lincoln, Y. (2011b). Paradigms and Perspectives in Contention. In N. Denzin & Y. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (pp. 91–95). Thousand Oaks: Sage Publications Inc.

Dickinson, J. E., Ghali, K., Cherrett, T., Speed, C., Davies, N., & Norgate, S. (2014). Tourism and the smartphone app: capabilities, emerging practice and scope in the travel domain. *Current Issues in Tourism*, 17(1), 84–101. <https://doi.org/10.1080/13683500.2012.718323>

Dickinson, J. E., Hibbert, J. F., & Filimonau, V. (2016). Mobile technology and the tourist experience: (Dis)connection at the campsite. *Tourism Management*, 57, 193–201. <https://doi.org/10.1016/j.tourman.2016.06.005>

Dierking, L. D. (1998). Interpretation as a social experience. In D. Uzzell & R. Ballantyne (Eds.), *Contemporary Issues in Heritage and Environmental Interpretation: Problems and Prospects* (pp. 56–76). London: The Stationary Office.

Dimache, A., Wondirad, A., & Agyeiwaah, E. (2017). One museum, two stories: Place identity at the Hong Kong Museum of History. *Tourism Management*, 63(1), 287–301. <https://doi.org/10.1016/j.tourman.2017.06.020>

Dong, B., Evans, K., & Zou, S. (2008). The effects of customer participation in co-created service recovery. *Journal of the Academy of Marketing Science*, 36(1), 123–137. <https://doi.org/10.1007/s11747-007-0059-8>

Dong, P., & Siu, N. Y.-M. (2013). Servicescape elements, customer predispositions and service experience: The case of theme park visitors. *Tourism Management*, 36(1), 541–551. <https://doi.org/10.1016/j.tourman.2012.09.004>

Dowling, M. (2012). Reflexivity. In L. M. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Methods*2 (pp. 748–749). Thousand Oaks: SAGE Publications Inc.

Dueholm, J., & Smed, K. M. (2014). Heritage authenticities – a case study of authenticity perceptions at a Danish heritage site. *Journal of Heritage Tourism*, 9(4), 285–298. <https://doi.org/10.1080/1743873X.2014.905582>

Dul, J., & Hak, T. (2008). *Case Study Methodology in Business Research*. Oxford: Butterworth-Heinemann Ltd.

Dumitrescu, L., Stanciu, O., Țichindelean, M., & Vinerean, S. (2012). The Importance of Establishing Customer Experiences. *Studies in Business and Economics*, 7(1), 56–61. Retrieved from <https://econpapers.repec.org/RePEc:blg:journl:v:7:y:2012:i:1:p:56-61>

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2008). *Management Research* (3rd ed.). London: Sage Publications Ltd.

Echeverri, P., & Skålén, P. (2011). Co-creation and co-destruction: A practice-theory based study of interactive value formation. *Marketing Theory*, 11 (3), 351–373. <https://doi.org/10.1177/1470593111408181>

Economist, T. (2006). Virtual online worlds: Living a second life. Retrieved October 3, 2015, from <http://www.economist.com/node/7963538>

Edensor, T. (2000). Staging tourism. *Annals of Tourism Research*, 27(2), 322–344. [https://doi.org/10.1016/S0160-7383\(99\)00082-1](https://doi.org/10.1016/S0160-7383(99)00082-1)

Edvardsson, B., & Olsson, J. (1996). Key Concepts for New Service Development. *The Service Industries Journal*, 16(2), 140–164. <https://doi.org/10.1080/02642069600000019>

Edvardsson, B., Tronvoll, B., & Gruber, T. (2011). Expanding understanding of service exchange and value co-creation: a social construction approach. *Journal of the Academy of Marketing Science*, 39(2), 327–339. <https://doi.org/10.1007/s11747-010-0200-y>

Eide, D., Fuglsang, L., & Sundbo, J. (2017). Management challenges with the maintenance of tourism experience concept innovations: Toward a new research agenda. *Tourism Management*, 63, 452–463. <https://doi.org/10.1016/j.tourman.2017.06.029>

Eisenhardt, K., & Graebner, M. (2007). Theory building from cases: Opportunities and challenges. *The Academy of Management Journal*, 50(1), 25–32. <https://doi.org/10.1002/job>.

Etgar, M. (2008). A descriptive model of the consumer co-production process. *Journal of the Academy of Marketing Science*, 36(1), 97–108. <https://doi.org/10.1007/s11747-007-0061-1>

Falk, J. (2004). The director's cut: Toward an improved understanding of learning from museums. *Science Education*, 88(1), 83–96. <https://doi.org/10.1002/sce.20014>

- Falk, J., & Dierking, L. (2010). The 95 Percent Solution. *American Scientist*, 98(6), 486. <https://doi.org/10.1511/2010.87.486>
- Falk, J. H., Scott, C., Dierking, L., Rennie, L., & Jones, M. C. (2004). Interactives and Visitor Learning. *Curator: The Museum Journal*, 47(2), 171–198. <https://doi.org/10.1111/j.2151-6952.2004.tb00116.x>
- Falk, J. H., & Storksdieck, M. (2009). Science learning in a leisure setting. *Journal of Research in Science Teaching*, 47(2), 194–212. <https://doi.org/10.1002/tea.20319>
- Farias, S. A. de, Aguiar, E. C., & Melo, F. V. S. (2014). Store Atmospherics and Experiential Marketing: A Conceptual Framework and Research Propositions for An Extraordinary Customer Experience. *International Business Research*, 7(2), 87–99. <https://doi.org/10.5539/ibr.v7n2p87>
- Fave, A. D. (2007). Theoretical Foundations of ESM. In J. Hektner, J. Schmidt, & M. Csikszentmihalyi (Eds.), *Experience Sampling Method* (pp. 16–32). Thousand Oaks: Sage Publications Inc.
- Fernandes, T., & Neves, S. (2014). The role of servicescape as a driver of customer value in experience-centric service organizations: the Dragon Football Stadium case. *Journal of Strategic Marketing*. <https://doi.org/10.1080/0965254X.2014.914058>
- Finn, M., Elliott-White, M., & Walton, M. (2000). *Tourism & Leisure Research Methods: Data collection, analysis and interpretation*. Harlow: Pearson Education Limited.
- Firth, T. M. (2011). Tourism as a means to industrial heritage conservation: Achilles heel or saving grace? *Journal of Heritage Tourism*, 6(1), 45–62. <https://doi.org/10.1080/1743873X.2010.536233>
- Fisher, S. (2000). Museums, Galleries and the Arts World. In L. Marks (Ed.), *Qualitative Research in Context* (pp. 155–174). Henley-on-Thames: Admap Publications.
- FitzPatrick, M., Davey, J., Muller, L., & Davey, H. (2013). Value-creating assets in tourism management: Applying marketing's service-dominant logic in the hotel industry. *Tourism Management*, 36(1), 86–98. <https://doi.org/10.1016/j.tourman.2012.11.009>
- Fletcher, J., Fyall, A., Gilbert, D., & Wanhill, S. (2013). *Tourism: Principles and Practice* (5th ed.). Harlow: Pearson Education Limited.
- Flick, U. (2007). *Managing Quality in Qualitative Research*. London: SAGE Publications, Ltd. Retrieved from <http://srmo.sagepub.com/view/managing-quality-in-qualitative-research/SAGE.xml>
- Flick, U. (2007). Sampling, Selecting and Access. In *Designing Qualitative Research* (pp. 25–35). London: SAGE Publications, Ltd. <https://doi.org/10.4135/9781849208826.n3>
- Flick, U. (2014). *An Introduction to Qualitative Research*. London: Sage Publications Ltd.

- Fliess, S., Dyck, S., & Schmelter, M. (2014). Mirror, mirror on the wall – how customers perceive their contribution to service provision. *Journal of Service Management*, 25(4), 433–469. <https://doi.org/10.1108/JOSM-09-2013-0266>
- Flyvberg, B. (2011). Case Study. In N. Denzin & Y. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (pp. 301–316). 4th Ed, London: Sage Publications Inc.
- Fopp, M. (1997). *Managing Museums and Galleries*. London: Routledge.
- Foster, L. (2004). Progressive Access: Unique Solutions for Historic Buildings. *Journal of Architectural Conservation*, 10(3), 73–86. <https://doi.org/10.1080/13556207.2004.10784927>
- Friedrichs, J., & Lüdtke, H. (1975). *Participant Observation: Theory and Practice*. Farnborough: Saxon House.
- Frochot, I., & Batat, W. (2013). *Marketing and Designing the Tourist Experience*. Oxford: Goodfellow Publishers Limited.
- Frow, P., McColl-Kennedy, J. R., Hilton, T., Davidson, A., Payne, A., & Brozovic, D. (2014). Value propositions: A service ecosystems perspective. *Marketing Theory*, 14(3), 327–351. <https://doi.org/10.1177/1470593114534346>
- Frow, P., Nenonen, S., Payne, A., & Storbacka, K. (2015). Managing Co-creation Design: A Strategic Approach to Innovation. *British Journal of Management*, 26(3), 463–483. <https://doi.org/10.1111/1467-8551.12087>
- Frow, P., & Payne, A. (2007). Towards the “perfect” customer experience. *Journal of Brand Management*, 15(2), 89–101. <https://doi.org/http://dx.doi.org/10.1057/palgrave.bm.2550120>
- Fu, Y., Kim, S., & Zhou, T. (2015). Staging the “authenticity” of intangible heritage from the production perspective: the case of craftsmanship museum cluster in Hangzhou, China. *Journal of Tourism and Cultural Change*, 13(4), 285–300. <https://doi.org/10.1080/14766825.2014.983439>
- Fuchs, S. (1999). Social Science: Beyond Constructivism and Relativism / Science. *Contemporary Sociology*, 28(1), 118–119. Retrieved from <https://login.ezproxy.napier.ac.uk/login?url=http://search.proquest.com/docview/233584425?accountid=16607>
- Füller, J., Hutter, K., & Faullant, R. (2011). Why co-creation experience matters? Creative experience and its impact on the quantity and quality of creative contributions. *R&D Management*, 41(3), 259–273. <https://doi.org/10.1111/j.1467-9310.2011.00640.x>
- Fyall, A., Leask, A., & Garrod, B. (2001). Scottish visitor attractions: a collaborative future? *International Journal of Tourism Research*, 3(3), 211–228. <https://doi.org/10.1002/jtr.313>
- Fyall, A., Leask, A., & Garrod, B. (2002). Introduction: visitor attractions. *International Journal of Tourism Research*, 4(5), 333–335. <https://doi.org/10.1002/jtr.384>

- Galvagno, M., & Dalli, D. (2014). Theory of value co-creation: a systematic literature review. *Managing Service Quality: An International Journal*, 24(6), 643–683. <https://doi.org/10.1108/MSQ-09-2013-0187>
- Gao, J., Zhang, C., & Huang, Z. (Joy). (2018). Chinese tourists' views of nature and natural landscape interpretation: a generational perspective. *Journal of Sustainable Tourism*, 26(4), 668–684. <https://doi.org/10.1080/09669582.2017.1377722>
- Garrod, B., & Fyall, A. (2000). Managing heritage tourism. *Annals of Tourism Research*, 27(3), 682–708. [https://doi.org/10.1016/S0160-7383\(99\)00094-8](https://doi.org/10.1016/S0160-7383(99)00094-8)
- Garrod, B., Fyall, A., & Leask, A. (2002). Scottish visitor attractions: managing visitor impacts. *Tourism Management*, 23(3), 265–279. [https://doi.org/10.1016/S0261-5177\(01\)00077-2](https://doi.org/10.1016/S0261-5177(01)00077-2)
- Garrod, B., Fyall, A., Leask, A., & Reid, E. (2012). Engaging residents as stakeholders of the visitor attraction. *Tourism Management*, 33(5), 1159–1173. <https://doi.org/10.1016/j.tourman.2011.11.014>
- Gee, J. P., & Handford, M. (2012). *The Routledge Handbook of Discourse Analysis*. Oxon: Routledge. <https://doi.org/10.4324/9780203809068.ch7>
- Gemser, G., & Perks, H. (2015). Co-Creation with Customers: An Evolving Innovation Research Field. *Journal of Product Innovation Management*, 32(5), 660–665. <https://doi.org/10.1111/jpim.12279>
- Gentile, C., Spiller, N., & Noci, G. (2007). How to Sustain the Customer Experience: An overview of experience components that co-create value with the customer. *European Management Journal*, 25(5), 395–410. <https://doi.org/10.1016/j.emj.2007.08.005>
- Gergen, K., & Gergen, M. (2007). Social Construction and Research Methodology. In W. Outhwaite & S. Turner (Eds.), *The SAGE Handbook of Social Science Methodology* (pp. 461–478). London: Sage Publications Ltd.
- Gergen, K. J. (2009). *An invitation to social construction* (2nd ed.). London: Sage Publications Ltd.
- Gilbert, J., & Stocklmayer, S. (2001). The design of interactive exhibits to promote the making of meaning. *Museum Management and Curatorship*, 19(1), 41–50. [https://doi.org/10.1016/S0260-4779\(01\)00015-2](https://doi.org/10.1016/S0260-4779(01)00015-2)
- Gilbert, N. (2001). Research, Theory and Method. In N. Gilbert (Ed.), *Researching Social Life* (pp. 14–27). 2nd ed, London: Sage Publications Ltd.
- Gilmore, A., & Rentschler, R. (2002). Changes in museum management: A custodial or marketing emphasis. *Journal of Management Development*, 21(10), 745–760. <https://doi.org/10.1108/02621710210448020>
- Goffman, E. (1959). *The Presentation of Self in Everyday Life*. Middlesex: Penguin Books Ltd.
- Goldstein, S., Johnston, R., Duffy, J., & Rao, J. (2002). The service concept: the missing link in service design research? *Journal of Operations Management*, 20(2), 121–134. [https://doi.org/10.1016/S0272-6963\(01\)00090-0](https://doi.org/10.1016/S0272-6963(01)00090-0)

- Gombault, A., Allal-Chérif, O., & Décamps, A. (2016). ICT adoption in heritage organizations: Crossing the chasm. *Journal of Business Research*, 69(11), 5135–5140. <https://doi.org/10.1016/j.jbusres.2016.04.093>
- Goodall, B. (2006). Disabled Access and Heritage Attractions. *Tourism Culture & Communication*, 7(1), 57–78. <https://doi.org/10.3727/109830406778493551>
- Goodey, B. (2006). Interpreting Urban Heritage. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 9–32). Oxon: Routledge.
- Goodson, L., & Phillimore, J. (2004). The inquiry paradigm in qualitative tourism research. In J. Phillimore & L. Goodson (Eds.), *Qualitative Research in Tourism: Ontologies, Epistemologies and Methodologies* (pp. 30–45). Oxon: Routledge.
- Goulding, C. (1999). Consumer research, interpretive paradigms and methodological ambiguities. *European Journal of Marketing*, 33(9/10), 859–873. <https://doi.org/10.1108/03090569910285805>
- Goulding, C. (2000a). The commodification of the past, postmodern pastiche, and the search for authentic experiences at contemporary heritage attractions. *European Journal of Marketing*, 34(7), 835–853. <https://doi.org/10.1108/03090560010331298>
- Goulding, C. (2000b). The museum environment and the visitor experience. *European Journal of Marketing*, 34(3/4), 261–278. <https://doi.org/10.1108/03090560010311849>
- Gradén, L., & O'Dell, T. (2016). Museums and Heritage Collections in the Cultural Economy: The Challenge of Addressing Wider Audiences and Local Communities. *Museum International*, 68(3-4), 48–67. <https://doi.org/10.1111/muse.12135>
- Graham, M., & Lennon, J. J. (2002). The dilemma of operating a strategic approach to human resource management in the Scottish visitor attraction sector. *International Journal of Contemporary Hospitality Management*, 14(5), 213–220. <https://doi.org/10.1108/09596110210433736>
- Greer, C. R., Lusch, R. F., & Vargo, S. L. (2016). A service perspective. *Organizational Dynamics*, 45(1), 28–38. <https://doi.org/10.1016/j.orgdyn.2015.12.004>
- Gretzel, U. (2011). Intelligent systems in tourism. *Annals of Tourism Research*, 38(3), 757–779. <https://doi.org/10.1016/j.annals.2011.04.014>
- Grissemann, U. S., & Stokburger-Sauer, N. E. (2012). Customer co-creation of travel services: The role of company support and customer satisfaction with the co-creation performance. *Tourism Management*, 33(6), 1483–1492. <https://doi.org/10.1016/j.tourman.2012.02.002>
- Grönroos, C. (2006). Adopting a service logic for marketing. *Marketing Theory*, 6(3), 317–333. <https://doi.org/10.1177/1470593106066794>
- Grönroos, C., & Gummerus, J. (2014). The service revolution and its marketing implications: service logic vs service-dominant logic. *Managing Service Quality: An International Journal*, 24(3), 206–229. <https://doi.org/10.1108/MSQ-03-2014-0042>

Grönroos, C., & Ravald, A. (2011). Service as business logic: implications for value creation and marketing. *Journal of Service Management*, 22(1), 5–22. <https://doi.org/10.1108/09564231111106893>

Grönroos, C., & Voima, P. (2013). Critical service logic: making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, 41(2), 133–150. <https://doi.org/10.1007/s11747-012-0308-3>

Grove, S., & Fisk, R. (1992). The Service Experience as Theater. In J. John F. Sherry & B. Sternthal (Eds.), *NA - Advances in Consumer Research* (pp. 455–461). Provo: Association for Consumer Research. Retrieved from <http://www.acrwebsite.org/search/view-conference-proceedings.aspx?Id=7341>

Grover, V., & Kohli, R. (2012). Co-creating IT Value: New Capabilities and Metrics for Multifirm Environments. *MIS Quarterly*, 36(1), 225–232. <https://doi.org/10.2307/41410415>

Guba, E. (1990). The Alternative Paradigm Dialog. In E. Guba (Ed.), *The Paradigm Dialog* (pp. 17–30). Newbury Park, CA: Sage Publications Inc.

Guba, E., & Lincoln, Y. (1998). Competing Paradigms in Qualitative Research. In N. Denzin & Y. Lincoln (Eds.), *The Landscape of Qualitative Research: Theories and Issues* (pp. 195–220). Thousand Oaks: Sage Publications Inc.

Guba, E., & Lincoln, Y. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. Denzin & Y. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (pp. 191–215). 3rd Ed, Thousand Oaks: Sage Publications Inc.

Guercini, S. (2014). New qualitative research methodologies in management. *Management Decision*, 52(4), 662–674. <https://doi.org/10.1108/MD-11-2013-0592>

Gummerus, J. (2013). Value creation processes and value outcomes in marketing theory: Strangers or siblings? . *Marketing Theory* , 13 (1), 19–46. <https://doi.org/10.1177/1470593112467267>

Gummesson, E. (2007). Exit services marketing - enter service marketing. *Journal of Customer Behaviour*, 6(2), 113–141. Retrieved from http://www.researchgate.net/publication/233591431_Exit_services_marketing_-_enter_service_marketing

Gummesson, E., Lusch, R. F., & Vargo, S. L. (2010). Transitioning from service management to service-dominant logic. *International Journal of Quality and Service Sciences*, 2(1), 8–22. <https://doi.org/10.1108/17566691011026577>

Gummesson, E., & Mele, C. (2010). Marketing as Value Co-creation Through Network Interaction and Resource Integration. *Journal of Business Market Management*, 4(4), 181–198. <https://doi.org/10.1007/s12087-010-0044-2>

Gummesson, E., Mele, C., & Polese, F. (2018). Complexity and viability in service ecosystems. *Marketing Theory*, (Article in press.). <https://doi.org/10.1177/1470593118774201>

Gunn, C. (1972). *Vacationscape, Designing tourist regions*. Austin: University of Texas.

Gupta, S., & Vajic, M. (2000). The Contextual and Dialectical Nature of Experiences. In J. Fitzsimmons & M. Fitzsimmons (Eds.), *New Service Development: Creating Memorable Experiences* (pp. 33–52). Thousand Oaks: Sage Publications Inc.

Guthrie, C., & Anderson, A. (2010). Visitor narratives: researching and illuminating actual destination experience. *Qualitative Market Research: An International Journal*, 13(2), 110–129. <https://doi.org/10.1108/13522751011032575>

Guttentag, D. A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management*, 31(5), 637–651. <https://doi.org/10.1016/j.tourman.2009.07.003>

Haahti, A. (2003). Theory of Relationship Cultivation: A Point of View to Design of Experience. *Journal of Business and Management*, 9(3), 303–321. Retrieved from <https://ezp.napier.ac.uk/login?url=http://search.proquest.com/docview/211509360?accountid=16607>

Ham, S. (1992). *Environmental Interpretation: A Practical Guide for People with Big Ideas and Small Budgets*. Golden: North American Press.

Hampp, C., & Schwan, S. (2014). Perception and evaluation of authentic objects: findings from a visitor study. *Museum Management and Curatorship*, 29(4), 349–367. <https://doi.org/10.1080/09647775.2014.938416>

Hampp, C., & Schwan, S. (2015). The Role of Authentic Objects in Museums of the History of Science and Technology: Findings from a visitor study. *International Journal of Science Education, Part B*, 5(2), 161–181. <https://doi.org/10.1080/21548455.2013.875238>

Han, D.-I., tom Dieck, M. C., & Jung, T. (2018). User experience model for augmented reality applications in urban heritage tourism. *Journal of Heritage Tourism*, 13(1), 46–61. <https://doi.org/10.1080/1743873X.2016.1251931>

Harris, C. D. (2005). *Key Concepts in Leisure Studies*. London: Sage Publications Ltd.

Harrison, P., & Shaw, R. (2004). Consumer Satisfaction and Post-purchase Intentions: An Exploratory Study of Museum Visitors. *International Journal of Arts Management*, 6(2), 23–32. <https://doi.org/10.2307/41064817>

Harrison, T., & Waite, K. (2015). Impact of co-production on consumer perception of empowerment. *The Service Industries Journal*, 35(10), 502–520. <https://doi.org/10.1080/02642069.2015.1043276>

Hashim, A. F., Taib, M. Z. M., & Alias, A. (2014). The Integration of Interactive Display Method and Heritage Exhibition at Museum. *Procedia - Social and Behavioral Sciences*, 153(1), 308–316. <https://doi.org/10.1016/j.sbspro.2014.10.064>

Hassan, A., & Ramkissoon, H. (2017). Augmented Reality Application to Museum Visitor Experiences. In J. Albrecht (Ed.), *Visitor Management in Tourism Destinations* (pp. 117–130). Wallingford: CAB International.

Hausmann, A. (2007). Cultural tourism: Marketing challenges and opportunities for German cultural heritage. *International Journal of Heritage Studies*, 13(2), 170–184. <https://doi.org/10.1080/13527250601121351>

He, Z., Wu, L., & Li, X. (Robert). (2018). When art meets tech: The role of augmented reality in enhancing museum experiences and purchase intentions. *Tourism Management*, 68(1), 127–139. <https://doi.org/10.1016/j.tourman.2018.03.003>

Healy, J. C., & McDonagh, P. (2013). Consumer roles in brand culture and value co-creation in virtual communities. *Journal of Business Research*, 66(9), 1528–1540. <https://doi.org/10.1016/j.jbusres.2012.09.014>

Heidenreich, S., Wittkowski, K., Handrich, M., & Falk, T. (2015). The dark side of customer co-creation: exploring the consequences of failed co-created services. *Journal of the Academy of Marketing Science*, 43(3), 279–296. <https://doi.org/10.1007/s11747-014-0387-4>

Heinonen, K., Strandvik, T., Mickelsson, K., Edvardsson, B., Sundström, E., & Andersson, P. (2010). A customer-dominant logic of service. *Journal of Service Management*, 21(4), 531–548. <https://doi.org/10.1108/09564231011066088>

Heinonen, K., Strandvik, T., & Voima, P. (2013). Customer dominant value formation in service. *European Business Review*, 25(2), 104–123. <https://doi.org/10.1108/09555341311302639>

Helkkula, A., Kelleher, C., & Pihlström, M. (2012). Characterizing Value as an Experience: Implications for Service Researchers and Managers. *Journal of Service Research*, 15(1), 59–75. <https://doi.org/10.1177/1094670511426897>

Hems, A. (2006). Thinking about interpretation: Changing perspectives at English Heritage. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 189–200). Oxon: Routledge.

Hennes, T. (2010). Exhibitions: From a Perspective of Encounter. *Curator: The Museum Journal*, 53(1), 21–33. <https://doi.org/10.1111/j.2151-6952.2009.00005.x>

Hennes, T. (2012). Remembering and Disremembering: A Museum Perspective. *Curator: The Museum Journal*, 55(2), 129–138. <https://doi.org/10.1111/j.2151-6952.2012.00135.x>

Hennik, M., Hutter, I., & Bailey, A. (2011). *Qualitative Research Methods*. London: Sage Publications Ltd.

Heo, C. Y., & Lee, S. (2009). Application of revenue management practices to the theme park industry. *International Journal of Hospitality Management*, 28(3), 446–453. <https://doi.org/10.1016/j.ijhm.2009.02.001>

Hernandez, C. A. (2009). Theoretical Coding in Grounded Theory Methodology. *Grounded Theory Review*, 8(3), 51–60. Retrieved from <http://proxy-remote.galib.uga.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=46816644&site=eds-live>

- Hertzman, E., Anderson, D., & Rowley, S. (2008). Edutainment heritage tourist attractions: a portrait of visitors' experiences at Storyeum. *Museum Management and Curatorship*, 23(2), 155–175. <https://doi.org/10.1080/09647770802012227>
- Holbrook, M. B., & Hirschman, E. C. (1982). The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun. *Journal of Consumer Research*, 9(2), 132–140. Retrieved from <http://www.jstor.org/stable/2489122>
- Hollebeek, L. D. (2012). The customer engagement/value interface: An exploratory investigation. *Australasian Marketing Journal (AMJ)*, 21(1), 17–24. <https://doi.org/10.1016/j.ausmj.2012.08.006>
- Holliday, A. (2007). *Doing and Writing Qualitative Research* (2nd ed.). London: Sage Publications Ltd.
- Holliday, A. (2016). *Doing and Writing Qualitative Research* (3rd ed.). London: SAGE Publications Ltd.
- Hollinshead, K. (2004). A primer in ontological craft: The creative capture of people and places through qualitative research. In J. Phillimore & L. Goodson (Eds.), *Qualitative Research in Tourism: Ontologies, Epistemologies and Methodologies* (pp. 63–82). Oxon: Routledge.
- Hollinshead, K. (2006). The Shift to Constructivism in Social Inquiry: Some Pointers for Tourism Studies. *Tourism Recreation Research*, 31(2), 43–58. <https://doi.org/10.1080/02508281.2006.11081261>
- Holloway, J., & Humphreys, C. (2012). *The Business of Tourism* (9th ed.). Essex: Pearson Education Limited.
- Holstein, J., & Gubrium, J. (2008). The Constuctionist Mosaic. In J. Holstein & J. Gubrium (Eds.), *Handbook of Constructionist Research* (pp. 3–12). New York: Guildford Press.
- Hooper-Greenhill, E. (1994). *Museums and their Visitors*. London: Routledge.
- Hooper-Greenhill, E. (1999). Museums and Interpretive Communities. In *Paper presented at "Musing on Learning", Australian Museum* (pp. 1–11). April 20th: Available from: <http://australianmuseum.net.au/uploads/documents/2004/paper2.pdf>.
- Horn, M. S., Phillips, B. C., Evans, E. M., Block, F., Diamond, J., & Shen, C. (2016). Visualizing biological data in museums: Visitor learning with an interactive tree of life exhibit. *Journal of Research in Science Teaching*, 53(6), 895–918. <https://doi.org/10.1002/tea.21318>
- Howard, P. (2003). Heritage: Management, Interpretation, Identity. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation*. London: Continuum.
- Hu, W., & Wall, G. (2005). Environmental Management, Environmental Image and the Competitive Tourist Attraction. *Journal of Sustainable Tourism*, 13(6), 617–635. <https://doi.org/10.1080/09669580508668584>

- Hu, W., & Wall, G. (2012). Interpretative guiding and sustainable development: A framework. *Tourism Management Perspectives*, 4(1), 80–85. <https://doi.org/10.1016/j.tmp.2012.05.003>
- Huang, C. Y., & Chiang, L. (2007). Learning Ethics From Museum Exhibitions: Possible or Impossible? *Ethics & Behavior*, 17(4), 367–386. <https://doi.org/10.1080/10508420701519528>
- Hudson, S. (2008). *Tourism and Hospitality Marketing*. London: Sage Publications Ltd.
- Huey, L. (2011). Crime behind the glass: Exploring the sublime in crime at the Vienna Kriminalmuseum. *Theoretical Criminology*, 15(4), 381–399. <https://doi.org/10.1177/1362480610397416>
- Hughes, K., Bond, N., & Ballantyne, R. (2013). Designing and managing interpretive experiences at religious sites: Visitors' perceptions of Canterbury Cathedral. *Tourism Management*, 36(1), 210–220. <https://doi.org/10.1016/j.tourman.2012.11.022>
- Hughes, M., & Carlsen, J. (2010). The business of cultural heritage tourism: critical success factors. *Journal of Heritage Tourism*, 5(1), 17–32. <https://doi.org/10.1080/17438730903469805>
- Hughes, P. (2001). Making science “Family fun”: The fetish of the interactive exhibit. *Museum Management and Curatorship*, 19(2), 175–185. [https://doi.org/10.1016/S0260-4779\(01\)00016-4](https://doi.org/10.1016/S0260-4779(01)00016-4)
- Hume, M. (2015). To Technovate or Not to Technovate? Examining the Inter-Relationship of Consumer Technology, Museum Service Quality, Museum Value, and Repurchase Intent. *Journal of Nonprofit & Public Sector Marketing*, 27(2), 155–182. <https://doi.org/10.1080/10495142.2014.965081>
- Humphreys, A., & Grayson, K. (2008). The Intersecting Roles of Consumer and Producer: A Critical Perspective on Co-production, Co-creation and Prosumption. *Sociology Compass*, 2(3), 963–980. <https://doi.org/10.1111/j.1751-9020.2008.00112.x>
- Humphries, P. (2006). Interpreting Historic Scotland. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 55–70). Oxon: Routledge.
- Hunt, D. M., Geiger-Oneto, S., & Varca, P. E. (2012). Satisfaction in the context of customer co-production: A behavioral involvement perspective. *Journal of Consumer Behaviour*, 11(5), 347–356. <https://doi.org/10.1002/cb.1370>
- Hunter, J. E. (2012). Towards a cultural analysis: the need for ethnography in interpretation research. *Journal of Interpretation Research*, 17(1), 47–58. Retrieved from <http://go.galegroup.com/ps/i.do?id=GALE|A343945414&v=2.1&u=napier&it=r&p=EA1M&sw=w&asid=e8fa2836e328c097a220a8fdf72860c5>
- Hwang, J., & Seo, S. (2016). A critical review of research on customer experience management. *International Journal of Contemporary Hospitality Management*, 28(10), 2218–2246. <https://doi.org/10.1108/IJCHM-04-2015-0192>

- Imamoğlu, Ç., & Yılmazsoy, A. C. (2009). Gender and locality-related differences in circulation behavior in a museum setting. *Museum Management and Curatorship*, 24(2), 123–138. <https://doi.org/10.1080/09647770902857539>
- Irvine, A., Drew, P., & Sainsbury, R. (2013). “Am I not answering your questions properly?” Clarification, adequacy and responsiveness in semi-structured telephone and face-to-face interviews. *Qualitative Research*, 13(1), 87–106. <https://doi.org/10.1177/1468794112439086>
- Jaakkola, E., Helkkula, A., & Aarikka-Stenroos, L. (2015a). Guest Editorial: Understanding and advancing service experience co-creation. *Journal of Service Management*, 26(2), n.p. <https://doi.org/10.1108/JOSM-02-2015-0045>
- Jaakkola, E., Helkkula, A., & Aarikka-Stenroos, L. (2015b). Service experience co-creation: conceptualization, implications, and future research directions. *Journal of Service Management*, 26(2), 182–205. <https://doi.org/10.1108/JOSM-12-2014-0323>
- Jamal, T., & Hollinshead, K. (2001). Tourism and the forbidden zone: the underserved power of qualitative inquiry. *Tourism Management*, 22(1), 63–82. [https://doi.org/10.1016/S0261-5177\(00\)00020-0](https://doi.org/10.1016/S0261-5177(00)00020-0)
- Jang, S. C., & Wu, C. M. E. (2006). Seniors’ travel motivation and the influential factors: An examination of Taiwanese seniors. *Tourism Management*, 27(2), 306–316. <https://doi.org/10.1016/j.tourman.2004.11.006>
- Jansen-Verbeke, M., & van Rekom, J. (1996). Scanning museum visitors. *Annals of Tourism Research*, 23(2), 364–375. [https://doi.org/10.1016/0160-7383\(95\)00076-3](https://doi.org/10.1016/0160-7383(95)00076-3)
- Jennings, G. (2005). Interviewing: a Focus on Qualitative Techniques. In B. W. Ritchie, P. Burns, & C. Palmer (Eds.), *Tourism Research Methods* (pp. 99–117). Oxfordshire: CABI Publishing.
- Jensen, D. (2008). Credibility. In L. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Methods* (pp. 139–140). Thousand Oaks: Sage Publications Inc.
- Jeong, J.-H., & Lee, K.-H. (2006). The physical environment in museums and its effects on visitors’ satisfaction. *Building and Environment*, 41(7), 963–969. <https://doi.org/10.1016/j.buildenv.2005.04.004>
- Johnson, A.-G., & Neuhofer, B. (2017). Airbnb – an exploration of value co-creation experiences in Jamaica. *International Journal of Contemporary Hospitality Management*, 29(9), 2361–2376. <https://doi.org/10.1108/IJCHM-08-2016-0482>
- Johnson, P. (2015). Evaluating qualitative research: past, present and future. *Qualitative Research in Organizations and Management: An International Journal*, 10(4), 320–324. <https://doi.org/10.1108/QROM-07-2015-1303>
- Jorgenson, J., Nickerson, N., Dalenberg, D., Angle, J., Metcalf, E., & Freimund, W. (2018). Measuring Visitor Experiences: Creating and Testing the Tourism Autobiographical Memory Scale. *Journal of Travel Research*, Article in. <https://doi.org/10.1177/0047287518764344>

- Joy, A., & Sherry, J. (2003). Speaking of Art as Embodied Imagination: A Multisensory Approach to Understanding Aesthetic Experience. *Journal of Consumer Research*, 30(2), 259–282. <https://doi.org/10.1086/376802>
- Jung, T., Chung, N., & Leue, C. (2015). The determinants of recommendations to use augmented reality technologies: The case of a Korean theme park. *Tourism Management*, 49(1), 75–86. <https://doi.org/http://dx.doi.org/10.1016/j.tourman.2015.02.013>
- Jung, T., Dieck, M. C., Lee, H., & Chung, N. (2016). Effects of Virtual Reality and Augmented Reality on Visitor Experiences in Museum. In A. Inversini & R. Schegg (Eds.), *Information and Communication Technologies in Tourism 2016: Proceedings of the International Conference in Bilbao, Spain, February 2-5, 2016* (pp. 621–635). Springer International Publishing. https://doi.org/10.1007/978-3-319-28231-2_45
- Kahr-Højland, A. (2007). Brave new world: Mobile phones, museums and learning - how and why to use Augmented Reality within museums. *Nordisk Museologi*, 1(1), 3–18.
- Kang, M., & Gretzel, U. (2012). Perceptions of museum podcast tours: Effects of consumer innovativeness, Internet familiarity and podcasting affinity on performance expectancies. *Tourism Management Perspectives*, 4(1), 155–163. <https://doi.org/10.1016/j.tmp.2012.08.007>
- Karpen, I. O., Bove, L. L., Lukas, B. A., & Zyphur, M. J. (2015). Service-Dominant Orientation: Measurement and Impact on Performance Outcomes. *Journal of Retailing*, 91(1), 89–108. <https://doi.org/10.1016/j.jretai.2014.10.002>
- Kempiak, J., Hollywood, L., Bolan, P., & McMahon-Beattie, U. (2017). The heritage tourist: an understanding of the visitor experience at heritage attractions. *International Journal of Heritage Studies*, 23(4), 375–392. <https://doi.org/10.1080/13527258.2016.1277776>
- Kim, J.-H. (2014). The antecedents of memorable tourism experiences: The development of a scale to measure the destination attributes associated with memorable experiences. *Tourism Management*, 44, 34–45. <https://doi.org/10.1016/j.tourman.2014.02.007>
- Kim, J.-H., Ritchie, J. R. B., & McCormick, B. (2010). Development of a Scale to Measure Memorable Tourism Experiences. *Journal of Travel Research*, 51(1), 12–25. <https://doi.org/10.1177/0047287510385467>
- King, L., Stark, J. F., & Cooke, P. (2016). Experiencing the Digital World: The Cultural Value of Digital Engagement with Heritage. *Heritage & Society*, 9(1), 76–101. <https://doi.org/10.1080/2159032X.2016.1246156>
- King, N. (2012). Doing template analysis. In G. Symon & C. Cassell (Eds.), *Qualitative Organizational Research* (pp. 426–450). London: Sage Publications Ltd.
- King, N., & Brooks, J. (2017). *Template Analysis for Business and Management Students*. London: Sage Publications Ltd.
- Kirchberg, V., & Tröndle, M. (2012). Experiencing Exhibitions: A Review of Studies on Visitor Experiences in Museums. *Curator: The Museum Journal*, 55(4), 435–452. <https://doi.org/10.1111/j.2151-6952.2012.00167.x>

- Kirchberg, V., & Tröndle, M. (2015). The Museum Experience: Mapping the Experience of Fine Art. *Curator: The Museum Journal*, 58(2), 169–193. <https://doi.org/10.1111/cura.12106>
- Kitalong, K. S., Moody, J. E., Middlebrook, R. H., & Ancheta, G. S. (2009). Beyond the Screen: Narrative Mapping as a Tool for Evaluating a Mixed-Reality Science Museum Exhibit. *Technical Communication Quarterly*, 18(2), 142–165.
- Kleinaltenkamp, M., Brodie, R. J., Frow, P., Hughes, T., Peters, L. D., & Woratschek, H. (2012). Resource integration. *Marketing Theory*, 12(2), 201–205. <https://doi.org/10.1177/1470593111429512>
- Knudson, D., Cable, T., & Beck, L. (1995). *Interpretation of Cultural and Natural Resources*. State College, PA: Venture Publishing Inc.
- Knudson, D., Cable, T., & Beck, L. (2003). *Interpretation of Cultural and Natural Resources* (2nd ed.). State College, PA: Venture Publishing Inc.
- Kohler, T., Matzler, K., & Füller, J. (2009). Avatar-based innovation: Using virtual worlds for real-world innovation. *Technovation*, 29(6-7), 395–407. <https://doi.org/10.1016/j.technovation.2008.11.004>
- Kohli, A. (2006). Dynamic integration: extending the concept of resource integration. *Marketing Theory*, 6(3), 289–298.
- Kohli, R., & Grover, V. (2008). Business Value of IT: An Essay on Expanding Research Directions to Keep up with the Times. *Journal of the Association for Information Systems*, 9(1), 23–39. <https://doi.org/10.17705/1jais.00147>
- Kohtamäki, M., & Rajala, R. (2016). Theory and practice of value co-creation in B2B systems. *Industrial Marketing Management*, 56, 4–13. <https://doi.org/10.1016/j.indmarman.2016.05.027>
- Kotler, N., & Kotler, P. (2000). Can Museums be All Things to All People?: Missions, Goals, and Marketing's Role. *Museum Management and Curatorship*, 18(3), 271–287. <https://doi.org/10.1080/09647770000301803>
- Kryvinska, N., Olexova, R., Dohmen, P., & Strauss, C. (2013). The S-D logic phenomenon-conceptualization and systematization by reviewing the literature of a decade (2004–2013). *Journal of Service Science Research*, 5(1), 35–94. <https://doi.org/10.1007/s12927-013-0002-0>
- Kulka, A. (2000). *Social Constructivism and the Philosophy of Science*. London: Routledge.
- Kumar, R. (2005). *Research Methodology: A Step-by-Step Guide for Beginners* (2nd ed.). London: Sage Publications Ltd.
- Kuo, I. (2002). The effectiveness of environmental interpretation at resource-Sensitive tourism destinations. *International Journal of Tourism Research*, 4(2), 87–101. <https://doi.org/10.1002/jtr.362>
- Kuo, I. (2017). Theories of Learning and their Application in Interpretation. In J. Albrecht (Ed.), *Visitor Management in Tourism Destinations* (pp. 159–169). Wallingford: CAB International.

- Kuppelwieser, V. G., & Finsterwalder, J. (2016). Transformative service research and service dominant logic: Quo Vaditis? *Journal of Retailing and Consumer Services*, 28(1), 91–98. <https://doi.org/10.1016/j.jretconser.2015.08.011>
- Lane, M. (2007). The Visitor Journey: the new road to success. *International Journal of Contemporary Hospitality Management*, 19(3), 248–254. <https://doi.org/10.1108/09596110710739949>
- Langer, E. J., & Moldoveanu, M. (2000). The Construct of Mindfulness. *Journal of Social Issues*, 56(1), 1–9. <https://doi.org/10.1111/0022-4537.00148>
- Larsen, J. (2014). The Tourist Gaze 1.0, 2.0, and 3.0. In A. Lew, C. M. Hall, & A. M. Williams (Eds.), *The Wiley Blackwell Companion to Tourism* (pp. 304–313). Oxford: John Wiley & Sons, Ltd.
- Larson, R., & Csikszentmihalyi, M. (1983). The experience sampling method. In H. Reis (Ed.), *Naturalistic approaches to studying social interactions* (pp. 41–56). California: Jossey-Bass.
- Latham, K. F. (2015). What is “the real thing” in the museum? An interpretative phenomenological study. *Museum Management and Curatorship*, 30(1), 2–20. <https://doi.org/10.1080/09647775.2015.1008393>
- Latour, B. (1992). Where are the missing masses? Sociology of a few mundane artefacts. In W. Bijker & J. Law (Eds.), *Shaping technology, building society: Studies in sociotechnical change* (pp. 225–258). Cambridge, MA: MIT Press.
- Laws, E. (1998). Conceptualizing visitor satisfaction management in heritage settings: an exploratory blueprinting analysis of Leeds Castle, Kent. *Tourism Management*, 19(6), 545–554. [https://doi.org/10.1016/S0261-5177\(98\)00056-9](https://doi.org/10.1016/S0261-5177(98)00056-9)
- Leask, A. (2010). Progress in visitor attraction research: Towards more effective management. *Tourism Management*, 31(2), 155–166. <https://doi.org/10.1016/j.tourman.2009.09.004>
- Leask, A. (2016). Visitor attraction management: A critical review of research 2009–2014. *Tourism Management*, 57(1), 334–361. <https://doi.org/10.1016/j.tourman.2016.06.015>
- Leask, A., & Fyall, A. (2006). Researching the Management of Visitor Attractions: International Comparative Study Issues. *Tourism Recreation Research*, 31(2), 23–32. <https://doi.org/10.1080/02508281.2006.11081259>
- Leask, A., Fyall, A., & Barron, P. (2013). Generation Y: opportunity or challenge – strategies to engage Generation Y in the UK attractions’ sector. *Current Issues in Tourism*, 16(1), 17–46. <https://doi.org/10.1080/13683500.2011.642856>
- Leask, A., Fyall, A., & Barron, P. (2014). Generation Y: An Agenda for Future Visitor Attraction Research. *International Journal of Tourism Research*, 16(5), 462–471. <https://doi.org/10.1002/jtr.1940>
- Leask, A., Fyall, A., & Garrod, B. (2013). Managing revenue in Scottish visitor attractions. *Current Issues in Tourism*, 16(3), 240–265. <https://doi.org/10.1080/13683500.2012.667070>

- Lee, A. S. (1991). Integrating Positivist and Interpretive Approaches to Organizational Research. *Organization Science*, 2(4), 342–365. <https://doi.org/10.1287/orsc.2.4.342>
- Lee, T. (1998). Evaluating the effectiveness of heritage and environmental interpretation. In D. Uzzell & R. Ballantyne (Eds.), *Contemporary Issues in Heritage and Environmental Interpretation: Problems and Prospects* (pp. 203–231). London: The Stationary Office.
- Lee, Y. (2015). Creating memorable experiences in a reuse heritage site. *Annals of Tourism Research*, 55, 155–170. <https://doi.org/10.1016/j.annals.2015.09.009>
- Lehrer, M., Ordanini, A., DeFillippi, R., & Miozzo, M. (2012). Challenging the orthodoxy of value co-creation theory: A contingent view of co-production in design-intensive business services. *European Management Journal*, 30(6), 499–509. <https://doi.org/10.1016/j.emj.2012.07.006>
- Leighton, D. (2007). “Step back in time and live the legend”: experiential marketing and the heritage sector. *International Journal of Nonprofit and Voluntary Sector Marketing*, 12(2), 117–125. <https://doi.org/10.1002/nvsm.288>
- Leiper, N. (1979). The framework of tourism: Towards a definition of tourism, tourist, and the tourist industry. *Annals of Tourism Research*, 6(4), 390–407. [https://doi.org/10.1016/0160-7383\(79\)90003-3](https://doi.org/10.1016/0160-7383(79)90003-3)
- Leiper, N. (1990). Tourist attraction systems. *Annals of Tourism Research*, 17(3), 367–384. [https://doi.org/10.1016/0160-7383\(90\)90004-B](https://doi.org/10.1016/0160-7383(90)90004-B)
- Lennon, J. J. (2004). Revenue management and customer forecasts: A bridge too far for the UK visitor attractions sector? *Journal of Revenue & Pricing Management*, 2(4), 338–352. <https://doi.org/10.1057/palgrave.rpm.5170082>
- Lennon, J. J., & Foley, M. (1999). Interpretation of the Unimaginable: The U.S. Holocaust Memorial Museum, Washington, D.C., and “Dark Tourism.” *Journal of Travel Research*, 38(1), 46–50. <https://doi.org/10.1177/004728759903800110>
- Lennon, J. J., & Graham, M. (2001). Commercial development and competitive environments: the museum sector in scotland. *International Journal of Tourism Research*, 3(4), 265–281. <https://doi.org/10.1002/jtr.314>
- Lew, A. (1987). A framework of tourist attraction research. *Annals of Tourism Research*, 14(4), 553–575. [https://doi.org/10.1016/0160-7383\(87\)90071-5](https://doi.org/10.1016/0160-7383(87)90071-5)
- Li, X. (Robert), & Petrick, J. F. (2008). Tourism Marketing in an Era of Paradigm Shift. *Journal of Travel Research*, 46(3), 235–244. <https://doi.org/10.1177/0047287507303976>
- Liang, A. R.-D. (2017). Considering the role of agritourism co-creation from a service-dominant logic perspective. *Tourism Management*, 61, 354–367. <https://doi.org/10.1016/j.tourman.2017.02.002>
- Light, D. (1995). Visitors’ use of interpretive media at heritage sites. *Leisure Studies*, 14(2), 132–149. <https://doi.org/10.1080/02614369500390111>

- Lin, Z., Chen, Y., & Filieri, R. (2017). Resident-tourist value co-creation: The role of residents' perceived tourism impacts and life satisfaction. *Tourism Management*, 61, 436–442. <https://doi.org/10.1016/j.tourman.2017.02.013>
- Lincoln, Y., Lynham, S., & Guba, E. (2011). Paradigmatic Controversies, Contradictions, and Emerging Confluences, Revisited. In N. Denzin & Y. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (pp. 97–128). 4th Ed, Thousand Oaks: Sage Publications Inc.
- Littrell, M. A., Paige, R. C., & Song, K. (2004). Senior travellers: Tourism activities and shopping behaviours. *Journal of Vacation Marketing*, 10(4), 348–362. <https://doi.org/10.1177/135676670401000406>
- Lovelock, C. H. (1983). Classifying Services to Gain Strategic Marketing Insights. *Journal of Marketing*, 47(3), 9. <https://doi.org/10.2307/1251193>
- Lugosi, P. (2014). Mobilising identity and culture in experience co-creation and venue operation. *Tourism Management*, 40(1), 165–179. <https://doi.org/10.1016/j.tourman.2013.06.005>
- Lugosi, P. (2016). Socio-technological authentication. *Annals of Tourism Research*, 58, 100–113. <https://doi.org/10.1016/j.annals.2016.02.015>
- Lugosi, P., & Bray, J. (2008). Tour guiding, organisational culture and learning: lessons from an entrepreneurial company. *International Journal of Tourism Research*, 10(5), 467–479. <https://doi.org/10.1002/jtr.681>
- Lugosi, P., & Walls, A. R. (2013). Researching destination experiences: Themes, perspectives and challenges. *Journal of Destination Marketing & Management*, 2(2), 51–58. <https://doi.org/10.1016/j.jdmm.2013.07.001>
- Lusch, R. F., & Vargo, S. L. (2006). Service-dominant logic: reactions, reflections and refinements. *Marketing Theory*, 6(3), 281–288. <https://doi.org/10.1177/1470593106066781>
- Lusch, R. F., & Vargo, S. L. (2011). Service-dominant logic: a necessary step. *European Journal of Marketing*, 45(7/8), 1298–1309. <https://doi.org/10.1108/03090561111137723>
- Lusch, R., & Vargo, S. (2006). Service-dominant logic as a foundation for general theory. In R. Lusch & S. Vargo (Eds.), *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions* (pp. 406–20). New York: M.E. Sharpe, Inc.
- Lusch, R., Vargo, S., & O'Brien, M. (2007). Competing through service: Insights from service-dominant logic. *Journal of Retailing*, 83(1), 5–18. <https://doi.org/10.1016/j.jretai.2006.10.002>
- Ma, J., Scott, N., Gao, J., & Ding, P. (2017). Delighted or Satisfied? Positive Emotional Responses Derived from Theme Park Experiences. *Journal of Travel and Tourism Marketing*, 34(1). <https://doi.org/10.1080/10548408.2015.1125824>
- MacCannell, D. (1976). *The tourist: A new theory of the leisure class*. London: Macmillan.

Maglio, P. P., Vargo, S. L., Caswell, N., & Spohrer, J. (2009). The service system is the basic abstraction of service science. *Information Systems and E-Business Management*, 7(4), 395–406. <https://doi.org/10.1007/s10257-008-0105-1>

Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines. *Lancet*, 358(9280), 483–8. [https://doi.org/10.1016/S0140-6736\(01\)05627-6](https://doi.org/10.1016/S0140-6736(01)05627-6)

Manning, R., Wang, B., Valliere, W., Lawson, S., & Newman, P. (2002). Research to estimate and manage carrying capacity of a tourist attraction: A study of Alcatraz Island. *Journal of Sustainable Tourism*, 10(5), 388–404. <https://doi.org/10.1080/09669580208667175>

Marchegiani, L. (2018). From Mecenatism to crowdfunding: engagement and identification in cultural-creative projects. *Journal of Heritage Tourism*, 13(2), 143–151. <https://doi.org/10.1080/1743873X.2017.1337777>

Maréchal, G. (2010). Constructivism. In A. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of Case Study Research* (pp. 221–226). Thousand Oaks: Sage Publications Inc.

Marr, S. (2011). Applying “work process knowledge” to visitor attractions venues. *International Journal of Event and Festival Management*, 2(2), 151–169. <https://doi.org/10.1108/17582951111136577>

Martin, B., & Mason, S. (1993). The future for attractions. *Tourism Management*, 14(1), 34–40. [https://doi.org/10.1016/0261-5177\(93\)90080-5](https://doi.org/10.1016/0261-5177(93)90080-5)

Martínez-Graña, A. M., Goy, J. L., & Cimarra, C. A. (2013). A virtual tour of geological heritage: Valourising geodiversity using Google Earth and QR code. *Computers & Geosciences*, 61(1), 83–93. <https://doi.org/10.1016/j.cageo.2013.07.020>

Marvasti, A. (2004). *Qualitative Research in Sociology*. London: Sage Publications Ltd.

Mason, P. (2005). Visitor Management in Protected Areas: From “Hard” to “Soft” Approaches? *Current Issues in Tourism*, 8(2-3), 181–194. <https://doi.org/10.1080/13683500508668213>

Mason, P., & Kuo, I. (2008). Visitor Attitudes to Stonehenge: International Icon or National Disgrace? *Journal of Heritage Tourism*, 2(3), 168–183. <https://doi.org/10.2167/jht058.0>

Mathis, E. F., Kim, H., Uysal, M., Sirgy, J. M., & Prebensen, N. K. (2016). The effect of co-creation experience on outcome variable. *Annals of Tourism Research*, 57(1), 62–75. <https://doi.org/10.1016/j.annals.2015.11.023>

Maxwell, J. (2009). Designing a Qualitative Study. In L. Bickman & D. Rog (Eds.), *The SAGE Handbook of Applied Social Research Methods* (pp. 214–253). Thousand Oaks: Sage Publications Inc.

Mayer, K. J. (2002). Human resource practices and service quality in theme parks. *International Journal of Contemporary Hospitality Management*, 14(4), 169–175. <https://doi.org/10.1108/09596110210427012>

- Mazur, J., & Zaborek, P. (2014). Validating Dart Model. *International Journal of Management and Economics*, 44(1), 106–125. <https://doi.org/10.1515/ijme-2015-0012>
- McArthur, S., & Hall, C. M. (1993). Visitor Management and Interpretation at Heritage Sites. In M. Hall & S. McArthur (Eds.), *Heritage Management in New Zealand and Australia: Visitor Management, Interpretation, and Marketing* (pp. 18–39). Oxford: Oxford University Press.
- McArthur, S., & Hall, C. M. (1996). Interpretation: Principles and Practice. In C. M. Hall & S. McArthur (Eds.), *Heritage Management in Australia and New Zealand: The Human Dimension* (pp. 88–106). 2nd Ed, Oxford: Oxford University Press.
- McIntyre, C. (2009). Museum and art gallery experience space characteristics: an entertaining show or a contemplative bathe? *International Journal of Tourism Research*, 11(2), 155–170. <https://doi.org/10.1002/jtr.717>
- McKercher, B., & Ho, P. S. Y. (2006). Assessing the Tourism Potential of Smaller Cultural and Heritage Attractions. *Journal of Sustainable Tourism*, 14(5), 473–488. <https://doi.org/10.2167/jost620.0>
- McKercher, B., & Lau, G. (2008). Movement Patterns of Tourists within a Destination. *Tourism Geographies*, 10(3), 355–374. <https://doi.org/10.1080/14616680802236352>
- McPherson, G. (2006). Public memories and private tastes: The shifting definitions of museums and their visitors in the UK. *Museum Management and Curatorship*, 21(1), 44–57. <https://doi.org/10.1080/09647770600602101>
- Mele, C., & Polese, F. (2011). Key Dimensions of Service Systems in Value-Creating Networks. In H. Demirkan, J. C. Spohrer, & V. Krishna (Eds.), *The Science of Service Systems* (pp. 37–59). London: Springer US.
- Mencarelli, R., & Pulh, M. (2012). Museoparks and re-enchantment of the museum visits: an approach centred on visual ethnology. *Qualitative Market Research: An International Journal*, 15(2), 148–164. <https://doi.org/10.1108/13522751211215877>
- Mesquita, S., & Carneiro, M. J. (2016). Accessibility of European museums to visitors with visual impairments. *Disability & Society*, 31(3), 373–388. <https://doi.org/10.1080/09687599.2016.1167671>
- Message, K. (2006). The New Museum. *Theory, Culture & Society*, 23(2-3), 603–606. <https://doi.org/10.1177/0263276406023002110>
- Middleton, V., Fyall, A., Morgan, M., & Ranchhod, A. (2009). *Marketing in Travel and Tourism* (4th ed.). Oxford: Butterworth-Heinemann Ltd.
- Miles, M., Huberman, A., & Saldaña, J. (2014). *Qualitative Data Analysis - A Methods Sourcebook* (3rd ed.). London: Sage Publications Ltd.
- Miles, R. (1994). Exhibitions: management, for a change. In K. Moore (Ed.), *Museum Management* (pp. 256–261). London: Routledge.

- Milman, A. (2001). The Future of the Theme Park and Attraction Industry: A Management Perspective. *Journal of Travel Research*, 40(2), 139–147. <https://doi.org/10.1177/004728750104000204>
- Minazzi, R. (2017). The Travel Distribution System and Information Communication Technologies (ICT). In S. Dixit (Ed.), *The Routledge Handbook of Consumer Behaviour in Hospitality and Tourism* (pp. 377–386). Oxon: Routledge.
- Minkiewicz, J., Bridson, K., & Evans, J. (2016). Co-production of service experiences: insights from the cultural sector. *Journal of Services Marketing*, 30(7), 749–761. <https://doi.org/10.1108/JSM-04-2015-0156>
- Minkiewicz, J., Evans, J., & Bridson, K. (2014). How do consumers co-create their experiences? An exploration in the heritage sector. *Journal of Marketing Management*, 30(1-2), 30–59. <https://doi.org/10.1080/0267257X.2013.800899>
- Misiura, S. (2006). *Heritage Marketing*. Oxford: Butterworth-Heinemann Ltd.
- Mitsche, N., Vogt, F., Knox, D., Cooper, I., Lombardi, P., & Ciaffi, D. (2013). Intangibles: enhancing access to cities' cultural heritage through interpretation. *International Journal of Culture, Tourism and Hospitality Research*, 7(1), 68–77. <https://doi.org/http://dx.doi.org/10.1108/17506181311301381>
- Moisio, R., & Arnould, E. J. (2005). Extending the dramaturgical framework in marketing: Drama structure, drama interaction and drama content in shopping experiences. *Journal of Consumer Behaviour*, 4(4), 246–256. <https://doi.org/10.1002/cb.10>
- Molz, J. (2012). Authenticity: representation, commodification and re-enchantment. In *Travel Connections: Tourism, technology and togetherness in a mobile world* (pp. 110–134). Oxfordshire: Routledge.
- Morgan, G., & Smircich, L. (1980). The Case for Qualitative Research. *The Academy of Management Review*, 5(4), 491–500. <https://doi.org/10.2307/257453>
- Morgan, M. (2006). Making space for experiences. *Journal of Retail and Leisure Property*, 5(4), 305–313. <https://doi.org/10.1057/palgrave.rlp.5100034>
- Morosan, C., & DeFranco, A. (2016). Co-creating value in hotels using mobile devices: A conceptual model with empirical validation. *International Journal of Hospitality Management*, 52(1), 131–142. <https://doi.org/10.1016/j.ijhm.2015.10.004>
- Moscardo, G. (1996). Mindful visitors. *Annals of Tourism Research*, 23(2), 376–397. [https://doi.org/10.1016/0160-7383\(95\)00068-2](https://doi.org/10.1016/0160-7383(95)00068-2)
- Moscardo, G. (2003). Interpretation and Sustainable Tourism : Functions, examples and principles. *Journal of Tourism Studies*, 14(1), 112–123. Retrieved from <https://www.cabdirect.org/cabdirect/abstract/19991804806>
- Moscardo, G. (2010). The shaping of tourist experience: The importance of stories and themes. In M. Morgan, P. Lugosi, & J. R. B. Ritchie (Eds.), *The tourism and leisure experience: Consumer and managerial perspectives* (pp. 43–58). Bristol: Channel View Publications.

- Moscardo, G. (2014). Interpretation and tourism: holy grail or emperor's robes? *International Journal of Culture, Tourism and Hospitality Research*, 8(4), 462–476. <https://doi.org/10.1108/IJCTHR-08-2014-0071>
- Moscardo, G. (2017). Critical Reflections on the Role of Interpretation in Visitor Management. In J. Albrecht (Ed.), *Visitor Management in Tourism Destinations* (pp. 170–190). Wallingford: CAB International.
- Moscardo, G., & Ballantyne, R. (2008). Interpretation and attractions. In A. Fyall, B. Garrod, A. Leask, & S. R. C. Wanhill (Eds.), *Managing Visitor Attractions: New Directions* (pp. 237–252). 2nd ed., Oxford: Butterworth-Heinemann Ltd.
- Moseley, A. (2013). Immersive Games: An Alternative Reality for Museums. In *The Innovative Museum: It's Up To You...* (pp. 52–71). Edinburgh: MuseumsEtc Ltd.
- Mossberg, L. (2007). A Marketing Approach to the Tourist Experience. *Scandinavian Journal of Hospitality and Tourism*, 7(1), 59–74. <https://doi.org/10.1080/15022250701231915>
- Mossberg, L. (2008). Extraordinary Experiences through Storytelling. *Scandinavian Journal of Hospitality and Tourism*, 8(3), 195–210. <https://doi.org/10.1080/15022250802532443>
- Moussa, S., & Touzani, M. (2010). A literature review of service research since 1993. *Journal of Service Science*, 2(2), 173–212. <https://doi.org/10.1007/s12927-010-0008-9>
- Mura, P., Tavakoli, R., & Pahlevan Sharif, S. (2017). “Authentic but not too much”: exploring perceptions of authenticity of virtual tourism. *Information Technology & Tourism*, 17(2), 145–159. <https://doi.org/10.1007/s40558-016-0059-y>
- Mustak, M., Jaakkola, E., & Halinen, A. (2013). Customer participation and value creation: a systematic review and research implications. *Managing Service Quality: An International Journal*, 23(4), 341–359. <https://doi.org/10.1108/MSQ-03-2013-0046>
- Nambisan, S., & Baron, R. A. (2007). Interactions in virtual customer environments: Implications for product support and customer relationship management. *Journal of Interactive Marketing*, 21(2), 42–62. <https://doi.org/http://dx.doi.org/10.1002/dir.20077>
- Neuhofer, B., Buhalis, D., & Ladkin, A. (2012). Conceptualising technology enhanced destination experiences. *Journal of Destination Marketing & Management*, 1(1-2), 36–46. <https://doi.org/10.1016/j.jdmm.2012.08.001>
- Neuhofer, B., Buhalis, D., & Ladkin, A. (2013). Experiences, Co-creation and Technology: A Conceptual Approach to Enhance Tourism Experiences. *Paper Presented at CAUTHE 2013: Tourism and Global Change: On the Edge of Something Big, Christchurch*. Available from: http://www.academia.edu/2703085/Neuhofer_B._Buhalis_D._and_Ladkin_A._2013._Experiences_Co-creation_and_Technology_A_conceptual_approach_, (Accessed 15/06/15).

- Neuhofer, B., Buhalis, D., & Ladkin, A. (2014). A Typology of Technology-Enhanced Tourism Experiences. *International Journal of Tourism Research*, 16(4), 340–350. <https://doi.org/10.1002/jtr>
- Neuhofer, B., Buhalis, D., & Ladkin, A. (2015). Technology as a Catalyst of Change: Enablers and Barriers of the Tourist Experience and Their Consequences. In I. Tussyadiah & A. Inversini (Eds.), *Information and Communication Technologies in Tourism* (pp. 789–802). Springer International Publishing. https://doi.org/10.1007/978-3-319-14343-9_57
- Niinenen, O., Buhalis, D., & March, R. (2007). Customer empowerment in tourism through consumer centric marketing (CCM). *Qualitative Market Research: An International Journal*, 10(3), 265–281. <https://doi.org/10.1108/13522750710754308>
- Nowacki, M. M. (2009). Quality of visitor attractions, satisfaction, benefits and behavioural intentions of visitors: verification of a model. *International Journal of Tourism Research*, 11(3), 297–309. <https://doi.org/10.1002/jtr.689>
- O'Cass, A., & Sok, P. (2015). An exploratory study into managing value creation in tourism service firms: Understanding value creation phases at the intersection of the tourism service firm and their customers. *Tourism Management*, 51(1), 186–200. <https://doi.org/10.1016/j.tourman.2015.05.024>
- O'Dell, T. (2005). Experiencescapes: Blurring Borders and Testing Connections. In T. O'Dell & P. Billing (Eds.), *Experiencescapes: Tourism, Culture and Economy* (pp. 11–33). Copenhagen: Copenhagen Business School Press.
- O'Shaughnessy, J., & O'Shaughnessy, N. J. (2009). The service-dominant perspective: a backward step? *European Journal of Marketing*, 43(5/6), 784–793. <https://doi.org/10.1108/03090560910947043>
- O'Shaughnessy, J., & O'Shaughnessy, N. J. (2011). Service-dominant logic: a rejoinder to Lusch and Vargo's reply. *European Journal of Marketing*, 45(7/8), 1310–1318. <https://doi.org/10.1108/03090561111137732>
- Obenour, W., Patterson, M., Pedersen, P., & Pearson, L. (2006). Conceptualization of a meaning-based research approach for tourism service experiences. *Tourism Management*, 27(1), 34–41. <https://doi.org/10.1016/j.tourman.2004.07.008>
- Oh, H., Fiore, A. M., & Jeoung, M. (2007). Measuring Experience Economy Concepts: Tourism Applications. *Journal of Travel Research*, 46(2), 119–132. <https://doi.org/10.1177/0047287507304039>
- Olexova, R., & Kubickova, V. (2014). The evolution of the S-D logic approach and its impact on service science. *Journal of Service Science Research*, 6(1), 99–124. <https://doi.org/10.1007/s12927-014-0004-6>
- Oliver, P. (2010). *The Student's Guide to Research Ethics* (2nd ed.). Berkshire: Open University Press.
- Ooi, C. (2005). A Theory of Tourism Experiences: The Management of Attention. In T. O'Dell & P. Billing (Eds.), *Experiencescapes: Tourism, Culture and Economy* (pp. 51–68). Copenhagen: Copenhagen Business School Press.

- Orams, M. B. (1996). Using Interpretation to Manage Nature-based Tourism. *Journal of Sustainable Tourism*, 4(2), 81–94. <https://doi.org/10.1080/09669589608667260>
- Ordanini, A., & Pasini, P. (2008). Service co-production and value co-creation: The case for a service-oriented architecture (SOA). *European Management Journal*, 26(5), 289–297. <https://doi.org/10.1016/j.emj.2008.04.005>
- Otto, J. E., & Ritchie, J. R. B. (1996). The service experience in tourism. *Tourism Management*, 17(3), 165–174. [https://doi.org/10.1016/0261-5177\(96\)00003-9](https://doi.org/10.1016/0261-5177(96)00003-9)
- Overskaug, K., Holt, G., Hagen, K. G., Næss, A., & Steffensen, M. (2010). An Analysis of Visitation Patterns at the Museum of Natural History and Archaeology, Trondheim, Norway, from 1954 to 2006. *Visitor Studies*, 13(1), 107–117. <https://doi.org/10.1080/10645571003621844>
- Packer, J. (2006). Learning for Fun: The Unique Contribution of Educational Leisure Experiences. *Curator: The Museum Journal*, 49(3), 329–344. <https://doi.org/10.1111/j.2151-6952.2006.tb00227.x>
- Page, S., & Connell, J. (2014). *Tourism: A Modern Synthesis* (4th ed.). Hampshire: Cengage Learning EMEA.
- Pallud, J. (2015). Impact of interactive technologies on stimulating learning experiences in a museum. *Information and Management*, 54(4), 465–478. <https://doi.org/10.1016/j.im.2016.10.004>
- Pallud, J., & Monod, E. (2010). User experience of museum technologies: the phenomenological scales. *European Journal of Information Systems*, 19(5), 562–580. <https://doi.org/10.1057/ejis.2010.37>
- Palmer, A. (2010). Customer experience management: a critical review of an emerging idea. *Journal of Services Marketing*, 24(3), 196–208. <https://doi.org/10.1108/08876041011040604>
- Palys, T. (2008). Purposive Sampling. In L. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Methods* (pp. 698–699). Thousand Oaks: SAGE Publications, Inc. <https://doi.org/10.4135/9781412963909.n349>
- Park, S., & Santos, C. A. (2017). Exploring the Tourist Experience. *Journal of Travel Research*, 56(1), 16–27. <https://doi.org/10.1177/0047287515624017>
- Parry, G., Bustinza, O. F., & Vendrell-Herrero, F. (2012). Servitisation and value co-production in the UK music industry: An empirical study of Consumer Attitudes. *International Journal of Production Economics*, 135(1), 320–332. <https://doi.org/10.1016/j.ijpe.2011.08.006>
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). London: Sage Publications Ltd.
- Patton, M. Q. (2002). *Qualitative Research & Evaluation Methods* (3rd ed.). London: Sage Publications Ltd.

- Payne, A., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science*, 36(1), 83–96.
<https://doi.org/10.1007/s11747-007-0070-0>
- Peacock, D., & Brownbill, J. (2007). Audiences, visitors, users: reconceptualising users of museum on-line content and services. In J. Trant & D. Bearman (Eds.), *Proceedings of Museums and the Web 2007, Toronto, Canada*. Toronto: Archives & Museum Informatics.
- Pearce, P. (1984). Tourist-guide interaction. *Annals of Tourism Research*, 11(1), 129–146. [https://doi.org/10.1016/0160-7383\(84\)90100-2](https://doi.org/10.1016/0160-7383(84)90100-2)
- Pearce, P. (1998). Marketing and management trends in tourist attractions. *Asia Pacific Journal of Tourism Research*, 3(1), 1–8.
<https://doi.org/10.1080/10941669908722002>
- Pearce, P., & Benckendorff, P. (2006). Benchmarking, Usable Knowledge and Tourist Attractions. *Journal of Quality Assurance in Hospitality & Tourism*, 7(1-2), 29–52. https://doi.org/10.1300/J162v07n01_03
- Peña, A. P., Jamilena, D. F., & Molina, M. R. (2014). Value co-creation via information and communications technology. *The Service Industries Journal*, 34(13), 1043–1059. <https://doi.org/10.1080/02642069.2014.939641>
- Pendergast, D. (2010). Getting to Know Y Generation. In P. Benckendorff, G. Moscardo, & D. Perdergast (Eds.), *Tourism and Generation Y* (pp. 1–15). Wallingford: CABI Publishing.
- Pera, R., Occhiocupo, N., & Clarke, J. (2016). Motives and resources for value co-creation in a multi-stakeholder ecosystem: A managerial perspective. *Journal of Business Research*, 69(10), 4033–4041.
<https://doi.org/10.1016/j.jbusres.2016.03.047>
- Pernecky, T. (2007). Immersing in Ontology and the Research Process: Constructivism the Foundation for Exploring the (In)Credible OBE? In I. Ateljevic, A. Pritchard, & N. Morgan (Eds.), *The Critical Turn in Tourism Studies* (pp. 211–226). Oxford: Elsevier.
- Pernecky, T. (2012). Constructionism: Critical Pointers for Tourism Studies. *Annals of Tourism Research*, 39(2), 1116–1137.
<https://doi.org/10.1016/j.annals.2011.12.010>
- Pernecky, T., & Jamal, T. (2010). (Hermeneutic) Phenomenology in tourism studies. *Annals of Tourism Research*, 37(4), 1055–1075.
<https://doi.org/10.1016/j.annals.2010.04.002>
- Perry, C. (1998). Processes of a case study methodology for postgraduate research in marketing. *European Journal of Marketing*, 32(9/10), 785–802.
<https://doi.org/10.1108/03090569810232237>
- Phillimore, J., & Goodson, L. (2004). Progress in qualitative research in tourism: Epistemology, ontology and methodology. In J. Phillimore & L. Goodson (Eds.), *Qualitative Research in Tourism: Ontologies, Epistemologies and Methodologies* (pp. 3–29). Oxon: Routledge.

Pine, B. J., & Gilmore, J. H. (1998). Welcome to the Experience Economy. *Harvard Business Review*, 76(4), 97–105. Retrieved from <https://hbr.org/1998/07/welcome-to-the-experience-economy>

Pine, B. J., & Gilmore, J. H. (1999). *The Experience Economy: Work is Theatre & Every Business a Stage*. Boston: Harvard Business Review Press.

Pires, G. D., Dean, A., & Rehman, M. (2015). Using service logic to redefine exchange in terms of customer and supplier participation. *Journal of Business Research*, 68(5), 925–932. <https://doi.org/10.1016/j.jbusres.2014.09.019>

Pizam, A. (2010). Creating memorable experiences. *International Journal of Hospitality Management*, 29(3), 343. <https://doi.org/10.1016/j.ijhm.2010.04.003>

Platt, J. (2007). Case Study. In W. Outhwaite & S. Turner (Eds.), *The SAGE Handbook of Social Science Methodology* (pp. 100–118). London: Sage Publications Ltd.

Plé, L., & Chumpitaz Cáceres, R. (2010). Not always co-creation: introducing interactional co-destruction of value in service-dominant logic. *Journal of Services Marketing*, 24(6), 430–437. <https://doi.org/10.1108/08876041011072546>

Ponsignon, F., Klaus, P., & Maull, R. S. (2015). Experience co-creation in financial services: an empirical exploration. *Journal of Service Management*, 26(2), 295–320. <https://doi.org/10.1108/JOSM-10-2014-0277>

Poon, A. (1993). *Tourism, Technology and Competitive Strategies*. Oxon: CAB International.

Poria, Y., Biran, A., & Reichel, A. (2009). Visitors' Preferences for Interpretation at Heritage Sites. *Journal of Travel Research*, 48(1), 92–105. <https://doi.org/10.1177/0047287508328657>

Poria, Y., Reichel, A., & Brandt, Y. (2009). People with disabilities visit art museums: An exploratory study of obstacles and difficulties. *Journal of Heritage Tourism*, 4(2), 117–129. <https://doi.org/10.1080/17438730802366508>

Postma, A. (2014). The Future of Visitor Attractions in The Netherlands. *Tourism Recreation Research*, 39(3), 437–452. <https://doi.org/10.1080/02508281.2014.11087010>

Poulsson, S. H. G., & Kale, S. H. (2004). The Experience Economy and Commercial Experiences. *The Marketing Review*, 4(3), 267–277. <https://doi.org/10.1362/1469347042223445>

Powell, R. B., & Ham, S. H. (2008). Can Ecotourism Interpretation Really Lead to Pro-Conservation Knowledge, Attitudes and Behaviour? Evidence from the Galapagos Islands. *Journal of Sustainable Tourism*, 16(4), 467–489. <https://doi.org/10.1080/09669580802154223>

Prahalad, C. K., & Krishnan, M. S. (2008). *The New Age of Innovation: Driving Co-Created Value through Global Networks*. New York: McGraw- Hill.

- Prahalad, C. K., & Ramaswamy, V. (2000). Co-opting Customer Competence. *Harvard Business Review*, 78(1), 79–87. Retrieved from <https://hbr.org/2000/01/co-opting-customer-competence>
- Prahalad, C. K., & Ramaswamy, V. (2004a). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5–14. <https://doi.org/10.1002/dir.20015>
- Prahalad, C. K., & Ramaswamy, V. (2004b). *The future of competition : co-creating unique value with customers*. Boston: Harvard Business Press.
- Prayag, G. (2012). Senior Travelers' Motivations and Future Behavioral Intentions: THE CASE OF NICE. *Journal of Travel and Tourism Marketing*, 29(7), 665–681. <https://doi.org/10.1080/10548408.2012.720153>
- Prebensen, N. K., & Foss, L. (2011). Coping and co-creating in tourist experiences. *International Journal of Tourism Research*, 13(1), 54–67. <https://doi.org/10.1002/jtr.799>
- Prebensen, N. K., Vittersø, J., & Dahl, T. I. (2013). Value Co-Creation Significance of Tourist Resources. *Annals of Tourism Research*, 42(1), 240–261. <https://doi.org/10.1016/j.annals.2013.01.012>
- Prebensen, N. K., & Xie, J. (2017). Efficacy of co-creation and mastering on perceived value and satisfaction in tourists' consumption. *Tourism Management*, 60(1), 166–176. <https://doi.org/10.1016/j.tourman.2016.12.001>
- Prentice, R., & Andersen, V. (2007). Interpreting heritage essentialisms: Familiarity and felt history. *Tourism Management*, 28(3), 661–676. <https://doi.org/10.1016/j.tourman.2006.02.008>
- Prentice, R., & Cunnell, D. (1997). Response to interpretative media as a basis of multi-variate market segmentation for museums and heritage centres: The case example of the people's story, Edinburgh. *Museum Management and Curatorship*, 16(3), 233–256. [https://doi.org/10.1016/S0260-4779\(97\)00051-4](https://doi.org/10.1016/S0260-4779(97)00051-4)
- Prentice, R., Guerin, S., & McGugan, S. (1998). Visitor learning at a heritage attraction: a case study of Discovery as a media product. *Tourism Management*, 19(1), 5–23. [https://doi.org/10.1016/S0261-5177\(97\)00077-0](https://doi.org/10.1016/S0261-5177(97)00077-0)
- Prentice, R., Witt, S., & Hamer, C. (1998). Tourism as experience. *Annals of Tourism Research*, 25(1), 1–24. [https://doi.org/10.1016/S0160-7383\(98\)00084-X](https://doi.org/10.1016/S0160-7383(98)00084-X)
- Prideaux, B. (2008). The role of visitor attractions in peripheral areas. In A. Fyall, B. Garrod, A. Leask, & S. Wanhill (Eds.), *Managing Visitor Attractions: New Directions* (2nd ed., pp. 80–94). Oxford: Elsevier.
- Prior, D. D., & Marcos-Cuevas, J. (2016). Value co-destruction in interfirm relationships. *Marketing Theory*, 16(4), 533–552. <https://doi.org/10.1177/1470593116649792>
- Pritchard, A., & Morgan, N. (2007). De-centering tourism's intellectual universe, or traversing the dialogue between change and tradition. In I. Ateljevic, A. Pritchard, & N. Morgan (Eds.), *The Critical Turn in Tourism Studies: Innovative Research Methodologies* (pp. 11–28). Oxford: Elsevier.

- Puchner, L., Rapoport, R., & Gaskins, S. (2001). Learning in Children's Museums: Is It Really Happening? *Curator: The Museum Journal*, 44(3), 237–259. <https://doi.org/10.1111/j.2151-6952.2001.tb01164.x>
- Pullman, M. E., & Gross, M. A. (2003). Welcome to Your Experience: Where You Can Check Out Anytime You'd Like, But You Can Never Leave. *Journal of Business and Management*, 9(3), 215–232. Retrieved from <https://ezp.napier.ac.uk/login?url=http://search.proquest.com/docview/211508918?accountid=16607>
- Pullman, M. E., & Gross, M. A. (2004). Ability of Experience Design Elements to Elicit Emotions and Loyalty Behaviors. *Decision Sciences*, 35(3), 551–578. <https://doi.org/10.1111/j.0011-7315.2004.02611.x>
- Punch, M. (1998). Politics and Ethics in Qualitative Research. In N. Denzin & Y. Lincoln (Eds.), *The Landscape of Qualitative Research: Theories and Issues* (pp. 156–184). Thousand Oaks: Sage Publications Inc.
- Quétel-Brunner, B., & Griffin, K. A. (2014). Heritage interpretation and foreign language provision at Irish visitor attractions. *Journal of Heritage Tourism*, 9(2), 95–113. <https://doi.org/10.1080/1743873X.2013.857675>
- Rabotic, B. (2010). Professional Tourist Guiding: The Importance of Interpretation for Tourist Experiences. In *Faculty of Tourism and Hospitality Management in Opatija. Biennial International Congress. Tourism & Hospitality Industry* (pp. 1157–1167). Opatija: University of Rijeka, Faculty of Tourism & Hospitality Management. Retrieved from <https://ezp.napier.ac.uk/login?url=http://search.proquest.com/docview/763422344?accountid=16607>
- Radder, L., & Han, X. (2015). Museum Experience Based On Pine and Gilmore's Experience Economy Realms. *The Journal of Applied Business Research*, 31(2), 455–470.
- Ramaswamy, V. (2011). It's about human experiences... and beyond, to co-creation. *Industrial Marketing Management*, 40(2), 195–196. <https://doi.org/http://dx.doi.org/10.1016/j.indmarman.2010.06.030>
- Ramaswamy, V., & Gouillart, F. (2010). *The Power of Co-Creation: Build It with Them to Boost Growth, Productivity, and Profits*. New York: Free Press.
- Ramaswamy, V., & Ozcan, K. (2014). *The Co-Creation Paradigm*. Stanford: Stanford University Press.
- Ramaswamy, V., & Ozcan, K. (2018). What is co-creation? An interactional creation framework and its implications for value creation. *Journal of Business Research*, 84, 196–205. <https://doi.org/10.1016/j.jbusres.2017.11.027>
- Ranjan, K. R., & Read, S. (2016). Value co-creation: concept and measurement. *Journal of the Academy of Marketing Science*, 44(3), 290–315. <https://doi.org/10.1007/s11747-014-0397-2>

- Reay, P., & Seddighi, H. R. (2012). An empirical evaluation of management and operational capabilities for innovation via co-creation. *European Journal of Innovation Management*, 15(2), 259–275. <https://doi.org/10.1108/14601061211221002>
- Reisinger, Y., & Steiner, C. (2006). Reconceptualising interpretation: The role of tour guides in authentic tourism. *Current Issues in Tourism*, 9(6), 481–498. <https://doi.org/10.2167/cit280.0>
- Ren, C., Pritchard, A., & Morgan, N. (2010). Constructing tourism research. *Annals of Tourism Research*, 37(4), 885–904. <https://doi.org/10.1016/j.annals.2009.11.006>
- Rennie, L. J., Evans, R. S., Mayne, F. E., & Rennie, S. J. (2010). Factors Affecting the Use and Outcomes of Interactive Science Exhibits in Community Settings. *Visitor Studies*, 13(2), 222–237. <https://doi.org/10.1080/10645578.2010.509699>
- Rennie, L., & Johnston, D. J. (2004). The nature of learning and its implications for research on learning from museums. *Science Education*, 88(S1), S4–S16. <https://doi.org/10.1002/sce.20017>
- Rennie, L., & McClafferty, T. (1995). Using visits to interactive science and technology centers, museums, aquaria, and zoos to promote learning in science. *Journal of Science Teacher Education*, 6(4), 175–185. <https://doi.org/10.1007/BF02614639>
- Rennie, L., & Stocklmayer, S. M. (2003). The communication of science and technology: Past, present and future agendas. *International Journal of Science Education*, 25(6), 759–773. <https://doi.org/10.1080/09500690305020>
- Reussner, E. M. (2003). Strategic management for visitor-oriented museums. *International Journal of Cultural Policy*, 9(1), 95–108. <https://doi.org/10.1080/1028663032000089868>
- Rey, F. B., & Casado-Neira, D. (2013). Participation and Technology: Perception and Public Expectations about the Use of ICTs in Museums. *Procedia Technology*, 9(1), 697–704. <https://doi.org/10.1016/j.protcy.2013.12.077>
- Rhoden, S., Ineson, E. M., & Ralston, R. (2009). Volunteer motivation in heritage railways: A study of the west somerset railway volunteers. *Journal of Heritage Tourism*, 4(1), 19–36. <https://doi.org/10.1080/17438730802233864>
- Richards, G. (2002). Tourism attraction systems. *Annals of Tourism Research*, 29(4), 1048–1064. [https://doi.org/10.1016/S0160-7383\(02\)00026-9](https://doi.org/10.1016/S0160-7383(02)00026-9)
- Richards, S., & Wilkes, K. (2008). Attraction Failure and Success. In A. Fyall, B. Garrod, A. Leask, & S. Wanhill (Eds.), *Managing Visitor Attractions: New Directions* (pp. 39–58). 2nd ed., Oxford: Butterworth-Heinemann Ltd.
- Rihova, I. (2013). *Customer-to-customer co-creation of value in the context of festivals*. Doctoral Thesis, Bournemouth University, UK.
- Rihova, I., Buhalis, D., Gouthro, M. B., & Moital, M. (2018). Customer-to-customer co-creation practices in tourism: Lessons from Customer-Dominant logic. *Tourism Management*, 67(1), 362–375. <https://doi.org/10.1016/j.tourman.2018.02.010>

- Rihova, I., Buhalis, D., Moital, M., & Gouthro, M. B. (2013). Social layers of customer-to-customer value co-creation. *Journal of Service Management*, 24(5), 553–566. <https://doi.org/10.1108/JOSM-04-2013-0092>
- Rihova, I., Buhalis, D., Moital, M., & Gouthro, M. B. (2015). Conceptualising Customer-to-customer Value Co-creation in Tourism. *International Journal of Tourism Research*, 17(4), 356–363. <https://doi.org/10.1002/jtr.1993>
- Riley, R. W., & Love, L. L. (2000). The state of qualitative tourism research. *Annals of Tourism Research*, 27(1), 164–187. [https://doi.org/10.1016/S0160-7383\(99\)00068-7](https://doi.org/10.1016/S0160-7383(99)00068-7)
- Ritchie, J. R. B., & Hudson, S. (2009). Understanding and meeting the challenges of consumer/tourist experience research. *International Journal of Tourism Research*, 11(2), 111–126. <https://doi.org/10.1002/jtr.721>
- Ritchie, J. R. B., Tung, V. W. S., & Ritchie, R. J. B. (2011). Tourism experience management research: Emergence, evolution and future directions. *International Journal of Contemporary Hospitality Management*, 23(4), 419–438. <https://doi.org/10.1108/095961111111129968>
- Ritzer, G., & Jurgenson, N. (2010). Production, Consumption, Prosumption: The nature of capitalism in the age of the digital “prosumer.” *Journal of Consumer Culture*, 10(1), 13–36. <https://doi.org/10.1177/1469540509354673>
- Roberts, M., Mearns, K., & Edwards, V. (2014). Evaluating the effectiveness of guided versus non-guided interpretation in the Kruger National Park, South Africa. *Koedoe*, 56(2), 1–8. <https://doi.org/10.4102/koedoe.v56i2.1160>
- Robertshaw, A. (2006). Live Interpretation. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 41–54). Oxon: Routledge.
- Robles-Ortega, M. D., Feito, F. R., Jiménez, J. J., & Segura, R. J. (2011). Web technologies applied to virtual heritage: An example of an Iberian Art Museum. *Journal of Cultural Heritage*, 13(3), 326–331. <https://doi.org/10.1016/j.culher.2011.10.001>
- Rubin, H., & Rubin, I. (2005). *Qualitative Interviewing* (2nd ed.). Thousand Oaks: Sage Publications Inc.
- Russell, T. (1989). The Formative Evaluation of Interactive Science and Technology Centres: Some Lessons Learned. In D. Uzzell (Ed.), *Heritage Interpretation Volume 2. The Visitor Experience* (pp. 191–202). London: Belhaven Press.
- Russo, A., Watkins, J., Kelly, L., & Chan, S. (2007). Social media and cultural interactive experiences in museums. *Nordisk Museologi*, 1(1), 19–29.
- Ryan, C. (2000). Tourist experiences, phenomenographic analysis, post-postivism and neural network software. *International Journal of Tourism Research*, 2(2), 119–131. <https://doi.org/10.1002>
- Ryan, C. (2010). Stages, gazes and constructions of tourism. In C. Ryan (Ed.), *The Tourist Experience* (2nd ed., pp. 1–26). London: Cengage Learning.

- Ryan, C., & Dewar, K. (1995). Evaluating the communication process between interpreter and visitor. *Tourism Management*, 16(4), 295–303. [https://doi.org/10.1016/0261-5177\(95\)00019-K](https://doi.org/10.1016/0261-5177(95)00019-K)
- Ryan, G., & Bernard, H. R. (2003). Data Management and Analysis Methods. In N. Denzin & Y. Lincoln (Eds.), *Collecting and Interpreting Qualitative Materials* (2nd ed., pp. 259–309). London: Sage Publications Ltd.
- Saarijärvi, H., Kannan, P. K., & Kuusela, H. (2013). Value co-creation: theoretical approaches and practical implications. *European Business Review*, 25(1), 6–19. <https://doi.org/10.1108/09555341311287718>
- Sandström, S., Edvardsson, B., Kristensson, P., & Magnusson, P. (2008). Value in use through service experience. *Managing Service Quality: An International Journal*, 18(2), 112–126. <https://doi.org/10.1108/09604520810859184>
- Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students* (6th ed.). Harlow: Pearson Education Limited.
- Sawhney, M., Verona, G., & Prandelli, E. (2005). Collaborating to create: The internet as a platform for customer engagement in product innovation. *Journal of Interactive Marketing*, 19(4), 4–34. <https://doi.org/10.1002/dir.20046>
- Scarles, C., Casey, M., & Treharne, H. (2016). Enriching the visitor experience: Augmented reality and image recognition in tourism. In *CAUTHE 2016: The Changing Landscape of Tourism and Hospitality: The Impact of Emerging Markets and Emerging Destinations* (pp. 1177–1184).
- Schlager, T., & Maas, P. (2012). Reframing customer value from a dominant logics perspective. *Der Markt*, 51(2-3), 101–113. <https://doi.org/10.1007/s12642-011-0068-5>
- Schmidt, V. H. (2001). Oversocialised Epistemology: A Critical Appraisal of Constructivism. *Sociology*, 35(1), 135–157. <https://doi.org/10.1177/0038038501035001009>
- Schmitt, B. (1999). Experiential Marketing. *Journal of Marketing Management*, 15(1-3), 53–67. <https://doi.org/10.1362/026725799784870496>
- Schofield, J. (2006). Jessie's Cats and other stories: Presenting and Interpreting Recent Troubles. In A. Hems & M. Blockley (Eds.), *Heritage Interpretation* (pp. 141–162). Oxon: Routledge.
- Schulte-Römer, N. (2018). Extraordinary LED installations: events for user–innovation interaction. *Industry and Innovation*, 25(7), 699–727. <https://doi.org/10.1080/13662716.2017.1345678>
- Schwan, S., Grajal, A., & Lewalter, D. (2014). Understanding and Engagement in Places of Science Experience: Science Museums, Science Centers, Zoos, and Aquariums. *Educational Psychologist*, 49(2), 70–85. <https://doi.org/10.1080/00461520.2014.917588>
- Schwandt, T. (1998). Constructivist, Interpretivist Approaches to Human Inquiry. In N. Denzin & Y. Lincoln (Eds.), *The Landscape of Qualitative Research* (pp. 221–259). Thousand Oaks: Sage Publications Inc.

- Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N. Denzin & Y. Lincoln (Eds.), *The Landscape of Qualitative Research: Theories and Issues* (pp. 189–213). Thousand Oaks: Sage Publications Ltd.
- Scott, N., Laws, E., & Boksberger, P. (2009). The Marketing of Hospitality and Leisure Experiences. *Journal of Hospitality Marketing & Management*, 18(2-3), 99–110. <https://doi.org/10.1080/19368620802590126>
- Seaton, A. V. (2002). Observing conducted tours: The ethnographic context in tourist research. *Journal of Vacation Marketing*, 8(4), 309–319. <https://doi.org/10.1177/135676670200800402>
- Servidio, R., & Ruffolo, I. (2016). Exploring the relationship between emotions and memorable tourism experiences through narratives. *Tourism Management Perspectives*, 20, 151–160. <https://doi.org/10.1016/j.tmp.2016.07.010>
- Sfandla, C., & Björk, P. (2013). Tourism Experience Network: Co-creation of Experiences in Interactive Processes. *International Journal of Tourism Research*, 15(5), 495–506. <https://doi.org/10.1002/jtr.1892>
- Shackley, M. (1998). *Visitor Management - Case Studies from World Heritage Sites*. Oxford: Butterworth-Heinemann Ltd.
- Sharifi-Tehrani, M., Verbič, M., & Chung, J. Y. (2013). An Analysis of Adopting Dual Pricing for Museums: The Case of the National Museum of Iran. *Annals of Tourism Research*, 43, 58–80. <https://doi.org/10.1016/j.annals.2013.04.001>
- Sharples, L., Yeoman, I., & Leask, A. (1999). Operations Management. In A. Leask & I. Yeoman (Eds.), *Heritage Visitor Attractions: An Operations Management Perspective* (pp. 22–38). London: Cassell.
- Sharpley, R. (2007). Flagship Attractions and Sustainable Rural Tourism Development: The Case of the Alnwick Garden, England. *Journal of Sustainable Tourism*, 15(2), 125–143. <https://doi.org/10.2167/jost604.0>
- Shaw, G., Bailey, A., & Williams, A. (2011). Aspects of service-dominant logic and its implications for tourism management: Examples from the hotel industry. *Tourism Management*, 32(2), 207–214. <https://doi.org/10.1016/j.tourman.2010.05.020>
- Sheldon, P. (1997). *Tourism Information Technology*. Oxon: CAB International.
- Sheng, C.-W., & Chen, M.-C. (2012). A study of experience expectations of museum visitors. *Tourism Management*, 33(1), 53–60. <https://doi.org/10.1016/j.tourman.2011.01.023>
- Sheng, C.-W., & Ming-Chia, C. (2013). Tourist experience expectations: questionnaire development and text narrative analysis. *International Journal of Culture, Tourism and Hospitality Research*, 7(1), 93–104. <https://doi.org/http://dx.doi.org/10.1108/17506181311301390>
- Shouse, A., Lewenstein, B. V, Feder, M., & Bell, P. (2010). Crafting Museum Experiences in Light of Research on Learning: Implications of the National Research Council's Report on Informal Science Education. *Curator: The Museum Journal*, 53(2), 137–154. <https://doi.org/10.1111/j.2151-6952.2010.00015.x>

Shulga, L. V., Busser, J. A., & Kim, H. (Lina). (2017). Generational Profiles in Value Co-Creation Interactions. *Journal of Hospitality Marketing & Management*, 1–22. <https://doi.org/10.1080/19368623.2017.1340218>

Sigala, M. (2009). E-service quality and Web 2.0: expanding quality models to include customer participation and inter-customer support. *The Service Industries Journal*, 29(10), 1341–1358. <https://doi.org/10.1080/02642060903026239>

Silberman, N. A. (2012). Heritage interpretation and human rights: documenting diversity, expressing identity, or establishing universal principles? *International Journal of Heritage Studies*, 18(3), 245–256. <https://doi.org/10.1080/13527258.2012.643910>

Skibins, J. C., Powell, R. B., & Stern, M. J. (2012). Exploring empirical support for interpretation's best practices. *Journal of Interpretation Research*, 17(1), 25–44. Retrieved from <http://go.galegroup.com/ps/i.do?id=GALE|A307789515&v=2.1&u=napier&it=r&p=EAIM&sw=w&asid=97eaf21044ae4436899da59eff003d09>

Skydsgaard, M., Møller Andersen, H., & King, H. (2016). Designing museum exhibits that facilitate visitor reflection and discussion. *Museum Management and Curatorship*, 31(1), 48–68. <https://doi.org/10.1080/09647775.2015.1117237>

Slåtten, T., Mehmetoglu, M., Svensson, G., & Sværi, S. (2009). Atmospheric experiences that emotionally touch customers. *Managing Service Quality*, 19(6), 721–746. <https://doi.org/http://dx.doi.org/10.1108/09604520911005099>

Smith, A. (2013). The value co-destruction process: a customer resource perspective. *European Journal of Marketing*, 47(11/12), 1889–1909.

Smith, J., & Osborn, M. (2008). Interpretative Phenomenological Analysis. In G. Breakwell (Ed.), *Doing Social Psychology Research* (pp. 229–254). Oxford: The British Psychological Society and Blackwell Publishing Ltd. <https://doi.org/10.1002/9780470776278.ch10>

Smith, K. A., & Holmes, K. (2012). Visitor centre staffing: Involving volunteers. *Tourism Management*, 33(3), 562–568. <https://doi.org/10.1016/j.tourman.2011.06.010>

Smith, S. (1994). The tourism product. *Annals of Tourism Research*, 21(3), 582–595.

Snepenger, D., Murphy, L., Snepenger, M., & Anderson, W. (2004). Normative Meanings of Experiences for a Spectrum of Tourism Places. *Journal of Travel Research*, 43(2), 108–117. <https://doi.org/10.1177/0047287504268231>

Snepenger, D., Snepenger, M., Dalbey, M., & Wessol, A. (2007). Meanings and Consumption Characteristics of Places at a Tourism Destination. *Journal of Travel Research*, 45(3), 310–321. <https://doi.org/10.1177/0047287506295909>

Sørensen, F., & Jensen, J. F. (2015). Value creation and knowledge development in tourism experience encounters. *Tourism Management*, 46(1), 336–346. <https://doi.org/10.1016/j.tourman.2014.07.009>

- Stadler, R., Reid, S., & Fullagar, S. (2013). An ethnographic exploration of knowledge practices within the Queensland Music Festival. *International Journal of Event and Festival Management*, 4(2), 90–106. <https://doi.org/10.1108/17582951311325872>
- Staiff, R. (2014). *Re-imagining Heritage Interpretation: Enchanting the Past-Future*. Surrey: Ashgate Publishing Limited.
- Staiff, R., Bushell, R., & Kennedy, P. (2002). Interpretation in National Parks: Some Critical Questions. *Journal of Sustainable Tourism*, 10(2), 97–113. <https://doi.org/10.1080/09669580208667156>
- Sterry, P., & Beaumont, E. (2006). Methods for studying family visitors in art museums: A cross-disciplinary review of current research. *Museum Management and Curatorship*, 21(3), 222–239. <https://doi.org/10.1080/09647770600402103>
- Stevens, H. (2012). Museums Want to Entertain You (and That's Not a Bad Thing). Retrieved September 26, 2015, from <http://www.theatlantic.com/entertainment/archive/2012/04/museums-want-to-entertain-you-and-thats-not-a-bad-thing/256042/>
- Stevens, T. (1989). The Visitor - Who Cares? Interpretation and Consumer Relations. In D. Uzzell (Ed.), *Heritage Interpretation Volume 2. The Visitor Experience* (pp. 103–107). London: Belhaven Press.
- Stewart, D. W., & Pavlou, P. A. (2002a). From Consumer Response to Active Consumer: Measuring the Effectiveness of Interactive Media. *Journal of the Academy of Marketing Science*, 30(4), 376–396. <https://doi.org/10.1177/009207002236912>
- Stewart, D. W., & Pavlou, P. A. (2002b). From Consumer Response to Active Consumer: Measuring the Effectiveness of Interactive Media. *Journal of the Academy of Marketing Science*, 30(4), 376–396. <https://doi.org/10.1177/009207002236912>
- Stewart, E., Glen, M. H., Daly, K., & O'Sullivan, D. (2001). To Centralise or Disperse – A Question for Interpretation: A Case Study of Interpretive Planning in the Brecks. *Journal of Sustainable Tourism*, 9(4), 342–355. <https://doi.org/10.1080/09669580108667406>
- Stewart, E., Hayward, B. M., Devlin, P. J., & Kirby, V. (1998). The “place” of interpretation: a new approach to the evaluation of interpretation. *Tourism Management*, 19(3), 257–266. [https://doi.org/10.1016/S0261-5177\(98\)00015-6](https://doi.org/10.1016/S0261-5177(98)00015-6)
- Stipanuk, D. M. (1993). Tourism and technology. *Tourism Management*, 14(4), 267–278. [https://doi.org/10.1016/0261-5177\(93\)90061-O](https://doi.org/10.1016/0261-5177(93)90061-O)
- Stock, O., Zancanaro, M., Busetta, P., Callaway, C., Krüger, A., Kruppa, M., ... Rocchi, C. (2007). Adaptive, intelligent presentation of information for the museum visitor in PEACH. *User Modeling and User-Adapted Interaction*, 17(3), 257–304. <https://doi.org/10.1007/s11257-007-9029-6>
- Storbacka, K., Brodie, R. J., Böhmman, T., Maglio, P. P., & Nenonen, S. (2016). Actor engagement as a microfoundation for value co-creation. *Journal of Business Research*, 69(8), 3008–3017. <https://doi.org/10.1016/j.jbusres.2016.02.034>

Strauss, S. (1996). *The Passionate Fact: Storytelling in Natural History and Cultural Interpretation*. Golden: North American Press.

Strijbos, S. (2006). The Systems Character of Modern Technology. In S. Strijbos & A. Basden (Eds.), *In Search of an Integrative Vision for Technology* (pp. 105–118). Boston: Springer.

Stuedahl, D., & Smørðal, O. (2011). Designing for Young Visitors' Co-composition of Doubts in Cultural Historical Exhibitions. *Computers and Composition*, 28(3), 215–223. <https://doi.org/10.1016/j.compcom.2011.07.008>

Styliani, S., Fotis, L., Kostas, K., & Petros, P. (2009). Virtual museums, a survey and some issues for consideration. *Journal of Cultural Heritage*, 10(4), 520–528. <https://doi.org/10.1016/j.culher.2009.03.003>

Sutcliffe, K., & Kim, S. (2014). Understanding children's engagement with interpretation at a cultural heritage museum. *Journal of Heritage Tourism*, 9(4), 332–348. <https://doi.org/10.1080/1743873X.2014.924952>

Swanagan, J. S. (2000). Factors Influencing Zoo Visitors' Conservation Attitudes and Behavior. *The Journal of Environmental Education*, 31(4), 26–31. <https://doi.org/10.1080/00958960009598648>

Swarbrooke, J. (2001). Key challenges for visitor attraction managers in the UK. *Journal of Retail & Leisure Property*, 1(4), 318–336. <https://doi.org/10.1057/palgrave.rlp.5090130>

Swarbrooke, J. (2002). *The Development and Management of Visitor Attractions* (2nd ed.). Oxford: Butterworth-Heinemann Ltd.

Sylaiou, S., Mania, K., Karoulis, A., & White, M. (2010). Exploring the relationship between presence and enjoyment in a virtual museum. *International Journal of Human-Computer Studies*, 68(5), 243–253. <https://doi.org/http://dx.doi.org/10.1016/j.ijhcs.2009.11.002>

Tabari, S., Wilson, J. A. J., & Ingram, H. (2016). Conceptualising the impact of culture and language upon hospitality service management. *Worldwide Hospitality and Tourism Themes*, 8(1), 12–28. <https://doi.org/10.1108/WHATT-10-2015-0037>

Taheri, B., Jafari, A., & O'Gorman, K. (2014). Keeping your audience: Presenting a visitor engagement scale. *Tourism Management*, 42(1), 321–329. <https://doi.org/10.1016/j.tourman.2013.12.011>

Tan, E., & Law, R. (2016). mLearning as a softer visitor management approach for sustainable tourism. *Journal of Sustainable Tourism*, 24(1), 132–152. <https://doi.org/10.1080/09669582.2015.1049610>

Thyne, M., & Hede, A.-M. (2016). Approaches to managing co-production for the co-creation of value in a museum setting: when authenticity matters. *Journal of Marketing Management*, 32(15-16), 1478–1493. <https://doi.org/10.1080/0267257X.2016.1198824>

Tilden, F. (2007). *Interpreting Our Heritage* (4th ed.). Chapel Hill: The University of North Carolina Press.

- Timothy, D., & Boyd, S. (2003). *Heritage Tourism*. Harlow: Pearson Education Limited.
- Timothy, D. J., & Boyd, S. W. (2006). Heritage Tourism in the 21st Century: Valued Traditions and New Perspectives. *Journal of Heritage Tourism*, 1(1), 1–16. <https://doi.org/10.1080/17438730608668462>
- tom Dieck, M. ., & Jung, T. (2017). Value of augmented reality at cultural heritage sites: A stakeholder approach. *Journal of Destination Marketing & Management*, 6(2), 110–117. <https://doi.org/10.1016/j.jdmm.2017.03.002>
- Tracy, S. J. (2010). Qualitative Quality: Eight “Big-Tent” Criteria for Excellent Qualitative Research. *Qualitative Inquiry*, 16(10), 837–851. <https://doi.org/10.1177/1077800410383121>
- Tribe, J. (1997). The indiscipline of tourism. *Annals of Tourism Research*, 24(3), 638–657. [https://doi.org/10.1016/S0160-7383\(97\)00020-0](https://doi.org/10.1016/S0160-7383(97)00020-0)
- Tribe, J. (2006). The truth about tourism. *Annals of Tourism Research*, 33(2), 360–381. <https://doi.org/10.1016/j.annals.2005.11.001>
- Tronvoll, B. (2017). The Actor: The Key Determinator in Service Ecosystems. *Systems*, 5(2), 38. <https://doi.org/10.3390/systems5020038>
- Tronvoll, B., Brown, S. W., Gremler, D. D., & Edvardsson, B. (2011). Paradigms in service research. *Journal of Service Management*, 22(5), 560–585. <https://doi.org/10.1108/09564231111174951>
- Tung, V. W. S., & Ritchie, J. R. B. (2011). Exploring the essence of memorable tourism experiences. *Annals of Tourism Research*, 38(4), 1367–1386. <https://doi.org/10.1016/j.annals.2011.03.009>
- Tussyadiah, I., & Fesenmaier, D. (2009). Mediating Tourist Experiences. *Annals of Tourism Research*, 36(1), 24–40. <https://doi.org/10.1016/j.annals.2008.10.001>
- Tussyadiah, I. P. (2014). Toward a Theoretical Foundation for Experience Design in Tourism. *Journal of Travel Research*, 53(5), 543–564. <https://doi.org/10.1177/0047287513513172>
- Tussyadiah, I. P., Jung, T. H., & tom Dieck, M. C. (2018). Embodiment of Wearable Augmented Reality Technology in Tourism Experiences. *Journal of Travel Research*, 57(5), 597–611. <https://doi.org/10.1177/0047287517709090>
- Tynan, C., & McKechnie, S. (2009). Experience marketing: a review and reassessment. *Journal of Marketing Management*, 25(5-6), 501–517. <https://doi.org/10.1362/026725709X461821>
- Tynan, C., McKechnie, S., & Hartley, S. (2014). Interpreting value in the customer service experience using customer-dominant logic. *Journal of Marketing Management*, 30(9-10), 1058–1081. <https://doi.org/10.1080/0267257X.2014.934269>
- Urry, J. (1990). *The Tourist Gaze: Leisure and Travel in Contemporary Societies*. London: Sage Publications Ltd.

Urry, J. (1992). The Tourist Gaze "Revisited." *American Behavioral Scientist*, 36(2), 172–186. <https://doi.org/10.1177/0002764292036002005>

Uzzell, D. (1989). The Hot Interpretation of War and Conflict. In D. Uzzell (Ed.), *Heritage Interpretation Volume 1. The Natural & Built Environment* (pp. 33–47). London: Belhaven Press.

Uzzell, D. (1998a). Interpreting Our Heritage: A Theoretical Interpretation. In D. Uzzell & R. Ballantyne (Eds.), *Contemporary Issues in Heritage and Environmental Interpretation: Problems and Prospects* (pp. 11–25). London: The Stationary Office.

Uzzell, D. (1998b). Planning for interpretive experiences. In D. Uzzell & R. Ballantyne (Eds.), *Contemporary Issues in Heritage and Environmental Interpretation: Problems and Prospects* (pp. 232–252). London: The Stationary Office.

Uzzell, D. (1998c). Strategic considerations and practical approaches to the evaluation of heritage interpretation. In D. Uzzell & R. Ballantyne (Eds.), *Contemporary Issues in Heritage and Environmental Interpretation: Problems and Prospects* (pp. 185–202). London: The Stationary Office.

Uzzell, D., & Ballantyne, R. (1998). Heritage that Hurts: Interpretation in a postmodern world. In D. Uzzell & R. Ballantyne (Eds.), *Contemporary Issues in Heritage and Environmental Interpretation: Problems and Prospects* (pp. 152–171). London: The Stationary Office.

Van Winkle, C. M. (2014). The Effects of Entertainment and Fun on the Visitor's Free-Choice Learning Experience. *Journal of Leisure Research*, 46(5), 644–651. Retrieved from <https://www.cabdirect.org/cabdirect/abstract/20153136071>

Van Winkle, C. M., & Bueddefeld, J. N. H. (2016). Service-dominant logic and the festival experience. *International Journal of Event and Festival Management*, 7(3), 237–254. <https://doi.org/10.1108/IJEFM-12-2015-0046>

Var, T., Chon, J., & Doh, M. (2001). Acceptance of Technology by Texas Museums: An Application of Learning Curve. *Information Technology & Tourism*, 4(2), 123–130. <https://doi.org/10.3727/109830501108750930>

Vargo, S. L. (2008). Customer Integration and Value Creation: Paradigmatic Traps and Perspectives. *Journal of Service Research*, 11 (2), 211–215. <https://doi.org/10.1177/1094670508324260>

Vargo, S. L. (2009). Toward a transcending conceptualization of relationship: a service-dominant logic perspective. *Journal of Business & Industrial Marketing*, 24(5/6), 373–379. <https://doi.org/10.1108/08858620910966255>

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, 68(1), 1–17. <https://doi.org/10.1509/jmkg.68.1.1.24036>

Vargo, S. L., & Lusch, R. F. (2006). Evolving to a New Dominant Logic for Marketing. In R. Lusch & S. Vargo (Eds.), *The Service-Dominant Logic of Marketing: Dialog, Debate, and Directions* (pp. 3–28). New York: M.E. Sharpe, Inc.

- Vargo, S. L., & Lusch, R. F. (2008a). From goods to service(s): Divergences and convergences of logics. *Industrial Marketing Management*, 37(3), 254–259. <https://doi.org/10.1016/j.indmarman.2007.07.004>
- Vargo, S. L., & Lusch, R. F. (2008b). Service-dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1–10. <https://doi.org/10.1007/s11747-007-0069-6>
- Vargo, S. L., & Lusch, R. F. (2010). From Repeat Patronage to Value Co-creation in Service Ecosystems: A Transcending Conceptualization of Relationship. *Journal of Business Market Management*, 4(4), 169–179. <https://doi.org/10.1007/s12087-010-0046-0>
- Vargo, S. L., & Lusch, R. F. (2014). Inversions of service-dominant logic. *Marketing Theory*, 14(3), 239–248. <https://doi.org/10.1177/1470593114534339>
- Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: an extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, 44(1), 5–23. <https://doi.org/10.1007/s11747-015-0456-3>
- Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*, 26(3), 145–152. <https://doi.org/10.1016/j.emj.2008.04.003>
- Vargo, S. L., & Morgan, F. W. (2005). Services in Society and Academic Thought: An Historical Analysis. *Journal of Macromarketing*, 25(1), 42–53. <https://doi.org/10.1177/0276146705275294>
- Vaughan, D. (1992). Theory Elaboration: The Heuristics of Case Analysis. In C. Ragin & H. Becker (Eds.), *What is a Case?* (pp. 173–202). Cambridge: Cambridge University Press.
- Vavoula, G., Sharples, M., Rudman, P., Meek, J., & Lonsdale, P. (2009). Myartspace: Design and evaluation of support for learning with multimedia phones between classrooms and museums. *Computers & Education*, 53(2), 286–299. <https://doi.org/10.1016/j.compedu.2009.02.007>
- Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. A. (2009). Customer Experience Creation: Determinants, Dynamics and Management Strategies. *Journal of Retailing*, 85(1), 31–41. <https://doi.org/10.1016/j.jretai.2008.11.001>
- Verhoef, P. C., Reinartz, W. J., & Krafft, M. (2010). Customer Engagement as a New Perspective in Customer Management. *Journal of Service Research*, 13(3), 247–252. <https://doi.org/10.1177/1094670510375461>
- Verleye, K. (2015). The co-creation experience from the customer perspective: its measurement and determinants. *Journal of Service Management*, 26(2), 321–342. <https://doi.org/10.1108/JOSM-09-2014-0254>
- Veverka, J. A. (1998). *Interpretive master planning: the essential planning guide for interpretive centres, parks, self-guided trails, historic sites, zoos, exhibits and programs* (2nd ed.). Tustin: Acorn Naturalists.

- Vittersø, J., Vorkinn, M., Vistad, O. I., & Vaagland, J. (2000). Tourist experiences and attractions. *Annals of Tourism Research*, 27(2), 432–450. [https://doi.org/10.1016/S0160-7383\(99\)00087-0](https://doi.org/10.1016/S0160-7383(99)00087-0)
- Voase, R. (2002). Rediscovering the imagination: investigating active and passive visitor experience in the 21st century. *International Journal of Tourism Research*, 4(5), 391–399. <https://doi.org/10.1002/jtr.390>
- Voase, R. (2007). Visiting a Cathedral: The Consumer Psychology of a “Rich Experience.” *International Journal of Heritage Studies*, 13(1), 41–55. <https://doi.org/10.1080/13527250601010851>
- Voase, R. (2009). Rediscovering the Imagination: Meeting the Needs of the “New” Visitor. In A. Fyall, B. Garrod, A. Leask, & S. Wanhill (Eds.), *Managing Visitor Attractions: New Directions* (pp. 148–165). 2nd ed., Oxford: Butterworth-Heinemann Ltd.
- Voima, P., Heinonen, K., & Strandvik, T. (2010). *Exploring Customer Value Formation: A Customer Dominant Logic Perspective* (Working Paper No. 552). Hanken School of Economics, Helsinki. Retrieved from <https://helda.helsinki.fi/bitstream/handle/10227/630/552-978-952-232-088-9.pdf?sequence=1>
- Volo, S. (2009). Conceptualizing Experience: A Tourist Based Approach. *Journal of Hospitality Marketing & Management*, 18(2-3), 111–126. <https://doi.org/10.1080/19368620802590134>
- vom Lehn, D. (2010). Discovering “Experience-ables”: Socially including visually impaired people in art museums. *Journal of Marketing Management*, 26(7-8), 749–769. <https://doi.org/10.1080/02672571003780155>
- Wakefield, K., & Blodgett, J. (2016). Retrospective: the importance of servicescapes in leisure service settings. *Journal of Services Marketing*, 30(7), 686–691. <https://doi.org/10.1108/JSM-08-2016-0291>
- Wakefield, K. L., & Blodgett, J. G. (1996). The effect of the servicescape on customers’ behavioral intentions in leisure service settings. *Journal of Services Marketing*, 10(6), 45–61. <https://doi.org/10.1108/08876049610148594>
- Walker, K., & Moscardo, G. (2014). Encouraging sustainability beyond the tourist experience: ecotourism, interpretation and values. *Journal of Sustainable Tourism*, 22(8), 1175–1196. <https://doi.org/10.1080/09669582.2014.918134>
- Walle, A. H. (1997). Quantitative versus qualitative tourism research. *Annals of Tourism Research*, 24(3), 524–536. [https://doi.org/10.1016/S0160-7383\(96\)00055-2](https://doi.org/10.1016/S0160-7383(96)00055-2)
- Walliman, N. (2006). *Social Research Methods*. London: Sage Publications Ltd. <https://doi.org/10.4135/9781849209939.n5>
- Walsh-Heron, J., & Stevens, T. (1990). *The Management of Visitor Attractions and Events*. London: Prentice Hall.
- Walters, D. (2009). Approaches in museums towards disability in the United Kingdom and the United States. *Museum Management and Curatorship*, 24(1), 29–46. <https://doi.org/10.1080/09647770902731759>

- Wang, D., Xiang, Z., & Fesenmaier, D. R. (2014). Adapting to the mobile world: A model of smartphone use. *Annals of Tourism Research*, 48(1), 11–26. <https://doi.org/10.1016/j.annals.2014.04.008>
- Wang, N. (1999). Rethinking authenticity in tourism experience. *Annals of Tourism Research*, 26(2), 349–370. [https://doi.org/10.1016/S0160-7383\(98\)00103-0](https://doi.org/10.1016/S0160-7383(98)00103-0)
- Wanhill, S. (2009a). Innovation in Attraction Development: Lessons of Experience. *Acta Turistica*, 21(1), 7–44. Retrieved from <https://ezp.napier.ac.uk/login?url=http://search.proquest.com/docview/741412014?accountid=16607>
- Wanhill, S. (2009b). Interpreting the Development of the Visitor Attraction Product. In A. Fyall, B. Garrod, A. Leask, & S. Wanhill (Eds.), *Managing Visitor Attractions: New Directions* (pp. 16–35). 2nd ed., Oxford: Butterworth-Heinemann Ltd.
- Waring, T., & Wainwright, D. (2008). Issues and Challenges in the Use of Template Analysis: Two Comparative Case Studies from the Field. *The Electronic Journal of Business Research Methods*, 6(1), 85–94. Retrieved from <http://www.ejbrm.com/volume6/issue1/p85>
- Watson, S., & McCracken, M. (2002). No attraction in strategic thinking: perceptions on current and future skills needs for visitor attraction managers. *International Journal of Tourism Research*, 4(5), 367–378. <https://doi.org/10.1002/jtr.386>
- Watson, S., McCracken, M., & Hughes, M. (2004). Scottish visitor attractions: managerial competence requirements. *Journal of European Industrial Training*, 28(1), 39–66. Retrieved from <https://ezp.napier.ac.uk/login?url=http://search.proquest.com/docview/215380400?accountid=16607>
- Weick, K. E. (2007). The generative properties of richness. *Academy of Management Journal*, 50(1), 14–19. <https://doi.org/10.5465/AMJ.2007.24160637>
- Weidenfeld, A., Butler, R., & Williams, A. W. (2011). The role of clustering, cooperation and complementarities in the visitor attraction sector. *Current Issues in Tourism*, 14(7), 595–629. <https://doi.org/10.1080/13683500.2010.517312>
- Weidenfeld, A., Williams, A. M., & Butler, R. W. (2014a). Spatial competition and agglomeration in the visitor attraction sector. *Service Industries Journal*, 34(3), 175–195. <https://doi.org/10.1080/02642069.2013.778251>
- Weidenfeld, A., Williams, A. M., & Butler, R. W. (2014b). Spatial competition and agglomeration in the visitor attraction sector. *The Service Industries Journal*, 34(3), 175–195. <https://doi.org/10.1080/02642069.2013.778251>
- Weiler, B., & Smith, L. (2009). Does more interpretation lead to greater outcomes? An assessment of the impacts of multiple layers of interpretation in a zoo context. *Journal of Sustainable Tourism*, 17(1), 91–105. <https://doi.org/10.1080/09669580802359319>
- Weiler, B., & Walker, K. (2014). Enhancing the visitor experience: Reconceptualising the tour guide's communicative role. *Journal of Hospitality and Tourism Management*, 21(1), 90–99. <https://doi.org/10.1016/j.jhtm.2014.08.001>

- Weinberg, D. (2008). The philosophical foundations of constructionist research. In J. A. Holstein & J. F. Gubrium (Eds.), *Handbook of Constructionist Research* (pp. 13–40). New York: Guildford Press.
- Welsh, P. H. (2005). Re-configuring museums. *Museum Management and Curatorship*, 20(2), 103–130. <https://doi.org/10.1080/09647770500302002>
- Wengraf, T. (2001). *Qualitative Research Interviewing Bibliographic Narrative and Semi-Structured Methods*. London: Sage Publications Ltd.
- Whitfield, J. E. (2009). Why and How UK Visitor Attractions Diversify Their Product to Offer Conference and Event Facilities. *Journal of Convention & Event Tourism*, 10(1), 72–88. <https://doi.org/10.1080/15470140902768210>
- Widner-Ward, C., & Wilkinson, A. E. (2006). *Conducting meaningful interpretation: A field guide for success*. Golden: Fulcrum.
- Wight, A. ., & Lennon, J. (2007). Selective interpretation and eclectic human heritage in Lithuania. *Tourism Management*, 28(2), 519–529. <https://doi.org/10.1016/j.tourman.2006.03.006>
- Wijeratne, A. J. C., Van Dijk, P. A., Kirk-Brown, A., & Frost, L. (2014). Rules of engagement: The role of emotional display rules in delivering conservation interpretation in a zoo-based tourism context. *Tourism Management*, 42, 149–156. <https://doi.org/10.1016/j.tourman.2013.11.012>
- Williams, J., & Aitken, R. (2011). The Service-Dominant Logic of Marketing and Marketing Ethics. *Journal of Business Ethics*, 102(3), 439–454. <https://doi.org/10.1007/s10551-011-0823-z>
- Wishart, J., & Triggs, P. (2010). MuseumScouts: Exploring how schools, museums and interactive technologies can work together to support learning. *Computers & Education*, 54(3), 669–678. <https://doi.org/10.1016/j.compedu.2009.08.034>
- Wolf, I. D., Stricker, H. K., & Hagenloh, G. (2013). Interpretive media that attract park visitors and enhance their experiences: A comparison of modern and traditional tools using GPS tracking and GIS technology. *Tourism Management Perspectives*, 7(1), 59–72. <https://doi.org/10.1016/j.tmp.2013.04.002>
- Woods, E., Billingham, M., Looser, J., Aldridge, G., Brown, D., Garrie, B., & Nelles, C. (2004). Augmenting the science centre and museum experience. In *Proceedings of the 2nd international conference on computer graphics and interactive techniques in Australasia and South East Asia - GRAPHITE '04* (pp. 230–236). ACM Press. <https://doi.org/10.1145/988834.988873>
- Woodside, A. G., & Dubelaar, C. (2002). A General Theory of Tourism Consumption Systems: A Conceptual Framework and an Empirical Exploration. *Journal of Travel Research*, 41 (2), 120–132. <https://doi.org/10.1177/004728702237412>
- Xiao, H., & Smith, S. L. J. (2006). Case studies in tourism research: A state-of-the-art analysis. *Tourism Management*, 27(5), 738–749. <https://doi.org/10.1016/j.tourman.2005.11.002>

- Xu, F., Tian, F., Buhalis, D., Weber, J., & Zhang, H. (2016). Tourists as Mobile Gamers: Gamification for Tourism Marketing. *Journal of Travel & Tourism Marketing*, 33(8), 1124–1142. <https://doi.org/10.1080/10548408.2015.1093999>
- Xu, H., Cui, Q., Ballantyne, R., & Packer, J. (2013). Effective environmental interpretation at Chinese natural attractions: the need for an aesthetic approach. *Journal of Sustainable Tourism*, 21(1), 117–133. <https://doi.org/10.1080/09669582.2012.681787>
- Xu, J. (2010). Perceptions of tourism products. *Tourism Management*, 31(5), 607–610. <https://doi.org/10.1016/j.tourman.2009.06.011>
- Yi, Y., & Gong, T. (2013). Customer value co-creation behavior: Scale development and validation. *Journal of Business Research*, 66(9), 1279–1284. <https://doi.org/10.1016/j.jbusres.2012.02.026>
- Yin, R. (2014). *Case Study Research: Design and Methods* (5th ed.). London: Sage Publications Ltd.
- Yocco, V., Danter, E. H., Heimlich, J. E., Dunckel, B. A., & Myers, C. (2011). Exploring use of new media in environmental education contexts: introducing visitors' technology use in zoos model. *Environmental Education Research*, 17(6), 801–814. <https://doi.org/10.1080/13504622.2011.620700>
- Yoo, Y. (2010). Computing in Everyday Life: A Call for Research on Experiential Computing. *MIS Quarterly*, 34(2), 213–231. Retrieved from <https://misq.org/catalog/product/view/id/1380>
- Zátori, A. (2016). Exploring the value co-creation process on guided tours (the “AIM-model”) and the experience-centric management approach. *International Journal of Culture, Tourism and Hospitality Research*, 10(4), 377–395. <https://doi.org/10.1108/IJCTHR-09-2015-0098>
- Zatori, A., Smith, M. K., & Puczko, L. (2018). Experience-involvement, memorability and authenticity: The service provider's effect on tourist experience. *Tourism Management*, 67(1), 111–126. <https://doi.org/10.1016/j.tourman.2017.12.013>
- Zhang, H., Lu, Y., Wang, B., & Wu, S. (2015). The impacts of technological environments and co-creation experiences on customer participation. *Information & Management*, 52(4), 468–482. <https://doi.org/10.1016/j.im.2015.01.008>
- Zhang, H., Wu, Y., & Buhalis, D. (2017). A model of perceived image, memorable tourism experiences and revisit intention. *Journal of Destination Marketing & Management*. <https://doi.org/10.1016/j.jdmm.2017.06.004>
- Zhang, T. (Christina), Lu, C., & Kizildag, M. (2017). Engaging Generation Y to Co-Create Through Mobile Technology. *International Journal of Electronic Commerce*, 21(4), 489–516. <https://doi.org/10.1080/10864415.2016.1355639>
- Zheng, W., Liao, Z., & Qin, J. (2017). Using a four-step heuristic algorithm to design personalized day tour route within a tourist attraction. *Tourism Management*, 62, 335–349. <https://doi.org/10.1016/j.tourman.2017.05.006>

Zomerdijk, L. G., & Voss, C. A. (2010). Service Design for Experience-Centric Services. *Journal of Service Research*, 13(1), 67–82.
<https://doi.org/10.1177/1094670509351960>

Zwick, D., Bonsu, S. K., & Darmody, A. (2008). Putting Consumers to Work: `Co-creation` and new marketing govern-mentality. *Journal of Consumer Culture*, 8(2), 163–196. <https://doi.org/10.1177/1469540508090089>

APPENDIX 1. INTERVIEW GUIDE A) VISITOR ATTRACTION MANAGEMENT

1. Welcome and introduction

- a. Purpose of study
- b. Role and responsibility – no name necessary

2. Approach to interpretation

- a. Core subject area of the museum – nature of the collection
- b. What sort of messages would you hope visitors take away from their visit
- c. With that in mind, what sorts of ways does the site present its messages in the exhibitions?

3. The exhibition itself

- a. Name the exhibition – core themes in this exhibition?
- b. Key exhibits / artefacts
- c. How does it compare to other exhibitions within the site?

4. The technology / user experience

- a. What sort of technology has been selected for this exhibition
- b. What led to this being selected
- c. What sort of purpose does the exhibit have
- d. How does it aid understanding / contribute to the visitor experience?

5. Success factor / authenticity / appropriateness

- a. Alternative ways to present the messages?
- b. Any issues over appropriateness
- c. How important do you feel technology is in the visitor experience at the site
- d. How would you like to see the exhibition develop?

6. Anything else you would like to add to the interview?

APPENDIX 2. INTERVIEW GUIDE B) VISITOR

1. Welcome and introduction

- a. Purpose of study
- b. Who are you here with?
- c. Visited before?
- d. Type / nature of the experience that you are seeking?

2. Engagement with technology

- a. Use of particular platform - how did you find it?
- b. Message – was it useful for introducing the concept
- c. Anything in particular you enjoyed about the technology

3. The technology itself / user experience

- a. Easy to use
- b. Features
- c. Customisation / personalisation

4. Visitor factors

- a. Anything that limited or supported your engagement with the technology?
- b. Access
- c. Other visitors
- d. External factors?

5. Contribution to the experience?

- a. Importance of the technology within the exhibition
- b. Other ways of engaging with the collection
- c. Overall preferences for technology in visitor attractions
- d. Any expectations for Surgeons Hall? Could it be made better?
- e. Anything you would like to see?

6. Anything else you would like to add to the interview?

APPENDIX 3. CODING TEMPLATE (INITIAL)

Level 1	Level 2	Level 3	Level 4	Level 5
MANAGEMENT FACTORS				
	Value of technology			
		Opportunities		
			Enhancement	
				Multi-sensory
		Interpretative tool	Replacement	
			Immersion	
	Authenticity		Theming	
		Heritage-based		
			Links with scientific community	
			Artefacts	
	Technology management			
		Layers		
			Mechanical	
			Audio / visual	
		Misuse		Foreign-language provision
		Failure	Relationship with artefact	
			Breakage	
				Cost
				Replacement
	Commercial drivers			
		Storyline / narrative		
			Variety	
			Collaborative	
				Integrate personal history
		Management challenges		
			New visitor expectations	
			Widening access	
		Organisational processes		
			Lack of expertise	
				Technology experts
		Ownership dynamics	Conservation work	
			Charity status	
			Public	
		Funding streams		
			Return visitation	
			Availability	
				Crowdfunding
	Nature of message			
		Edutainment		
			Play	
			Strong educational remit	
				School-market
				Curriculum
		Cultural and heritage		
			Appreciation of local culture	
				Community
				History
				People of Dundee
			International recognition	
				Accessible for international markets

Appendix 3. Coding Template (v1 – Initial) cont.

Level 1	Level 2	Level 3	Level 4	Level 5
VISITOR FACTORS				
	Interpretation of the experience			
		Interactive		
			Choice	
			Conflicting	Sensory
				Excessive interpretation
				Inconsistent
	Demographics			
		Visitor groupings		
			Family	
			Individual	Seeking interpretation that is child-friendly
		Age divisions		
			Children	
				Presence of children
				School group
				Senior visitors
	Propensity			
		Behaviour		
			Acceptance	
			Avoidance	Technology-seeking
	Access			Technology-detached
		Temporal		Fleeting interaction
			Time of day	
				Morning
				Afternoon
			Time of year	
				Term-time
				Holiday
				Seasonal
		Presence of other visitors	Leisure	
			Education / school group	
				Distraction
				Noise
	Preference			
		Expectations		
			Dynamic	
			Reflective	
		Engaging		Tied to local heritage
			Range of interpretation	
				Print
				Audio/visual
				Touch-based
				Cinema

APPENDIX 4. CODING TEMPLATE (FINAL)

Level 1	Level 2	Level 3	Level 4
MANAGEMENT CHALLENGES & ISSUES			
	Motivating Factors		
		Value of technology as an interpretative tool	
			<i>Contextualising content</i>
			<i>Replacement</i>
			<i>Relationship with original artefacts</i>
		Widening access agenda	
			<i>Inclusivity</i>
			<i>Language barriers</i>
		Funding streams	
			<i>Funding as a management challenge</i>
			<i>Pursuit of external funding</i>
			<i>Long-term investment</i>
	Operational Issues		
		Interpretative layering	
			<i>Aesthetic considerations</i>
			<i>Variety in product offering</i>
		Technology failure	
			<i>Breakage</i>
			<i>Design faults</i>
			<i>Authenticity</i>
		Organisational processes	
			<i>Curatorial differences</i>
			<i>Multi-actor relationships</i>
	Experiential Expectations		
		Engagement with subject matter	
			<i>Meaningful engagement</i>
			<i>Inspiration and reflection</i>
		Narrative creation	
			<i>Story as the priority</i>
			<i>Collaborative narrative creation</i>
		Dynamism	
			<i>Alternative experiences</i>
			<i>Multi-sensory</i>

Appendix 4. Coding Template (v3 – Final) cont.

Level 1	Level 2	Level 3	Level 4
VISITOR PERCEPTIONS & DETERMINANTS			
	Environmental		
		Access	
			<i>Proximity</i>
			<i>Free access</i>
			<i>Presence of other visitors</i>
		Visitor route	
			<i>Direction</i>
			<i>Structure</i>
			<i>Route guidance</i>
		Interpretative overload	
			<i>Density of material</i>
			<i>Conflicting interpretation</i>
	Technology Use		
		Visitor preference	
			<i>Impact of generational cohort</i>
			<i>Disconnection</i>
			<i>Visitor grouping</i>
		Behaviours	
			<i>Avoidance</i>
			<i>Acceptance</i>
		Usability	
			<i>Instruction</i>
			<i>Functionality</i>
	Experiential Desires		
		Degree of choice	
			<i>Free choice</i>
			<i>Limitation</i>
		Interactivity	
			<i>Constantly connected</i>
			<i>Involvement</i>
		Memorable experiences	
			<i>Storyline</i>
			<i>Incremental development</i>
			<i>Physical</i>

APPENDIX 5. POTENTIAL ETHICAL ISSUES AND MANAGEMENT APPROACH

Based on the Edinburgh Napier University Code of Practice on Research Integrity (2013, Version 1.1)

Ethical Issue	Description	Researcher Actions to Manage Issue
Right to refusal	Participants should be given the right to refuse to take part in the research prior to data collection. Similarly, respondents should be free to leave the research at any time without reason or reprisal.	All participants were given the right to decline to be part of the research. This was identified on the consent form and reminded verbally to them throughout the dialogue.
Informed consent	The right for research participants to be aware of the purpose and nature of the study and given the explicit opportunity to consent or opt-out of the research.	Written consent forms for interview participants were retained by the researcher. Written consent from the site management for observation within the open exhibition spaces. Information sheet and researcher details made available to all interview participants.
The known researcher	The individual is clearly identifiable as a bona fide researcher and will not use covert or deceptive practice to collect data.	The researcher was identifiable within the environment. A University ID badge was visible throughout. During observation, the researcher was visible and overt within the exhibition space.
Confidentiality of participants	The need for participants' personal data to be kept private and unidentifiable in the reporting.	All manager interview respondents were identified by the label 'Manager' and coded appropriately. All visitor interview participants were identified just by an alias. Demographic data was collected to identify trends in the responses (e.g. Visitor A, 40 years, male, UK). These details were grouped together using the MAXQDA software to allow the researcher to identify which responses came from which site for more accurate analysis.

Appendix 5. Potential Ethical Issues and Management Approach (cont.)

Ethical Issue	Description	Researcher Actions to Manage Issue
Vulnerable groups	The need to acknowledge individuals or groups that may be considered more vulnerable within the research process or are not able to provide 'standard' informed consent.	The researcher did not include any vulnerable groups as participants in the study.
Commercial sensitivity	Any reporting of commercial details that would not be appropriate for public dissemination. Similarly, any sensitive material that would identify the site or pose a threat to commercial developments.	Any commercially sensitive data that emerged from the management interviews was omitted.
Dissemination of findings	How the research findings will be made available and any associated issues with its publication.	Based on agreements with the organisations taking part in this study, an industry report could be prepared giving an overview of the findings and the key outcomes of the research. This will follow the same ethical scrutiny as the thesis and confidentially will be maintained throughout. The informed consent form asked individuals whether they agreed to the material being published.
Harm to participants	Any potential risks to participants such as physical, social, psychological or professional as a result of taking part OR refusing to take part in the study.	This research did not identify any potential harm to its participants. The study was non-invasive and conducted in an informal discussion format. Information was readily available for the participants and their rights/wellbeing was considered throughout the process.
Data storage / access	How the raw data will be collected and stored for analysis. This covers access to the data and the security of the information.	Data collected at the research sites was a mixture of audio recordings and written observation notes. These were retained by the researcher alone and kept securely on-campus. During the analysis stage, these recordings were transcribed by the researcher alone and stored electronically within password protected files.
Researcher safety	Any potential harm to the researcher throughout the research process.	On-site research was conducted in public spaces, during normal business hours. Travel to and from sites was through a mix of public / private transport. Details of where the researcher was working, was made accessible to colleagues and supervisory team.

APPENDIX 6. PARTICIPANT INFORMATION SHEET



PARTICIPANT INFORMATION SHEET

PhD Research: 'The Role of Interactive Technology in the Co-creation of Experience in Scottish Visitor Attractions'

INTRODUCTION:

This information sheet provides a brief overview of a PhD research study currently being undertaken by Ellis Urquhart within the Business School of Edinburgh Napier University. This summary gives you as a participant, an overview of the research objectives, the types of research being conducted and your involvement. This allows you to be aware of what your views are contributing to and offers a direct point of contact if you have any questions, concerns or feedback.

OVERVIEW OF RESEARCH:


This study questions the role of interactive technology within the exhibitions of Scottish visitor attractions, and particularly how these contribute to the visitor experience. This site has been chosen as it uses interactive technology as part of the exhibition and the research today hopes to hear some of the visitors' views on this.

Your involvement will be in the form of a semi-structured interview that is audio recorded. Semi-structured refers to the style of questioning and means that Ellis has a series of broad topics to cover, but these are flexible and less rigid than standard questions. This allows the interview to be conducted more as a discussion. Ellis will ask you about whether you used and engaged with the technology at the site, and about your views on how it has affected your visit.

The results of this study will be compared to the academic literature to create a new theoretical framework. It is hoped that this will provide new knowledge in the field and also contribute positively to the development of the industry. Please note, that anonymity will be guaranteed and that all data will be confidential and securely stored.

POINT OF CONTACT:

For any issues regarding your participation in the study or to request a brief report of the research findings please contact:

Ellis Urquhart (BA Hons)
The Business School
Edinburgh Napier University
Craiglockhart Campus, Room 1-23 Edinburgh


Thank you for choosing to take part in this study, your involvement is greatly appreciated and vital to its success. Please do not hesitate to contact me with any issues or for any additional information.

Ellis Urquhart

[Publish Date]

APPENDIX 7. PARTICIPANT CONSENT FORM



EDINBURGH NAPIER UNIVERSITY RESEARCH CONSENT FORM

'The Role of Interactive Technology in the Co-creation of Experience in Scottish Visitor Attractions'

Edinburgh Napier University requires that all persons who participate in research studies give their written consent to do so. Please read the following and sign it if you agree with what it says.

1. I freely and voluntarily consent to be a participant in the research project on the topic of 'interactive technology in visitor attractions' conducted by Ellis Urquhart, who is a PhD Candidate at Edinburgh Napier University's Business School.
2. The broad goal of this research study is to explore the role of interactive technology in visitor experiences at Scottish visitor attractions. Specifically, you will be asked broad questions about your visit and how technology has played a part in your experience. This should take no longer than 30 minutes to complete.
3. I have been told that my responses will be anonymised. My name will not be linked with the research materials, and I will not be identified or identifiable in any report subsequently produced by the researcher.
4. I also understand that if at any time during the interview I feel unable or unwilling to continue, I am free to leave. That is, my participation in this study is completely voluntary, and I may withdraw from it without negative consequences. However, after data has been anonymised or after publication of results it will not be possible for my data to be removed as it would be untraceable at this point.
5. In addition, should I not wish to answer any particular question or questions, I am free to decline.
6. I have been given the opportunity to ask questions regarding the interview and my questions have been answered to my satisfaction.
7. I have read and understand the above and consent to participate in this study. My signature is not a waiver of any legal rights. Furthermore, I understand that I can obtain a copy of the informed consent form for my records.

Participant Signature _____ Date _____

I have explained and defined in detail the research procedure in which the respondent has consented to participate. Furthermore, I will retain one copy of the informed consent form for my records.

Researcher Signature _____ Date _____

Ellis Urquhart, Edinburgh Napier University

Business School

APPENDIX 8. CRITERIA FOR EXCELLENT QUALITATIVE RESEARCH

Adapted from: Tracy (2010)

Criteria	Methods and practices to achieve criteria	Examples from this study
Worthy topic	Topic is: <ul style="list-style-type: none"> • Relevant • Significant • Appropriate • Timely • Interesting 	<ul style="list-style-type: none"> ○ Topic is a timely contribution to the rapidly expanding body of knowledge in co-creation in tourism experiences ○ Explores technological-mediation which is being widely cited as a major growth area in tourism, hospitality & events ○ Significant topic due to its originality and novelty ○ Relevant not only to the VA sector but with implications for other technology-mediated sectors (e.g. events, retail, banking).
Rich rigour	The study uses: <ul style="list-style-type: none"> • Appropriate underpinning theory • Appropriate research methods, samples and data collection techniques • The context under inquiry is appropriately represented 	<ul style="list-style-type: none"> ○ Robust use of SD Logic and co-creation theory to provide a stable framework for the study ○ Appropriate use of the semi-structured interview and observation methods that allowed for flexibility whilst also being focussed ○ Structured use of the Template Analysis technique to refine and interpret the data ○ Use of CAQDAS to organise, store and manage the qualitative data sets ○ Context well established through site profiles
Sincerity	The study acknowledges: <ul style="list-style-type: none"> • The self-reflexivity of the researcher and the impact of their values, biases, worldviews and presence • The limitations and challenges of the research journey 	<ul style="list-style-type: none"> ○ Honest self-reflexivity as to the challenges emerging from the research process ○ Pilot study used to test and reflect on the research methods ○ Open discussion on the limitations of the research and future directions to address these

Appendix 3 Criteria for Excellent Qualitative Research (cont.)

Criteria	Methods and practices to achieve criteria	Examples from this study
Credibility	<p>The research provides:</p> <ul style="list-style-type: none"> • Thick descriptions, detail and strong interpretations • Multi-method triangulation or crystallization • Multiple voices and perspectives 	<ul style="list-style-type: none"> ○ Use of thick descriptions where appropriate to illustrate the unique VA environment ○ Interpretation linked to the existing literature to identify new ground ○ Use of multivocality through interviews with both VA managers and visitors ○ Voice of the researcher maintained through observation notes
Resonance	<p>The study and its findings resonate with readers through:</p> <ul style="list-style-type: none"> • Rich and evocative representations • Transferability • Broad generalisations that could be applied in different contexts 	<ul style="list-style-type: none"> ○ Clear presentation of findings ○ Use of images to contextualise discussion ○ Discussion of overlap between the VA context and other technology-mediated environments to demonstrate transferability ○ Use of personal observation notes and diary entries
Significant contribution	<p>The study provides a significant contribution for:</p> <ul style="list-style-type: none"> • Theory or conceptual development • Practice • Methodological development 	<ul style="list-style-type: none"> ○ Development of the Technology-mediated Co-creative VA experience model ○ Identification of the technology-mediated co-creative experience interface ○ Application of the technology-mediated co-creation concept to the VA context ○ Contributions to practice through VA management strategies
Ethical	<p>The study adheres to:</p> <ul style="list-style-type: none"> • Procedural ethics as stipulated by the institution • Situational / context specific ethics • Relational ethics • Exiting and disseminating ethics 	<ul style="list-style-type: none"> ○ Adherence to the Code of Conduct for Research Integrity as set out by Edinburgh Napier University ○ Discussions around ethics conducted with each of the four VA sites used within the study and the pilot site ○ Participant information including rights and responsibilities provided ○ Informed consent guaranteed through the use of a signed consent form

Appendix 3 Criteria for Excellent Qualitative Research (cont.)

Criteria	Methods and practices to achieve criteria	Examples from this study
Meaningful coherence	<p>The study:</p> <ul style="list-style-type: none"> • Achieves what it set out to • Uses appropriate methods and analysis that adheres to its stated objectives • Expertly connects literature, research questions, findings and interpretations with one another 	<ul style="list-style-type: none"> ○ Reflection on aim and objectives confirms that the study achieved its goals ○ The use of qualitative, in-depth methods in line with the constructivist paradigm that met the needs of the established objectives. ○ Findings and analysis linked back to existing literature in each of the analysis chapters (6 & 7) ○ Production of a conceptual development chapter (8) that re-contextualises the overall findings of the study with existing bodies of knowledge in co-creation, tourism experience and VA management research.