An Exploration of Professional Identity in the Information Technology Sector

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

February 2016

Abstract

At present the Information Technology profession appears to be dogged by high profile project failure, high graduate unemployment rates, employers unable to recruit suitable staff and a professional body under attack. It is not even clear that IT can be considered a profession when compared with other occupational groups in which professional bodies regulate entry and employers demand professional status from their employees. There are some advantages in belonging to a recognised profession, including external recognition and status; and, consequentially, disadvantages in not belonging.

To find out more about the nature of professional identity as experienced in the workplace, this study was designed to explore how IT professionals in leadership roles self-identify. Professional identity is defined to be a coherent self-conception based on skills, abilities, experiences and identification with a profession. The underlying identity theories accept a complex picture of multiple identities with identity commitment and salience affecting behaviour in different contexts. This study explored the nature of professional identity construction and adaptation for experienced IT professionals. As a previously unexplored group in a relatively new profession, the life narrative technique was used to identify factors in the construction and adaptation of identity with insights drawn over the course of a working life.

The findings revealed that participants constructed organisational, technical skills-based and leadership identities but there was little identification with the IT profession, as would have been in evidence, for example, through membership of the British Computer Society or developmental interactions with prototypical IT professionals. Analysis of the data uncovered mechanisms which could explain the lack of identification with the IT profession, including the rate of technological change and an underpowered professional body. The findings were evaluated and a set of emerging recommendations for stakeholders in a strong and stable IT sector were framed, including encouraging employers to endorse chartered status and careful consideration of the review on computing course accreditation underway.

FIGURES

TABLES

Chapter 1: Introduction

The instability of the IT employment market is manifested in many ways; the failure of universities to attract applicants, and women in particular; the reliance on offshoring and the use of outsourcing; the professed challenges of filling IT roles; and, paradoxically, the relatively high number of unemployed computer science graduates. In comparison with accountancy and engineering, the IT employment landscape appears a complex terrain to navigate with the emphasis on job roles related to specific technical experience and demand for technical skills expanding and contracting rapidly. Couple this with the phenomenon of high profile IT project failure and the overall picture that emerges is an industry sector in turmoil. The impact of this is likely to be felt across the UK economy as technology moves from an underpinning to an enabling function. Professional bodies in sectors such as medicine and accountancy have established standards, set expectations of members and offer training and development; and professionals enjoy relatively well established routes into and through these employment sectors. What is not yet clear is whether we have a recognisable IT profession in the UK, nor how that recognition can shape a professional career from entry level to leadership roles. IT workers can become chartered IT practitioners; however employers, even those working on safety critical systems, do not require chartered status as a pre-requisite alongside specific technical skills and experience. Even if employers are not looking for professional status, it is as yet unclear whether IT professionals view themselves as professionals in the sense of belonging to a professional group. This study explored how working lives are experienced in the sector for a group of IT professionals moving into leadership roles and, as a result of new roles, no longer focusing exclusively on technical skills in order to find out from them whether the notion of a profession and their membership of it is recognisable and if not how they construct their workplace identities. This exploration of professional identity revealed insights for the IT sector and the professional body which have the potential to improve the currently somewhat unstable situation. If the situation were improved, IT workers could benefit from clearer career paths, more professional guidance to approaches to work and increased status which in turn might attract new applicants in to study computing at university and introduce some workforce supply and demand stability.

In the field of organisational studies, professional and workplace identity construction have received considerable attention over the past 20 years. A solid body of evidence now exists that extends earlier work on identity into modern workplaces and professions. At its heart, the significance of this work is to better understand how individuals experience work and self-identify as professionals. Previous studies have proved beneficial to organisations and professional bodies as a means of understanding employees' motivations and influencing workplace values with a view to improving induction and staff development, improving relationships with and between employees and, in the case of professional bodies, to support members. Transitions into and out of workplaces have also been studied, for example, students transitioning into the workplace and employees transitioning to retirement, with findings designed to reduce identity conflict and improve the experience of transition.

The construction of identity of individuals within well understood professions, such as medicine and law, has previously been studied to inform workplace practice from an employee perspective. Examples include studies focusing on how individuals resolve identity conflict as they take on more management responsibility and need to reconcile professional standards with imperatives for efficient resource management. The Information Technology[1] (IT) sector has not been the focus of many such professional identity studies so it is not yet clear whether IT professionals construct their identities in similar ways to more established professions, mourn the loss of technical skills as they transition to management roles or face identity conflict in resolving varying priorities and working relationships.

The IT sector is a relatively new occupational area and its professional body, the British Computing Society (BCS), received its chartered status in 1984. In the IT sector chartered status is granted through an application process based on accredited university courses or examinations. With an estimated 753,000 graduates working in IT (Universities UK, 2011) and 70,000 members, the BCS represents only approximately 10% of professionals with a small fraction holding chartered status (British Computer Society, 2014). Job adverts in the IT sector rarely mention the need

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[1] Throughout this thesis the acronym IT is used. However, as IT infrastructure moved away from mainframe computing towards distributed and networked computers, the term Information and Communication Technology (ICT) was coined. Within the term IT there is now the understanding that networking communications is a fundamental part of the technology and so the term ICT has in many cases reverted to IT.

for applicants to have chartered status or BCS membership so the worth to job seekers is not clear. By contrast, medicine is a regulated profession where medics are required to be members of the General Medical Council (GMC) in order to practise. Members look to the GMC for professional development; while compliance with acceptable professional standards is policed through disciplinary action taken with the ultimate sanction of denying membership status and thus ability to practice.

Organisations have become increasingly reliant on IT to do business and the way IT is used in an organisation can make a difference in terms of profits, reputation and even survival. However the lack of regulation of the profession may be hampering not only business capability but national and personal security as IT now impacts on all areas of public and private life.

The self-conceptualisation of professional IT workers, in terms of their identity construction and adaptation as they progress through their careers, provided the focus for this study. The situational context for the study was an exploration of identity at a time when IT practitioners and managers are called upon to lead strategic projects, for example the introduction of new technology.

Aim: The overarching aim of this thesis is to describe a study into professional identity construction and identity adaptation among experienced IT practitioners.

The objectives were as follows:

Objective 1: Conduct a literature review of identity and professional identity with consideration of the IT sector, and identify research questions.

Objective 2: Using an appropriate research philosophy, identify a research methodology based on an exploration of the research questions and gather empirical evidence from a participant group.

Objective 3: Analyse the data in the context of identity theories and present a thesis.

Objective 4: Make recommendations for practice in the IT profession and for further work.

The project aimed to identify the nature of identity construction and adaptation in a participant group of experienced IT professionals. Of interest, was not only their

identity within their current role but a wider exploration of identity adaptation over a working life. The participant group was drawn from working professionals studying a part-time work-based Strategic ICT Leadership Masters programme. The study explored, for this participant group, how professional identity was constructed, adapted and how multiple facets of identity interacted with a view to providing insights into life as an IT professional.

The study found that far from participants identifying with the IT profession, they largely identified with their organisations. While this might be advantageous for their organisations, to which they expressed loyalty, there was no mention of the wider dimensions that a strong professional body might impart nor the consequent ability to use professional status to inform business decisions.

1.1 Professional identity

As individuals progress through their careers they may move from skills-based roles into roles in which there is a need for, and expectation of, leadership. The encompassing term for identity at work in a professional role is *professional identity*.

Cascio & Gasker (2001) defined professional identity as consisting of a self-image made up from a body of knowledge and a repertoire of skills combined with 'the acceptance of the values of the profession'. They argued that professional identity includes a 'shared feeling of purpose' which provides a bond for its members. Due to IT work being a relatively new activity in which it is not yet clear that strong professional boundaries have been established, this study uses the wider definition of professional identity, namely 'the relatively stable and enduring constellation of attributes, beliefs, values, motives, and experiences in terms of which people define themselves in a professional role' (Ibarra, 1999, pp. 764-765). In particular the professional role is significant, suggestive as it is of what the individual *does* rather than the notion of a body to which the individual *belongs*. Professionalism, for example as defined for the IT profession by Thomson (2008) to encompass status, methods and the standards expected of a professional, will also be explored to aid analysis of the data in terms of those attributes accorded to professional identity as opposed to workplace, organisational or personal identity. Where the narrower definition of professional identity is used in this thesis, namely the identification of an individual with a

professional body, it is prefixed by the term 'IT' and referred to as IT professional identity.

An exploration of the theories of identity, and in particular professional identity, formed a significant part of the literature review to underpin the research. This encompassed organisational identity, identification as a skilled practitioner and leadership identity since an appreciation of the characteristics of each was required to inform the analysis and locate the data collected.

1.2 IT professional roles

Knowing more about the nature of professional roles in IT underpins the identification of factors affecting the adaptation of professional identities as individuals transition to new roles. With the study itself designed to explore how IT professionals self-identify, this section provides an overview of current roles with a view to first understanding what IT professionals do.

The Skills Framework for the Information Age (SFIA), with seven levels from practitioner to executive, was developed to provide a common language for the IT industry in order to identify the spectrum and hierarchy of roles (McLaren & Hayes, 2006). The term IT practitioner was used in the thesis to convey role-based activity associated with levels one to four on the SFIA scale, while the term IT leader was used to represent individuals working in roles identified as those on level five and above. In practice there was considerable overlap with IT leaders spending significant amounts of time on technical development work or technical problem solving, and IT practitioners at times having leadership responsibilities and exhibiting leadership behaviours.

The Chief Information Officer (CIO), or IT Director, in an organisation is responsible for the computer systems and underlying technology infrastructure designed to support the goals of the enterprise. The role is relatively new, emerging gradually in the late 1960s as businesses started to rely on computer systems to support their business functions and computing equipment became a burgeoning business expense, worthy of boardroom-level discussion and decisions (Krotov, 2015). While general management skills are important, CIOs almost exclusively have a background in computing and many hold a management qualification such as an MBA (Weiss &

Adams, 2010). In some companies the roles are disaggregated to a Chief Information Officer responsible for the information flow required for the business and a Chief Technology Officer responsible for the underlying technological infrastructure (for example, networks and servers). This disaggregation is evidence of the ubiquity of computing data and infrastructure throughout modern organisations. A 2007 survey of CIOs found them to be concerned about people leadership, managing budgets and security as well as making decisions about emerging technology (Granger, 2012). Weiss & Adams (2010) found that CIOs are becoming more strategic and are increasingly embedded in the business functions, often preferring management and leadership activity over technical work. Maximising operational effectiveness of IT functions through strong and trusting relationships with other departments is seen as critical to running a successful business (for example, Phillip, 2008; Krotov, 2015); however trust can be challenging in a context of high expectations of service coupled with limited resources. Preston et al (2008) found that CIOs were most effective when granted strategic decision-making authority; however earlier studies have reported that CIOs are generally not afforded this authority (Kaarst-Brown, 2005). Through the expansion of the role IT plays in organisations, enterprise outcomes depend increasingly on the ability of CIOs to be effective leaders.

This study was designed to explore the experiences leading to self-identification of IT practitioners on whom there are leadership expectations, for example an organisational expectation to lead the IT function or lead the introduction of a new technology.

1.3 Conclusion

The IT sector is facing many challenges relating to workforce fluctuations in the face of advances in technology. Attracting, retaining and developing staff have become problems not just for the sector but for the UK economy, as evidenced by financial security breaches, IT project failures and reported skills shortages - all of which could be symptoms of, for example, a lack of leadership, specific skills and planning.

In other more established professions, the professional body plays a role in regulation and development. As a relatively new industry sector, IT professionals are, at present, an under-examined group. The nature of identity construction and adaptation for IT professionals as they experience their working lives may have similarities to, or

differences from, more established professions. This study was designed to explore identity construction and adaptation amongst a group of participants who have experienced leading a strategic IT project within their organisations. Through considering internal and external interactions, IT leadership was explored and challenges associated with status within the organisation together with high expectations of delivery surfaced. The professional body was found to have no impact on the participants' self-identification; instead they were found to identify strongly with their organisations. A stronger sense of belonging to a professional group could counter some of the wider challenges the IT sector is currently facing.

The literature review is designed to provide a context for the research and illuminate existing work with a view to identifying the research questions for this study. It is contained in Chapter 2.

The research methodology, as designed to address the research questions, is described and explained in Chapter 3. This chapter also explains the research methods employed.

Chapter 4 is a detailed exposition of the findings, providing a way for the participants' voices to surface. The findings are categorised according to the themes which emerged from the literature review and emergent themes are identified and considered.

Chapter 5 is a discussion of the findings with specific reference to the literature review to explore similarities and differences in the existing literature and to consider the theories of identity in light of the study's findings.

The research questions are re-visited in Chapter 6 and the contribution of this thesis is formulated.

Chapter 2: Literature Review

2.1 Introduction

With IT now underpinning most social and economic activity, professionalising the sector has the potential to enhance the quality of output, increase the status of IT as an occupation and improve perceptions of IT. As a relatively new occupational area, learning from other professional groupings holds out the promise of improving the situation in the IT sector where it is not yet clear that IT is a recognisable profession. Research into professional identity can reveal how, even whether, workers self-identify as professionals and the impact of this on them as individuals, and hence on the quality of work, their perceived status and loyalties. IT leaders are in a unique position of setting expectations for their teams and of representing IT units within their organisations so a consideration of their movements in and through the sector and their self-identification in the workplace can inform attempts to stabilise the IT workforce. Indeed, the following questions arise: do IT professionals construct a professional identity based on belonging to a professional body with consequent observations of membership, skills and ethics; is identity disrupted through role change and challenges to skills-based self-efficacy and if so what impact does this have on individuals? The literature is explored in four separate themes: theories of identity which underpin empirical research and analysis; studies of professional identity in a range of professions; professional identity in IT, about which little has been published; and finally, theories and identity studies in leadership and in particular IT leadership. The themes are designed to uncover what is known about identity and what it means for IT leaders, and subsequently for the IT sector.

In the main, studies of the construction of professional identity draw on two theories of identity that have evolved over the last 50 years: identity theory and social identity theory; often failing to state their theoretical position. Underpinned by symbolic interactionism, these mature theories collide and overlap in the process of analysing behaviour and narratives of self. Leary & Tangney (2003) argued that there is broad general agreement within sociology and psychology that, at its core, consideration of the self is underpinned by our human ability to self-reflect. Alongside these theories, structuration theory (Giddens, 1984) considers the extent to which the individual as

agent can construct an identity as opposed to being curtailed by the situation in which they find themselves.

The research questions for this study of IT professionals, as they emerge from the literature review, are presented in the final section of this chapter.

2.2 Theories of Identity

Recognising that while some behaviour is spontaneous, most self-regulating behaviour (for example feelings of guilt or self-esteem) arises from this ability to self-reflect which Goffman (1959) and other early researchers in the field suggested leads to us acting out roles. According to Super (1980), nine life-roles can be identified: child, student, 'leisurite', citizen, worker, spouse, homemaker, parent and pensioner and four theatres which are defined as home, community, school and workplace (p. 284). Bourdieu (1985) extended the notion of theatres, or fields, to include families, cohorts, teams, religious affiliations and political groups. Rather than progressing through sequential life role stages, individuals are considered to comprise multiple selves or identities (for example, Ashforth & Mael, 1989; Korte, 2007; Miner 2002).

Theories of identity are underpinned by sociological and psychological considerations of the nature of self and society and the most significant perspective is symbolic interactionism. This section first considers the emergence of symbolic interactionism as a means to consider notions of identity. Identity as viewed in the following section from a sociological perspective is then explored. This is followed by a brief review of Structuration Theory to provide a means of introducing notions of structure and agency, before introducing social identity as viewed from a social psychological perspective in the final section on identity theories.

2.2.1 Symbolic interactionism

Serpe & Stryker (2011) asserted that consideration of identity started with the Scottish Enlightenment of the eighteenth century when moral philosophers first suggested that human nature is a social state and that society is essentially a mirror, reflecting the way individuals interact, form social relationships and sympathise with each other. As early as 1890, James proposed a social self whose empirical source is the recognition accorded by others, allowing then for multiple selves; indeed as many selves as there are people or groups of people about whose opinions we care (Serpe & Stryker, 2011).

Cooley (1902) further developed these ideas, arguing that society is made up of individuals and that each individual is a product of society. Our self-concepts and identities are, as expounded in his looking-glass self-theory, a reflection of how others perceive us.

Leading to the emergence of social psychology, Mead (1934) introduced the concept of symbolic interactionism whereby how individuals interact with a group depends on them developing a sense of how they are viewed by the group. Symbols in this context are language, words, gestures, rules or roles that have a common meaning for a group. Blumer (1969), a colleague of Mead's, proposed exploration of social behaviour as a fruitful way of understanding events but since people construct their behaviour continuously, he believed that the aim of developing a general theory would be futile and prediction of behaviour impossible. Kuhn and McPartland (1954) meanwhile argued for theory-based generalisations. In particular they agreed that social structure is created, maintained and altered through symbolic interaction but asserted that this structure then acts as a constraint to future interaction and thus people adopt relatively stable roles linked to positions within the social structure. They then argued that because of these positions or roles, together with role expectations, there would be greater determinacy regarding self and behaviour.

The traditional symbolic interactionist perspective has several weaknesses limiting its wholesale adoption as a general theoretical framework for an examination of self. For example, Elliot (2007) claimed that Mead did not sufficiently recognise the significance of political domination and 'the complex ways in which processes of cultural exclusion work to harm and damage the development of the self' (p. 30). Furthermore, Serpe & Stryker (2011) claimed that Mead saw society as 'relatively undifferentiated' (p. 231) whereas sociological theorists recognise society as highly differentiated, leading to conflict within and between societies. Stryker & Burke (2000) argued that Blumer's position led to a view of self as 'undifferentiated, unorganised, unstable' and in so doing failed to accept that 'some possibilities are more probable than others' (p. 27), opening the door for an examination of behaviour as a reflection of identity. Likewise Serpe & Stryker (2011) claimed Mead saw self as 'singular', making it difficult to reconcile disparate roles (p. 231).

Symbolic interactionism provided the concepts and language for consideration of self-identity. In recent years, however, Kuhn and McPartland's (1954) conception of the self as composed of status, roles, expectations and personal attributes, with that conception's inevitable dynamism and pluralism, is now generally accepted by identity researchers.

2.2.2 Identity Theory

In social science, psychologists and sociologists broadly agree with the definition of identity as a person's conception and expression of their individuality or group affiliation (Woodward, 1997), with differences between essentialist identity, whereby individuals have a clear set of characteristics which are fixed (for example, ethnicity) (studies include those by Scheff, 1994; Nagel, 1994) and a non-essentialist aspect of identity which is 'contingent' and sees identity as emerging from a social group or category (Woodward, 1997).

For identity theorists, identity is considered to be 'parts of a self composed of the meanings that persons attach to the multiple roles they typically play' (Stryker & Burke, 2000, p. 284). Stryker (1980) claims to introduce an encompassing Identity Theory based on symbolic interaction, whereby i) behaviour is dependent on interaction with a categorised world and its behavioural expectations, ii) people have a shared understanding of these expectations i.e. we behave as expected, we expect others to as well, iii) these shared expectations and meanings form a guide for behaviour and further meanings develop from agency in social interactions. His approach to researching role choice behaviour is to start with a prototypical question of two hypothetical fathers: one father spends time with his children at the weekend, another spends time at the golf course (for example, Stryker, 2007). Although their role as fathers is the same, their behaviour is different. This leads to notions of identity commitment and salience with studies exploring how individuals resolve multiple identities (for examples see Serpe & Stryker, 2011, p. 234) and a *situational* identity which depends on the relative strength of self-categorisation in a situation, at a particular time (for example, Jenkins, 2004).

Exploring the internal dynamics within the self that lead to observable behaviour has led to studies exploring how workers' self-view can predict worker behaviour (for example, Burke, 1980; Burke & Reitzes, 1981). These studies led to the Theory of

Identity Control which introduced a so-called *cybernetic model* whereby individuals compare themselves with how they believe other people view them and a process of self-verification is used to keep these two views in balance. Identity reconstruction was found to occur where self-verification revealed a gap in views (for example, Riley& Burke, 1995).

Role identity proponents make explicit the belief that the core of an identity is the identification (or categorisation) of self as a role holder (for example, McCall & Simmons, 1978). Role theory posits that people behave in a predictable way based on the roles that they carry out and studies focus on role enactment and role performance. Everyday activity consists of the acting out of socially defined categories and each social role has a set of rights and responsibilities, of norms and behaviours (Heise, 2002). Hogg et al. (1995) argued that a limitation of identity theory research is that role-taking processes are not usually examined empirically and studies downplay context or situation. An exception to this is recent work into professional identity with performance within a role, enactment and identity salience all considered within the context of a workplace and organisational hierarchy.

McCall & Simmons (1978, cited in Stets & Burke, 2003) addressed the constraints of traditional role theory (with its expectation that everyone behaves in a particular way simply because they hold a role) by splitting role identity into the 'conventional' and the 'idiosyncratic' (p. 134). The conventional involves acting out role behaviours based on expectations. The idiosyncratic allows for the unique interpretations that individuals bring to a role, invoking Stryker's golf-playing father. This leads to a consideration of agency and structure which is introduced below.

2.2.3 Structuration Theory

Organisational roles exist within social structures and Giddens' Structuration Theory recognises the duality of agency and structure (Giddens, 1984). Giddens argued that neither agency nor structure should take precedence in any sociological study. Stones (2009) developed Structuration Theory further, believing that social science had two 'pernicious misconceptions' (p. 91): objectivism and subjectivism. Objectivism considers structures and, if agents are considered at all it is as a 'plaything' of the structure. On the other hand, subjectivism reduces the whole of social life to agents' interpretations, goals, interactions and desires. Stones (1985) recommended that

areas of study recognising duality of agency and structure should include: external structures which can be acknowledged or unacknowledged by the agent but which form the conditions for action; internal structures, including roles and skills (Jack & Kholeif, 2007, p. 208); what the agent does, namely the 'active, dynamic moment of structuration' (Stones, 1985, p. 86); and outcomes which may include a change in structure and/or the agent being 'facilitated or frustrated' (Jack & Kholeif, 2007, p. 215). Role behaviour, as a manifestation of identity, can not be fully explained without an understanding of the context of structure and agency, nor of identity commitment.

Structuration Theory has been linked with the second main theory of identity, social identity theory, in studies exploring the construction of professional identities – in particular through organisational structural change (for example, Broady-Preston, 2009; Hotho, 2008).

2.2.4 Social Identity Theory

Although agreeing to some extent with sociologists about the nature of identity, psychologists define identity more specifically as a 'cognitive construct of the self' and typically focus on a collection of personality traits (Korte, 2007, p. 168). Social psychology emerged as psychologists came to believe that individual personalities did not fully explain observed behaviour in groups and so the concept of the social self emerged to explain the differences between personal identity and social identity (i.e. the behaviour of an individual in a group) (for example, Abrams & Hogg, 1990; Turner & Onorato, 1999).

Tajfel first defined social identity as the 'individual's knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership' (Tajfel, 1972, cited in Hogg, 2001, p. 186). Tajfel & Turner (1975) found that members of a group worked together to achieve outcomes in competition with other groups, suggesting that intergroup relations be viewed as a process of competition for positive identity. Group membership was found to influence social identity based on group salience in a specific situation, while how an individual perceived self was dependent on the salient group and was been found to strongly influence behaviour (Kanfer, 1990, cited in Korte, 2007; Pratt 2000). In a further development, self-categorisation theory segments the social world into prototypical

outgroups and ingroups, where ingroups are social groups to which a person identifies (Turner 1985, Turner et al., 1987). In an organisational hierarchy, it is argued that a member of a low status group may seek to advance to a higher status group. If this is 'not possible or not desirable' an individual may resort to promoting self-esteem by amplifying the differences between groups (Korte, 2007, p. 171). In terms of professional identity, this phenomenon has been termed the 'professionalization project' by Larson (1979, p. 50). From the perspective of communities of practice, Lave and Wenger (1991) described the process of socialisation as being, in part, the movement from the periphery of a group towards its centre. In conclusion, the interaction between individual identity and group identity is one of the key insights of Social Identity Theory. The theory is applied as a means of understanding distinct behaviour and interrelations of groups. Professions and organisations may be considered to be groups with individuals characterising their interactions in terms of ingroup-outgroup behaviour so a study of professional identity is likely to encompass observing social identity as it is acted out in an organisation or within a professional group.

Studies have compared Identity Theory with Social Identity Theory to find that similarities included i) a socially constructed self as a dynamic construct that 'mediates the relationship between social structure or society and individual social behaviour' (Hogg et al., 1995, p. 262), and that ii) identities are internalised and used to define self, with both identity theorists and social identity theorists recognising self-categorisation in some form or another (Stets & Burke, 2000).The term 'salience' has been taken up by both: social identity theorists use the term to mean a social identity functioning to increase influence in one's group, while identity theorists understand it to be the probability that an identity will be activated in any particular situation (Stryker, 1980).

Hogg et al. (1995) argued that Social Identity Theory, in contrast to Identity Theory, has a rich tradition of empirical research offering insights into, for example, self-esteem, motivation and uncertainty reduction. Suggesting a pathway for researchers to consider both simultaneously, they further argued that the level of dynamism in conceptualisation of self differs: in Identity Theory changes are considered to be slower, reflecting role transitions; while in Social Identity Theory self is redefined as context changes, for example shifts in group membership or even shifts in group

activity. Stets & Burke (2000) overall found more to agree upon between the two theories and point to bodies of underpinning research, calling for a merger: to 'address agency and reflection, doing and being, behaviours and perceptions as central aspects of the self' (p. 234).

Alvesson (2010) attempted to summarise identity research positions, recognising that complexity and change in modern organisational life 'make identity a more open project' (p. 195). For this study, both theoretical positions have something to offer. The sociological perspective of role theory provides a means of questioning role-based identity and role transitions in this study of IT professionals observed through their working lives. However, a consideration of prototypicality, identification with a professional body and identification with team structures in industry also has implications for social identity including group affiliations amongst these participants.

2.3 The nature of professional identity

This section reviews published research into professional identity to gain insight into how the underpinning theories have been employed to reveal the way professional identities are constructed and adapted.

Professional identity extends previous notions of identity to professional life. The term is used in two ways in the literature: to refer to the identity of a member of a profession (for example, the medical or teaching professions) or to refer to the identity of someone who works in a professional job, as opposed to a trade or unskilled work. Different definitions of professional identity therefore exist. The first definition of professional identity is identification with a professional group and may be considered to be 'an individual's self-definition as a member of a profession' with interests (or inducements) found to lead to strong identification with a profession (Chreim et al., 2007, p. 1515). With the second definition, identity is self-definition in a professional role and identity construction is considered to be the process by which a combination of technical skills, capabilities, status and roles merge with work and life experiences into a 'coherent image of self' (Cascio & Gasker, 2001, p. 284). Much of the published research has considered identity within professions as having a strong sense of shared purpose (either through regulating bodies or through skills), for example doctors (Hotho, 2008), nurses (Cowin et al., 2013) and social workers (Cascio & Gasker, 2001). Studies have however also used the second definition and considered professional identity as based

around professional roles, including client-facing roles, leaders and scientists (for example, Ibarra,1999; Singh et al., 2006; Lamb & Davidson, 2005). There is also a body of literature on *workplace identity* which considers work groups, gender and class groups (for example, Rees & Monrouxe, 2010; Jaros, 2012; Marks & Thompson, 2010).

2.3.1 Constructing a professional identity

As identification with a professional group has not yet been widely observed within the IT sector, the literature of professional identity considered in this section includes studies related to both wide and narrow definitions of professional identity in order to leave the way open for recognition, or not, of a specific IT professional identity. Professional identity, as 'one of multiple social identities that an individual holds' (Hotho, 2008, p. 729), reiterates that a professional identity may co-exist with both an organisational identity and identification with work-based groups. For this study the net of relevant literature is cast wide in order to facilitate interpretation of the life narratives. Studies of professional identity have drawn variously from identity theory and social identity theory to explore self-identification within a working context; they do not always make explicit the underpinning theory.

Professional identity is a representation of oneself to others and, while being largely described in literature as being 'constructed', professional identity has also been described by research participants as being 'asserted', 'claimed' and 'secured' (Loseke & Cahill, 1986, cited in Costello, 2005, p. 31).   More recently educators are considering how courses might support professional identity 'formation' (for example, Daicoff, 2015; Smith et al., 2014; Wong & Trollope-Kumar, 2014).

In her textbook on professional schools, Costello (2005) cited Kleinman's work (1981) which categorised self as roles, identities, master identities and true self. Costello argued that a professional identity is a master identity and can be considered to be close to the core of self because of its 'social significance' (Costello, 2005, p. 31). Likewise, citing Burford (2012), Clouder et al. (2012) asserted that multiple selves exist simultaneously; they might be considered to be nested or hierarchical, with identity salience associated with context.

In considering agency, Alvesson (2010) claimed that identity construction, as considered at the extremes, is either i) entirely due to the individual constructing an

identity through 'effort and capacity' or ii) a more passive 'outcome of social forms and discursive forces' (Alvesson, 2010, p. 211). Costello (2005) argued that an individual's professional identity is not imposed upon them by their place in a structure. Likewise, Marks & Thompson (2010) concluded that the reflexive nature of identity work situates the actor as agent in the process of identity construction. However, what has not been explicitly explored is any impact the absence of a strong identification with a profession might have on location in a structure, the influence of discourse or the constraint to agency. Further to agency, Kumpusalo et al. (1994) found that agents 'try to find workplaces that correspond as much as possible to their personal and professional identities' (p. 70). Likewise, Marks & Thompson (2010) suggested 'we bring our individual sense of self to the process of role selection' while recognising the social constraints that constrict choice (p. 11).

Role identity was found to include 'the goals, values, beliefs, norms, interaction styles and time horizons that are typically associated with a role' (Ashforth, 2001, p. 6) and behaviour in the workplace has been found depend on how professionals view their work identity (Pratt et al., 2006). How individuals perceive the significance of their professional identity to their self-concept has been studied, for example, with nurse-midwives (Caza & Wilson, 2009) and women scientists (Settles, 2004). In a survey of Finnish doctors, Kumpusalo et al. (1994) proposed self-identification categories, such as healer, teacher, scientist and bureaucrat and found statistically significant differences in contextual self-categorisation (for example, doctors located in hospital or general practice), with identification as a bureaucrat a favoured categorisation. Identity salience has been found to act to moderate the relationship between ethical identity construction in the face of organisational imperatives (eg Gunz & Gunz, 2005; Aquino and Reed, 2002). Gunz & Gunz (2005) found, in a study of professionals employed in non-professional organisations, longevity within the organisation led to professional identity salience and suggested that longevity instils the confidence to acquire and assert a professional identity.

Where actors span professional boundaries, research has been designed to explore the tensions in professional identity construction, for example, in a study of doctors' professional identities, Hotho (2008) used social identity theory and structuration theory to explore the doctors' experiences of being involved in a change of practice, finding that professional identity was more prevalent than managerial identity. She

found that the medical profession was considered to be the salient ingroup and observed that participants drew on 'scripts of medical collegiality to describe, explain and legitimise' their engagement with the change (p. 732). Career stage has been found to influence ability to resolve conflict between dual roles (Kram et al., 2012). In a study of post-doctorates Kram et al. found more experienced practitioners having less difficulty resolving the conflict. Younger participants were caught in conflict between scholar (characterised as isolated, slow paced activity) and practitioner (fast paced, market driven), and struggled with organisational and self-verification. Participants in workplaces where they were asked primarily to be either scholars or practitioners – as opposed to both - felt less valued by their organisations, and experienced identity struggle when their role expectations conflicted with the other extreme position. In contrast, Clouder et al. (2012) found that workplace learning facilitators constructed co-existing professional identities (practitioner and teacher) and proposed the concept of 'perforate boundaries' to envisage structure and fluidity between identities (p. 464).

Identity construction as a dynamic process emerges with little recognition in the research of consolidated and secure identities. Identity conflict has been found when organisational and professional identities pull in opposite directions (Hotho, 2008; Clouder et al., 2012; Beech et al., 2008); however Gunz & Gunz (2007) found an idealised model of conflict to be an over-simplification and uncovered unexpected correlations between the length of time spent in a profession and organisational identity salience, and pondered whether someone new to a profession might lack the confidence to assert their professional identity. Identity conflict may occur between professional and family identities (for example, Halpern, 2005) or when identifying with different workgroups (for example, Pratt et al., 2012). Furthermore, identity complexity is said to arise when multiple identities are integrated rather than when one dominates (Caza & Wilson, 2009).

2.3.2 On transitions

Beyond studies of identity construction, the process of identity adaptation (or reconstruction) has also been researched extensively with the motivations for studies ranging from exploration to improving workplace relationships. Observations of identity as dynamic and contextual led to theories of identity adaptation, with the process of adaptation largely referred to as identity work. Nicholson's (1984) model of identity

transition proposed that two adjustments are made when transitioning i) personal development: which involves a change of self to fit role; and ii) role development, whereby the role is adapted to fit self. According to Ibarra & Petriglieri (2010, p. 14) the 'primary function of identity work is compliance with role requirements and their display rules', where display rules are the external projections of professional identity. They observed identity work as people made transitions to new roles and suggested that identity work was undertaken to 'convey images that conform to prototypic characteristics of those roles' (p. 14). Identity work has been defined as 'interpretive activity involved in reproducing and transforming self-identity' (Alvesson & Willmott, 2002, p. 627) and the search for stability in the face of insecurity and anxiety (Marks & Thompson, 2010). As IT practitioners in the participant group take on leadership responsibilities, the nature of transition into roles within IT and impact on identity should be explored within the context of introducing technological change to an organisation. Situating identity work within an organisation, Alvesson and Willmot (2002) posited an inter-relationship between identity regulation, self-identity and identity work, where identity regulation is defined as the discourse of organisational identity, self-identity is the narrative of self and identity work is prompted by identity regulation and, in turn, re-works self-identity. The literature specifically on transition is reviewed below.

2.3.2.1 Process Model of Identification

Ashforth (2001) claimed that the role transition process strongly affects the nature of subsequent role enactment and career trajectory. This work was followed by Ashforth et al. (2008), and refined further by Ashforth et al. (2014), who claimed identification is a dynamic process and proposed a model consisting of periods of emulation and affinity to characterise the 'turbulent, intense moments during which individuals are engaged in identity work' (p. 345), suggesting that these episodes are linked through narrative. Drawing upon the work of Pratt (2000) and Ibarra (1999) they envisaged episodes of identification leading to enactment then interpretation or *sensemaking*, before a new identity is constructed. Looking more widely at organisational identity, they rejected notions of an exclusively top down process whereby organisations influence individuals and notions of an entirely bottom up process whereby an individual uses only thoughts and feelings in identity reconstruction. Instead, through a consideration of role newcomers they introduced organisational sensebreaking,

sensegiving and social validation activity as influencing identity work through which an individual constructs an adapted identity narrative. Sensebreaking 'involves a fundamental questioning of who one is when one's sense of self is challenged . . . [creating] a meaning void that must be filled' (Pratt, 2000, p. 464) and might involve individuals questioning events and causing the individual to ask, 'Who am I? How do I fit in to this organisation?' (Schwarz, 2001, p. 7).   Conversely sensegiving is described as an activity designed to reduce gaps in identity knowledge and examples might include organisational team building activities, induction and Alvesson and Willmot's (2002) so-called identity regulation. Social validation captures work activity that consolidates self-identification. Figure 2.1 reproduces their Process Model of Identification (2014, p. 13).

Their model highlights the construction of identity as a process initiated by sensebreaking and sensemaking; in turn triggering enactment of a new identity; sensemaking or interpretative activity which appraises enacted identities; leading to an adapted identity narrative in a 'dynamic interplay' (2014, p. 14).
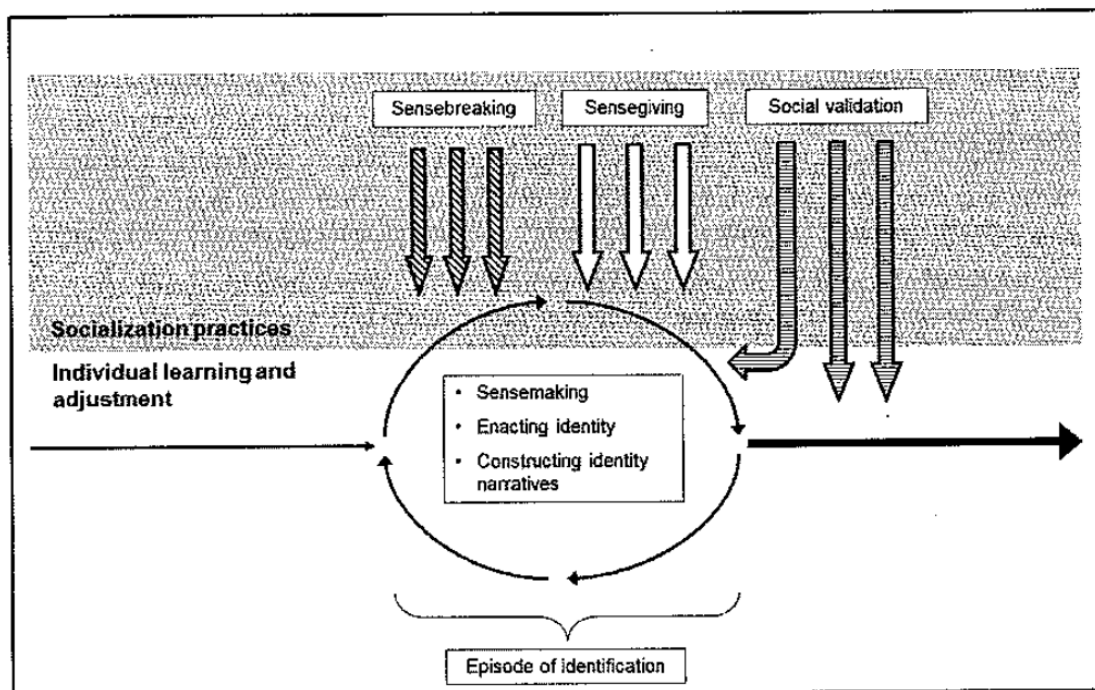
Figure 2.1: Episode of identification, reproduced with permission from Ashforth et al. (2014, p. 13)

In their 2008 paper, Ashforth et al. identified episodes of Emulation and Affinity to capture intense periods of identity work. Following Pratt's (1998) categorisation of

affinity as identity work influenced by sensemaking whereby individuals affirm their identity with an organisational identity, they introduce, by contrast, emulation as a process whereby individuals undertake identity work to become more congruent and this process may take several cycles of enactment and interpretation. The model for Episodes of Emulation and Affinity is reproduced in Figure 2.2.
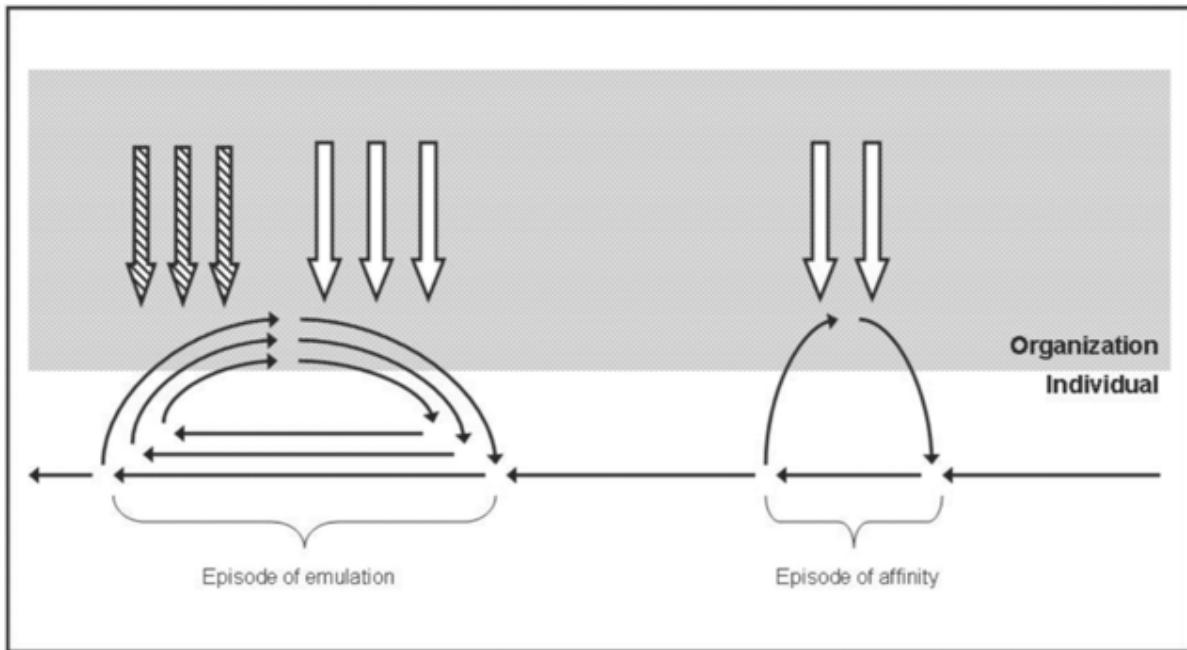
Figure 2.2 Episodes of Emulation and Affinity reproduced by permission from Ashforth et al. (2008)

[Note: the right to left arrow depicts the retrospection of sensemaking rather than elapsed time. The shaded arrows are sensebreaking, the unshaded arrows are sensegiving.]

Although the focus of their theory is construction and adaptation of organisational identity, it draws upon Ibarra's (1999) work which more broadly considered self-image as a professional and thus offers the possibility of generalisability to self-identification within a workplace; one component of which is organisational identity.

2.3.2.2 Conceptualising factors influencing identity work

Studies have found that organisational change impacts an individual's self-narrative (for example, Beech et al., 2008). In their paper they considered identity work to be constructing identity through interaction with others, and found an increase in identity work in change oriented situations. Recognising that change is now the norm in organisational life they proposed a way of conceptualising the likelihood of an individual undertaking identity work. Table 2.1 outlines their four sectors based on resource and risk (or opportunity). They suggested that if an individual has skills,

capabilities and status that can, together, be used to establish or maintain an identity position then they can be considered to have a high level of resource. High risk/opportunity are categorised together and only one is required. Risk in this context means that there is a risk associated with not undertaking identity work and could be regarded as a push factor in identity adaptation. On the other hand, opportunity is the perceived chance to achieve positive professional identity outcomes and could be considered a pull factor, for example a chance to gain status.

High resource	High resource
Low risk/opportunity	High risk/ opportunity
Low resource	Low resource
Low risk/opportunity	High risk/ opportunity

Table 2.1 Identity Work Conceptualisation

Beech et al. (2008) combined these to present the table above, suggesting that individuals in the top right quadrant have reason, ability and agency to undertake identity work, while those in the bottom left hand quadrant do not have the motivation/ opportunity or resources to undertake identity work. Returning to Ashforth et al.'s Process Model for Identification (2008, 2014), the change situation itself could be argued, in some cases, to introduce sensebreaking and risk into the organisation, while sensegiving and social validation could constitute a resource for identity adaptation.

Sensebreaking and sensemaking, as described, may have other triggers, for example, Khapova et al. (2007) studied 285 career change seekers, to find that an intention to transition to a new professional identity, was predicted from a positive attitude towards a new professional identity, perceived approval from peers and social groups (both are examples of opportunities) and how the career change seeker perceived their ability to control the transition (resources).

Studies in the theory of identity adaptation have considered the nature of identity work, pre-conditions for adaptation and the wider motivations which include self-interest, compliance and risk reduction. No over-arching theory or even consensus on an approach to study identity adaptation has emerged, with adaptation variously experienced through organisational change (structural) or through seeking career or role change (agency).

2.3.2.3 The process of construction and adaptation

IT professionals enter a skills-based profession but many will transition to leadership roles, with different roles likely to lead to new self-identification. The process of identity adaptation has been observed by researchers in various contexts, including career change, change in workplace roles, change in workplace activity and transitions from university to the workplace. Studies in identity work and adaptation are reviewed below to provide insights into the process of construction and adaptation.

To ascertain how students experienced their identities as emerging professionals, Costello (2005) conducted an ethnographic study observing students' individual agency in action. With similar themes to Ashforth et al. (2008), she categorised the following common stages: initial status, followed by initiation events leading to a transitional status, redefinition, leading to a new status. Similarly, Ibarra (1999) suggested that the adaptation process was initiated by situational influences (for example, job requirements and role-modelling relationships) and individual influences (such as self-conception, ability, motives and previous experiences). She found that prior to developing a new professional identity an inauthentic identity or 'act' was used until an individual identified role models, experimented with provisional selves and evaluated the effectiveness of these to finally develop an authentic adapted professional identity. As experienced by the individual, a new professional identity emerged through enacting a new professional identity.

It is now recognised that factors shaping professional identity can include personal and contextual factors that may shift over time (Kram et al., 2012) and that individuals have been observed to develop strategies for re-shaping or adapting their professional identities through influencing their organisations (Chreim et al., 2007). Beech & Johnson (2005) identified mayor & streetfighter metaphors in a study using narrative analysis of three protagonists to explore identities affected by organisational change. They found that strategic change in an organisation led to actors finding their identities 'disrupted' and the people around them 'rewriting' both themselves and the person with the disrupted identity in order to conform to the organisational narrative of change (p. 44). In a study of medical residents Pratt et al. (2006) found that work-identity integrity violations triggered identity work where violations were differences between who they were and what, as professionals, they did. Echoing Nicholson (1984), they

describe the nature of this identity work as identity customisation whereby identity was tailored to fit the work at hand.

A definition of professional identity to include skills, capabilities and status is suggestive of professional skills development and professional body membership contributing to the adaptation of a professional identity. Beijaard et al. (2000) found that professional identities were related to subject skills and perceived capability and they found that teachers' professional identities 'evolved' after qualifying (p. 751). Alvesson & Willmot (2002) suggested that corporate identity informs self-identity work, for example through induction, training and promotion.

A picture of transition as cyclical and iterative has emerged from the literature. Recent studies have focused on the resources employed to effect identity adaptation (for example, Beech et al., 2008 and Ibarra & Petriglieri, 2010). The research into reflexive, self-conscious processes identifiable in the cycles of adaptation is considered below, namely the use of role models, possible selves and development networks.

2.3.2.4 Construction and adaptation through role models

Role model theory is based on social learning theory which theorises that people observe the behaviour of others and, at times, seek to emulate this behaviour, in order to achieve similar outcomes (Bandura, 1977). Role models have been studied in relation to identity adaptation, most notably in Ibarra's (1999) study of identity adaptation where they were found to support identity adaptation through observation of traits and behaviours. Singh et al. (2006) invited a group of female managers to provide a network map of their role models and found that women prefer multiple, near role models to support identity construction and adaptation; and Smith et al. (2015) found that women used role models to support their identity positions. Gibson (2003) found that early career individuals used near role models, while in later stages role models were used to affirm individuals' self-concept. In the context of identity, role models are considered to influence identity adaptation through emulation (for example, Ashforth et al. 2008).

2.3.2.5 Construction and adaptation through possible selves

As first introduced by Goffman (1959) identity entails enactment and multiple identities co-exist (for example, Stryker (1980)). Recent studies have focused on the use of 'possible selves', for example Markus & Nurius (1986). Markus and Nurius introduce

the term to describe imaginings of who one might become, in other words, a new self-identification. In a study of students transitioning to their first teaching job, Ronfeldt & Grossman (2008) found that students negotiate how they see themselves as compared with the way their courses projected the image of the professional teacher. They explored how their students enacted 'alternative visions of professional identity' finding that new teachers need opportunities for enactment that help their professional identities become embedded (p. 54). The students found approximations of workplace practice useful in the academic setting and gained feedback from tutors supporting role verification. Ibarra's (1999) much cited paper on provisional selves studied the experiences of young professionals moving from internal to client-facing roles. Through their narratives, Ibarra suggested that a transition in their professional identity to a more senior role was achieved through a process of selecting a provisional self (one of many possible selves) then developing this self through observing role models, experimenting by enacting the provisional self in situations and, finally, seeking internal and external evaluation to gain validation of an adapted identity. She stated that the process of identity transition is under-explained and suggested an adaptation process, considering the provisional self as a temporary solution bridging the gap between an individual's current capacity and self-concept on the one hand and their understanding of the attitudes and behaviours expected of them in their new role on the other.

This proposed adaptation process was tested by Slay & Smith (2011) in a study of African American journalists but was rejected for stigmatised groups in favour of a process of 'redefinition' as a means constructing a professional identity while navigating multiple identities (p. 104). They suggested that the process they observed was of early influences and professional experiences leading to the development of a repertoire of possible selves. These selves are then redefined through consideration of profession, stigma and self. The tasks involved in redefinition include 'creating new professional rhetorics, seeing professional value in the stigmatized identity, and finding a balance between the two' (Slay & Smith, 2011, p. 100). Ibarra & Petriglieri (2010) introduce the notion of identity play, finding evidence that transitions create the conditions for the exploration of new provisional selves – play being undertaken away from the workplace with a view to 'test limits and possibilities' (p. 18). These studies raise the question of whether possible selves might affect transitions from IT practitioner to leader.

2.3.2.6 Construction and adaptation through developmental networks

Interaction with developmental networks has also been found to impact on identity adaptation. Dobrow et al. (2012) define developmental networks as those people and groups of people who take an active interest in an individual's career. Higgins & Kram (2001) categorised mentors as near/far and active/passive, acknowledging them as belonging to the developmental network. Wright & Wright (1987) found that acceptance and confirmation of abilities as initiated by a mentor led to an improved self-image suggesting that this was due to self-verification. Sweitzer (2009) explored the developmental networks doctoral students drew on to facilitate identity development. She found that 'students' personal and professional lives merge and can have an enormous impact on their professional identity development' (p. 30) and that faculty discourse, such as an emphasis of research over teaching activity, and external discourse, for example among family and friends, had the effect of either reinforcing or detracting from the overarching goals of a doctoral programme leading to attrition or frustration on the one hand or success and a faculty career on the other.

Dobrow and Higgins (2005) carried out a longitudinal study of MBA postgraduates to find that those with dense developmental networks (where members of the students' professional support groups were interconnected) had less clarity of professional identity, suggesting that this was due to a lack of valuable resources for experimenting with possible selves.

In a paper designed to categorise the construction of positive work identities, Dutton et al. (2010), proposed that 'positive identities can strengthen individuals through the cultivation of social resources' (p. 285), while Lamb and Davidson (2005) found that the use of new technology shaped the professional identities of scientists by 'sustaining and creating networking opportunities' (p. 12).

Through these studies a picture of identity adaptation as having pre-conditions surfaces. Pre-conditions such as the triggers of sensebreaking, sensegiving or the emergence of internal and external resources were identified. Role models and developmental networks, as examples of resources, have been shown to facilitate agency in professional identity adaptation.

2.3.3 Challenges for professional identity research

The nature and pace of change of roles in modern organisations contrasts with earlier generations' notions of jobs for life and consequent relatively stable identity positions. As such, construction and adaptation of professional identity have been topics of considerable recent interest resulting in a significant number of identity studies. These have been criticised for their approaches (by, for example, Alvesson, 2010; Marks & Thompson, 2010). Pratt & Foreman (2000a) found the theoretically diverse nature of identity study meant scholars from a range of disciplines can inform the topic; however drawing on a wide range of theoretical approaches revealed some frustration at the width of studies into professional identity and there has been a call for groupings of approaches from, among others, Alvesson, 2010; Birkett, 2011 and Marks & Thompson, 2010. Reservations expressed by Alvesson as 'the current popularity, and perhaps the overconsumption of self and identity in social science ...as well as the slippery notion of identity means that it is not easy to get an overview of the area(s)' (2010, p. 194). He recommends that researchers consider an *image* approach whereby he suggests existing research falls largely into the following categories:

i)   self-doubter - exploring uncertainty and insecurity;

i)   struggler - negotiating between conflicting demands of self-view and organisational pressure;

ii)   surfer - responding to the complexity of multiple discourses;

iii)   storyteller - creating meaning through personal narratives;

iv)   strategist - adapting professional identity to meet organisational drivers;

v)   stencil - whereby individuals are shaped through power regimes;

vi)   soldier - identifying with groups and group conflict.

Alvesson suggested that these images could be used by researchers to think about the questions that might be asked and what might be observed. Likewise, Pratt & Foreman (2000b) suggests identity theory suffers from 'identity confusion' (p. 142) and suggests identity researchers should be more explicit in their definitions and their theoretical perspective. Marks and Thompson (2010) talked about the 'overconsumption' of self and identity while suggesting it is at the same time 'under and mis-conceptualised' (p. 5).

This lack of agreement between approaches to the study of professional identity, or even agreement between theories, means there is no common approach to research methodology with studies drawing on different theories to develop research tools. For this study the narrative approach, adopting Alvesson's (2010) storyteller motif, has the potential to provide a rich data set for an exploration of individual self-perceptions as the IT sector itself, jobs in the sector and individuals' routes into the sector continue to evolve. A narrative approach would leave open the possibility of interpreting and analysing the data, recognising both identity theory and social identity theory.

In conclusion, professional identity is one of multiple identities, which predominantly relates to the workplace. An overview of the literature highlights an extensive body of work spanning over 50 years. To date, strong professions, such as medicine and law, have received more attention than others; however the future of strong professions is not assured as employment contracts change in the modern workplace (Fournier, 2000). What is less clear from existing research is how individuals construct their professional identities in less well-established professions or when transitioning from a relatively stable skills-based identity to a new role outwith their professional grouping. Two overarching themes have emerged: the degree of identity fluidity especially during a change of role or through organisational change, and the extent to which an individual constructs their identity narrative or acquires, through enactment, an identity as a result of organisational imperatives and institutional practice. With the IT sector in turmoil, both role changes and shifting organisational imperatives are likely have a significant impact on IT professionals.

2.4 A professional identity for the IT profession

Much recent research into professional identity explores the nature of the established professions such as the medical and legal professions. Because of the limited body of literature specifically examining the IT profession, a brief overview of IT as a profession and recent deliberations on the nature of professions is given in order to provide the context. Specific empirical research into professional identity in the IT sector, although limited, is then reviewed.

2.4.1 In consideration of an IT profession

Professionalism, whereby professionals present themselves in their field through specialist skills, is being widely debated across the board in the context of the global

consumer, access to information and managerialism (for example, Brock et al., 2007; Evans, 2008). Arguing that professional fields are built on a 'formalisation of knowledge' in ways to make it impenetrable to those without qualifications, theorists such as Fournier (2000, p. 75) are questioning whether aspects of public funding, boundary status (for example para-legals, para-medics and un-certificated teachers) and wider access to information are threatening our understanding of the professions. Neo-Weberians hold that professionalism is state-backed 'exclusionary social closure' (Saks, 2012, p. 4). IT is a relatively new sector with low barriers to entry (Donnelly et al., 2011). However recent high profile interventions by the UK government into the teaching of computing (for example, Scott 2012) suggest the IT profession may be able to move closer to the concept of a profession through periods of education and gaining experience. Reflecting on the status of a profession, studies have argued that an oversupply of graduates can alter a previously high-status profession (McKinlay& Stoeckle 1988, cited in Kumpusalo et al., 1994, p. 70). In the IT sector an over-supply was experienced after the dot.com boom and bust triggered by increased numbers studying computer science at university together with people entering the profession from non-computing courses or with a lesser qualification. Taken together with further recent pressures including jobs being offshored and the general economic downturn, the employment market is relatively volatile (Donnelly et al., 2011). The IT profession does not then necessarily share all the characteristics of a strong profession and so the next section explores professional identity specifically in the IT sector.

2.4.2 Professional identity in the IT profession

The IT profession, as reflected in British Computer Society membership categories and options for chartered status, covers work encompassing the need for a wide range of skills and education, indeed Darr and Warhurst (2008) argued that it is not possible to discuss knowledge workers as a single grouping, ranging as they do from creative, innovative development work, through to IT maintenance and technician level employment.

The most extensive study, undertaken by Brooks et al. (2010), involved a survey of 305 IT workers which used identity theory and social identity theory to explore how individuals identify with the IT profession and how aspects of the profession affect identification. They considered technical self-efficacy, similarity to others in the

profession, private and public regard, and finally the distinctiveness and uncertainty of the profession. They found that IT professionals identify with the profession based on i) an individual's perceived need for identification as an IT professional through self-verification, ii) individual perceptions of the profession based on their view of the worth of the group consisting of IT professionals, and finally iii) perceived similarity to prototypical members of the profession. Their research was designed to assist management in retaining staff (and recommended, for example, managers offering opportunities to work with new technologies and indulging a love of programming) rather than consideration of identity construction and adaptation. The authors also highlighted the need for ongoing technical skills development to enhance self-efficacy; however they do not examine what happens to identity when leadership activity is prioritised over technical work.

In a study of Scottish software workers drawing upon social identity theory, Marks and Scholarios' (2007) found that their participants perceived that others viewed them as 'elite professionals' (p. 114). Amongst the IT workers in their study they found a substantial degree of self-interest in a strong professional identity, enjoying an external image of a 'highly regarded occupation' (p. 115). Non-traditional entrants to the profession were observed to have greater organisational identity salience than those with a background of traditional computer science university education. The authors also found that while the IT profession is still considered highly-specialised, some aspects of wider skills are now required including client-facing and project management skills and their participants believed these to be part of their professional identity. Marks & Scholarios (2008) explored this further in a study of IT skills and employability where they found the sector was moving 'towards a more open access to higher skilled jobs based on a combination of both social and technical skills' (p. 120). Alvesson's (2001) earlier work into the identities of knowledge workers found the ambiguity of the work led to a requirement for identity to be secured and regulated to facilitate the building of relationships with clients. Regulation was defined by Alvesson as the establishment of standards 'for how employees should define themselves', describing this as a managerial responsibility (2001, p. 878). In this study Alvesson found that the more prestigious the organisation, the more likely an employee was to define themselves as belonging to it. In a study of class identity amongst software developers in Scotland, Marks & Baldry (2009) found that, while relatively affluent and

well-educated, 'the most popular self-location was the working class' (p. 61). They found that software professionals were mainly in a position, through economic necessity, of having to sell their labour. They cited Hyman et al. (2004) who found that software workers maintained a collective orientation to work, in spite of low levels of trade union membership. Bain et al. (2007) suggested these new communities of software workers embody aspects of identity and solidarity previously found in trade unions.

The wide ranging nature of the IT profession means that, among many other roles, programming, web design, IT project management and network administration are all considered under the umbrella term of IT professional jobs; however the salience of individuals' organisational and professional identities has been found to depend upon their route into the profession, the perceived worth of IT as an occupational group and the prestige afforded their employer organisation. Although identity construction has been researched to some extent, little has been published on role transitions and identity adaptation for IT practitioners.

2.5 Leadership identity

Van Wart (2012) considers leadership as being the capability to facilitate delivery of stakeholder and shareholder expectations and meet strategic objectives with consequent notions of followership (for example, Bennis, 1989). While leadership has been widely researched, less is understood about IT sector situated leadership and about the transition to a leadership role. To understand the nature of leadership identity in the IT sector, leadership theory is considered briefly, followed by a review of the literature on leadership identities and the characteristics of leadership roles in the IT sector.

2.5.1 Leadership theory

Theories of leadership originated with an emphasis on *great man* personality traits such as being decisive and self-confident (Stogdill, 1974), followed by behaviourist theories based on observation of behaviour rather than qualities, and suggestions that managers should lead through participation rather than coercion (McGregor, 1960). Recognising that no one leadership style is right for every situation, contingency and situational leadership theories emerged such as Fiedler's contingency model (1967)

whereby leadership styles are deemed to adapt to situations. Adair (1973) proposed an action-centred leadership model, breaking leadership activity into task, team and individual components with the leader flitting between these as required. Burns (1978) first introduced the term *transformational leadership,* and suggested that this style 'converts followers into leaders' (p. 4, cited in Kuhnert and Lewis, 1987). According to Bass and Aviolo (1994), there are five styles of transformational leadership: idealised behaviours, motivation of individuals through inspiration, intellectual stimulation, consideration of the individual and idealised attributes. Transactional leadership, by contrast, is considered to be preoccupied with politics and perks (Covey, 1992).

Komives et al. (2006) suggested that earlier models of leadership were suitable in an industrial and production-focussed economy but in today's knowledge-based society new leadership styles are necessary and these are likely to include 'collaboration, ethical action, moral purpose' (p. 593). Bolden et al. (2003) introduced notions of 'dispersed leadership' and suggested that 'individuals at all levels in the organisation and in all roles...can exert leadership influence over their colleagues and thus influence the overall leadership of the organisation' (p. 17). Recognition of leadership identities, at different levels of an organisation, is a significant factor for the design of this study where identity work towards consolidating a leadership identity may be underway but possibly, given the complexity and the evolving nature of leadership identity exploration, unrecognised by participants.

2.5.2 Leadership identities

The uncertainty facing a dynamic, evolving, and relatively newly established IT sector may have a bearing on how leadership identities are constructed with consequent challenges in delineating between management and leadership in self-narratives; managers may be leaders, leaders managers, therefore studies of both managerial and leadership identity are of interest and considered below.

Svenginsson & Alvesson (2003) suggested managers construct 'several more or less contradictory and often changing managerial identities (identity positions) rather than one stable, continuous and secure, manager identity' (p. 1165). Recognising that organisational discourse and ideology are just two possible sources of identity work and that the reflexive narrative of a life story has much to reveal about identity, they found the subject of their research, far from identifying herself with her role as

operational manager, finding more meaning in creativity and networking discourses. Similarly Hotho's (2008) study of the medical profession found that doctors associated with their professional identity rather than their managerial identity, in spite of organisational imperatives.

Managers have been found to engage in identity work through discourse of professionalism, expertise, work ethic and performance (Thomas & Linstead, 2002) where discourse acted as a resource providing self-verification and justification for their roles. They found managers presenting themselves as, for example, breadwinners considering a sacrifice of time spent with the family as consistent with managerial commitment. Although self-verifying as managers, participants had 'feelings of fragility' about their roles as middle managers, finding their situation less certain than in skills-based roles (p. 77).

Returning specifically to leadership roles, Komives et al. (2006) found that leadership identity develops through six stages: i) a growing awareness of leadership traits, for example through role models, ii) exploration – becoming more active in group situations, iii) 'leader identified' – here the leadership role is legitimised through title, iv) recognition that leadership is not concentrated in a single individual but distributed around the team, v) accepting responsibility for developing others, and, finally vi) at this stage the individual forms a leadership self-concept. In practice these are unlikely to be sequential, non-overlapping steps to a leadership identity.

Leadership behaviour and self-categorisation may be indicative of leadership identities and some recent studies have explored the social identity of leaders (for example, Hogg, 2001; Rast et al. 2012). Hogg (2001) reviewed SIT studies into leadership roles to conclude that, in cohesive groups, leadership is determined by prototypicality, whereby prototypical members have influence but are not necessarily active leaders. Instead it is *social attraction* that enables the leader to 'secure compliance' and ensure high status (p. 196). Extending these theories to consider how uncertainty impacts on leadership, Rast et al. (2012) found that uncertainty 'significantly elevated support for the non-prototypical leader' (p. 651).

DeRue and Ashford (2010) asserted that the construction of a leadership identity requires three building blocks: individual self-perception, recognition of the role of leader through reciprocity in terms of the role of followers and, finally, endorsement

through interactions within a shared context or situation (for example a more senior member of staff referring to an individual as leader). They suggested that the process of leadership identity construction involves *claiming* and *granting* whereby both leader and follower actions reinforce the leadership identity. Claiming refers to assertion of identity; either as leader or follower, while granting refers to actions a person might take to bestow a leader or follower identity onto someone. In an earlier paper, DeRue et al. (2009) suggested that being leader-like is valued within organisations and that individuals are motivated to reinforce their self-concept so they 'try on' leadership identities through claims made, for example, via narrative, behaviour and dress code (p. 11), while acknowledging that leadership identity is recognised as ambiguous and how individuals might exhibit leadership behaviour is not clear given the number of theories of leadership that exist.

What emerges from the literature reviewed is a complex picture of continuously developing leadership theories with leadership self-identification influenced by followers and group interactions. In this study leadership identity has the potential to be claimed through various and possibly ambiguous behaviours. Any research questions should therefore allow for individuals to define their understanding of leadership as situated within their organisations and look for associated observed behaviour and self-categorisation.

2.5.3 IT leadership identities

Studies of IT leadership have generally considered expectations of role holders rather than personal perspectives (for example, Westerman & Weill, 2004; Rockart, 1982 and Green, 2008).

Reviewing empirical research, Green (2008) recommends leaders of knowledge workers lead by example as evidence of their commitment and promote a 'caring attitude to followers' (p. 21). Guillaume et al. (2012) found that leadership styles such as Servant-Leaders, whereby the leader emerges through an initial desire to serve, fit with modern organisations that are increasingly globalised, reliant on part-time and fixed term contracts, with some outsourced activity. According to Guillaume et al. characteristics include listening skills, foresight and empathy. More generally, Beazley (2000) suggested that leadership in a situation of *hyper-change* ('rapid, unpredictable, unremitting change') may require more employees to take on leadership capability and

found leadership characterised as 'visionary, holistic, service-oriented and ethical' (p. 17). IT work involves coping with constant change: in work practices and in technology used to underpin business functions, with leadership capability identified as critical in the change process (Breivold et al., 2012). In the context of continual change, studies have shown that technical managers felt they had to keep their skills up to date, or at least sufficiently current to retain their credibility (Kunda, 2009; Smith et al., 2015; Karahanna and Watson, 2006).

The title of the Chief Information Officer (CIO) could be considered to be recognition of Komives et al.'s 'leader identified' (2006, p. 606). Karahanna and Watson (2006) identified six key roles for IT leaders (or CIOs): business strategist, integrator, relationship builder, architect, utility provider, information steward and educator. They found evidence of an expectation that the CIO should remain technically current, making the leap to business strategist challenging. Preston et al. (2008) explored the power of the CIO to find the level of decision-making authority to be dependent on the company leadership culture, the CIO's networks and whether the CIO perceives a need to build political partnerships.

To consider some of the preoccupations that individuals with IT leadership roles may experience, in a study of 37 CEOs, Lakshman (2007) found leaders using IT to focus more effectively on internal and external customers, highlighting the impact of the CIO role as an enabler of leadership success. As a result, there may be both status and risk associated with IT leadership roles, alongside a desire by IT leaders to remain current in terms of technical skills in order to continue to provide capability across their organisations. The IT sector's recent move towards outsourcing and away from in-house development teams (for example, Grimshaw & Miozzo, 2009) and the consequent impact on a leadership identity for IT professionals has not yet been explored. In their study of lawyers, Gunz & Gunz (2007, p. 858) found that a prevalent theme in the lives of legal professionals was 'vulnerability to their work being outsourced to private practitioners', leading their participants to commit to their professional, rather than organisational, identities. Hickson et al. (1971) developed strategic contingency theory, essentially a theory about intra-organisational power, predicting that individuals develop a sense of powerlessness and uncertainty when working in a 'substitutable' unit (p. 221). These studies provide insight into leading in an IT context.

The essence of an IT leadership identity has not been extensively researched from the individual's perspective; instead studies have generally focused on managerial intent to understand workplace behaviours. A significant gap, however, and worthy of specific exploration, is the extent to which a professional identity as a highly skilled worker conflicts with (or supports) a leadership identity and the nature of any identity work undertaken to transition from one to the other. Furthermore identity is likely to be impacted by business context, which in the IT sector is affected by globalisation, outsourcing and off-shoring. The research questions for this study should leave open the possibility of impact of organisational expectations of leadership and the contextual role of IT on the construction and adaptation of professional identity.

2.6 Conclusion and research questions

The literature on identity spans 70 years and has both depth of coverage and width across different subject disciplines. Identity theory and social identity theory arise from symbolic interactionism which recognises the reflexive nature of self and society. Identity theory explores our behaviour in specific roles and posits identity salience as the means by which we relate to each of the multiple identities that we hold. Social identity theory considers how we behave within social structures including groups. To answer critics of the breadth of theorising, there is some attempt to find convergences between identity theory and social identity theory and some recent attempts to clarify research parameters.

More recently there has been interest in how we construct a professional identity with studies coming from various professions such as the medical, legal and teaching professions. Research into identity construction, in the main, involved an examination of narratives of self or of empirically observed behaviour. These studies have drawn variously upon the underpinning theories, while not always making this explicit. Recent research has explored how IT workers experience professional and organisational identities; however it is clear from these limited studies that earlier research into professional identity in different professions, while providing useful research positions and methodologies, cannot fully explain the nature of identity construction and adaptation in the IT profession. Finally the literature on the IT profession, while limited in scope, has shown that the identity adaptation towards leadership identity commitment may suffer from ambiguity for two reasons, i) as the individual themselves

perceive their identity, with studies highlighting that software workers continue to gain self-esteem from their skills-based roles, even while moving into leadership roles; and ii) recognition of leadership identities through perceptions and directly observing behaviour which might not be straightforward to categorise.

To remain open to the IT profession, as perceived by this group of participants, sharing similarities, or not, with more established and widely studied professions, the following research questions arise for this study of experienced IT professionals:

- *How do IT professionals transitioning to leadership roles construct their professional identities?*

With the phrase "transitioning to leadership roles", the intention is to capture IT professionals with some management responsibility and organisational expectations of leadership and explore how they construct their professional identity. In this case, professional identity is taken to be the wider definition of identity as a professional rather than identification with a specific professional body or group. Focusing on leadership rather than management identity recognises the changing landscape of the IT sector whereby staff lead on new technology developments and, as a result, lead change within their organisations. Management of their own teams is an important factor in this; however, the location of IT within their organisations enables consideration of leader/ follower identities in a wider context. The term "transitioning" allows for the participants to be at different stages of this process, if the process itself can be identified.

For this study, identity adaptation should not be limited to the transition from education to work but should be considered as careers develop. Studies have explored the construction process and proposed theories for professional identity adaptation, with agents undertaking identity work to allow for new self-identifications to emerge.

The second research question, then, arises from the literature review as IT professionals progress through their careers:

- *Where identity work is undertaken, what factors lead to identity adaption?*

Studies have recognised the impact of role models, experimenting with possible selves and developmental networks, among other factors, associated with identity adaptation. There is limited empirical research for IT professionals and the study will explore whether these factors can be observed in the participants in this study, and whether other factors emerge.

Although the study will consider a specific group of participants, an exploration of transition from an IT identity to a leadership identity might provide further insight into considering leadership within a fluid profession with weaker boundaries than the professions which have previously been more extensively researched.

The existing literature on identity construction, the pre-conditions for identity work and the nature of adaptation will inform the design of this study. There is little published research specifically exploring professional identity construction and adaptation for IT professionals moving to leadership roles and these research questions frame the overarching principles for empirical exploration. Further empirical research would serve to broaden understanding and in particular explore how IT professionals construct and adapt their identities during a transition from a technical skills-based role towards leadership roles, with consideration given to the wider expectations on IT staff as identified by the existing literature. In turn, how the turmoil in the IT sector is currently being experienced by individuals could lead to a consideration of: perceived status of the profession; routes to and motivations behind entry to the profession; influence and status of both individuals and IT units within organisations; all of which can impact on the wider gaps and possible misunderstandings between universities, employers and the professional body.

Chapter 3: Methodology

3.1 Introduction

The aim of this chapter is to describe the research methodology of the study and explain how the approach specifically addresses the research questions. The process of identity construction and adaptation has been researched in different contexts, using various approaches, with no single dominant overarching theory or approach agreed upon. The following section attempts to categorise and compare theories with a view to identifying an appropriate approach for this study.

3.1.1 Towards a study of professional identity

Birkett (2011) gave an over-arching categorisation of identity transition research into three key streams outlined in columns one to three of Table 3.1. To extend Birkett's work for this study, column four presents a brief analysis of the effectiveness of adopting the approach for this study.

Theory	Description	Identity transition concept	Identity transition in this study
(i)Social identity theory	Personal attributes and classification of ourselves with our groups	A change in group membership or transition impacting on group membership	Reliant on observed behaviour or specific situation-based surveys. Pre-supposition that professional group exists. Differentiating groups could be problematic.
(ii)Narrative approaches	Reflexive life stories to create or consolidate an identity	Transition impacting on life story, for example identity threats leading to identity work	Some critics doubt the ability of participants to articulate a life narrative. Allows for interpretation based on both Identity Theory and Social Identity theory.
(iii)Discursive approaches	Cultural and organisation discourse in identity formation	Transition impacts on available discourse for identity formation	Participants drawn from a wide range of organisations. Incomplete picture.

Table 3.1 Identity Adaptation Theories extended from Birkett (2011)

Using these as candidate approaches for a study designed to explore self-identification of professionals with leadership roles working in IT, each is considered below.

i) Social identity theory proponents previously cited in this review include Ashforth (2001, 2008, 2014), Hogg (2001, 2006) and Tajfel (1972). Measures of professional identity include observed behaviour, self-esteem surveys, surveys on professional values and Lickert-type scales exploring self-perceptions. In a study of the nursing profession, Cowin et al. (2013) test five professional identity measures including the professional identity Lickert scale (as designed by Adams et al., 2006), clarity of professional identity as explored through factors such as caring, trust and professionalism (taken from Weis & Schank, 2009) and a 17 factor model designed to explore identity within marketing roles (designed by Bennett, 2010). Gunz & Gunz (2007) found that identity is revealed through decisions taken and they designed three vignettes for lawyers to reveal their decisions and associated them with either professional identity or organisational identity. However, differentiating multiple identities through group self-categorisation presents a challenge to employing social identity theory as a means of exploring professional identity;

ii) In narrative approaches research is exploratory in nature, involving life stories, role models and metaphors. Proponents of narrative approaches include McAdams (1993), Ibarra (1999) and Alvesson (2001, 2010). Some theorists suggest that narratives *are* identities and that people come to know who they are through the stories they tell about specific struggles at specific points in time (for example, Lieblich et al., 1998; McAdams, 1993). The salience of a specific identity has been found to depend on which narrative is told (Piore & Safford, 2006). Patton (2001) considers the narrative analytical approach to pose two questions: i) what does the story reveal about the person and their world? ii) how can this be interpreted to elicit an understanding to 'illuminate the life and culture that created it'? (p. 115). Many studies are characterised by in-depth interviews and life stories followed by thematic analysis (for example, Slay & Smith, 2010). However, in terms of a research approach, some critics doubt the possibility of crafting and maintaining a credible self-narrative; for example, Roberts (2005) claims that 'such self-absorption is repeatedly problematized by the objectifications of self by others' (Roberts, 2005, p. 637 cited in Alvesson, 2010);

iii) Finally, discursive approaches consider that the unitary self is 'displaced by discursively constructed, fluid and fragile selves' (Marks & Thompson, 2010, p. 3). Marks & Thompson admitted to some ambiguity in the term discourse and used the term in their paper as the concept of individuals and organisations being discursively constructed fields within which identities are 'shaped and regulated' and presented a sceptical account of a discursive approach (p. 3). Casey (1995) asserted that organisational discourse was a source of self-identity. Studies include those where organisational discourse was considered to render individuals passive, colluding with management to develop conforming identities, such as Du Gay (1995). However, Marks & Thompson (2010) criticised an approach based on discourse, as producing 'a partial and under-powered account' of identity construction appearing to assume that the self is a blank canvas on which anything can be painted (p. 7).

While useful in terms of providing loose characterisations, these three groupings are not entirely distinct. In a significant piece of work, Birkett (2011) brought the three streams together to find that 'identity is formed and reformed in times of transition through a dialectical process involving discursive resources, relating to the subject's context and the imminent transition, and the subject's narrative skills and their salient group membership' (2011, p. 194). Similarly Scholl & Cascone (2010) used narrative storytelling combined with career discourse to suggest a *co-construction* of professional identity amongst their student counsellors.

For this study, the exploratory nature of the narrative approach has the potential to reveal unselfconscious identity construction and adaptation amongst IT practitioners over the course of a working life. A narrative approach would not preclude observation of the impact of discourse and evidence of group identification influencing self-identity. Some IT professional group identification has emerged, for example Marks & Scholarios (2007); however not all IT practitioners in their study constructed professional identities. IT professionals identifying as a social group has not yet been established, leaving a study based on social identity theory uncertain. A narrative approach would not exclude the observation of identity construction through self-narrative or group identification. Discourse as it intersects with narratives can also be observed in this way. Discourse alone would be suited to a specific study, for example the effect of off-shoring discourse on the identity of IT professionals; however the aims

of this study are a wide exploration of identity construction and adaptation which allows for the effect of discourse without setting out with this as its main aim.

3.2 Research approach

In considering the overall aim of any study, a coherent research approach shapes the acquisition and interpretation of new knowledge. This section explains the research approach. Philosophy is the study of the nature of existence and research philosophy concerns itself with ontology and epistemology which, together with axiology and research methodology, form a paradigm, or a 'basic set of beliefs that guides action' (Lincoln & Guba, 2000, p. 17). Research philosophy in the social sciences and business subject disciplines has been through a period of significant and sustained debate, arguably from the enlightenment to post-modernist and social constructivist positions of recent times (Hughes & Sharrock, 1997). The underlying research philosophy for this study is first identified through a consideration of the ontological position for the study.

3.2.1 Ontology

Ontology considers the nature of existence and that which can be known (Benton & Craib, 2011). In social research an ontological position underlies, for example, consideration of whether social structures dictate behaviour or whether individuals are free agents who construct an understanding of their environments based on social interactions (Giddens, 1984). For a study of the nature of identity construction and adaptation it is reasonable to first question how social agents (in this case professional role holders) interact with organisational structures.

In essence, critical realism describes an ontological position that acknowledges an external world 'independent of, and often defying, our desires of it and attempts to understand and change it' (Benton & Craib, 2011, p. 121). Critical realism emerged from a re-examination of realism as a philosophical position which recognises the mind-independent existence of objects in the world and owes its early development to Roy Bhaskar (1975). In particular, for social science, this reconsideration led to a position whereby reality is socially situated but is not socially determined and an objective critique has the potential to motivate social change. In social science, Bhaskar (1975) claimed transcendental arguments start from some accepted experience and lead to a deduction of what must be true for that experience to have

occurred. Bhaskar identified three levels of reality which are considered in the social sciences to be: a *real* world of power and tendencies that social scientists seek to discover; an *actual* level consisting of sequences of events and actions that can be revealed and produced in an experiment; and finally an *empirical* level of observed events (Benton & Craib, 2011).

For this study the real layer of mechanisms and powers includes the role of IT within organisations and wider society. Organisations are open systems. Akroyd and Fleetwood (2000) asserted that the three domains of critical realism are not typically in phase so it is unlikely that a 'simple inspection' of the real domain will reveal a manifestation in the actual domain (p. 13). Questions on the nature of the participants' organisation and consideration of the way organisations view the IT function will be used to explore this domain. The events and actions are constituted of significant organisational changes such as the introduction of new technology or personal events such as role changes. Finally, the empirical layer is built from the observed experiences that emerge from the participants.

3.2.1.1   *Limitations of alternative research philosophies*

Critical realism competes with objectivism and subjectivism (for example social constructivism, post-structuralism or post modernism) as a research philosophy for social science research. Objectivism holds that it is possible to uncover immutable truths about social structures and social agents while social constructivism is based on the notion that all knowledge is constructed through human interactions with each other and the world: we construct our social structures individually and they do not exist independently of ourselves (Crotty, 2003).

An objectivist (or positivist) ontology could be used to research how social structures dictate behaviour with a view to predicting patterns of behaviour. For example a large scale survey might uncover the number of staff who hold professional body membership and the length of time taken to move into a leadership role, but would not be effective in exploring how that move was experienced. So, while objectivism could identify probabilistic causal links, it would not answer conclusively the underlying reasons.

As an alternative paradigm, post structuralism in social science is the belief that constant change has become the status quo and in ontological terms abandons any

attempt to found bases for knowledge (Benton & Craib, 2011). Foucault (1926-1984), one of the leading structuralists turned post-structuralists, suggested that individual subjects are formed through discourse and describes identity as the point where individual discourses come together (Benton & Craib, 2011). Foucault argued that social order relies less on external force and policing and more on internal disciplining of the individual, that is to say we make ourselves behave in a particular way. A post-structuralist approach to this study would recognise the dynamic nature of society which chimes with the so-called Information Age (Castells, 2011). However its main drawback would be the inability to draw any conclusions and specifically 'what [post structuralist approaches] do not and cannot do is grasp the deeper structural changes in society that produce these experiences' (Benton & Craib, 2011:175).

3.2.2 Epistemology

While ontology considers what can be known, epistemology is the process by which we come to create new knowledge. The epistemology underlying this study is based on current social science research principles of hermeneutic phenomenology as first expounded by Hiedegger (1927/1962). According to Heidegger, self-consciousness is a 'formation of historically lived experience' (Laverty, 2008, p. 24) and recognition that history and upbringing affect our ways of understanding our experiences and yet are not always made explicit or fully understood. Laverty (2008) points out that hermeneutic phenomenology is concerned with 'human experience as it is lived' (p. 24) and research illuminates seemingly trivial details, which we may take for granted, but that create meaning and promote understanding.

The study aimed to uncover how IT practitioners experienced their professional identities. A hermeneutic phenomenological epistemology considers that meanings are not directly given: instead meaning must be interpreted, for example through the language of storytelling (Ricoeur, 1981). The use of hermeneutic phenomenology enabled the exploration of participants' experiences while recognising further interpretation was 'based on researchers' theoretical and personal knowledge' (Ajjawi & Higgs, 2007, p. 616). The study involved treating the participants as individuals who have organised their own understanding of their professional identity and given it meaning. This study focused on understanding and interpreting the social actions of the participants and was exploratory in an attempt to understand, for this group, how they construct and adapt their identities over the course of a working life. As such there

are no claims for generalisability: instead the study considered the nature of their self-identification based on existing theories of identity.

3.2.3 Axiology

Axiology refers to the ethical context of the research and aims to make explicit assumptions of the values underpinning empirical qualitative research (Hiles, 2008). For this study, hearing the lived experiences of IT professionals provides the location of the value of the research. The aim of the study was based on gleaning perceptions from individuals, rather than an attempt, for example, to measure the individual's impact on business outcomes with a view to increasing business performance. In particular the IT sector, as a new industrial sector, and specifically the experiences of the workers as the sector continues to evolve are somewhat under-explored. IT practitioners, as evidenced through job adverts, are valued for their technical skills; however their experiences of leadership also shape their workplace self-identification and their reflexive selves. The study was designed to explore how identity construction and adaptation is experienced for this group. The value of the study is to understand, through the voices of the participants, the nature of IT work in Scotland as the IT sector plays a significant part in promoting economic growth. Studies of self-identity may be beneficial to both employer organisations and professional bodies in providing greater understanding of employees' experiences and has the potential to shape recruitment, induction and professional development provision to the benefit of all.

3.3 Returning to the research questions

Critical realism was selected as the underpinning research philosophy for this study, with the research questions framed to open up the possibility of explanation through a consideration of the real, actual and empirical layers as first expounded by Bhaskar (1975). In practice, according to Mingers & Willcocks (2005), critical realist researchers consider three domains, as follows:

causally operative structures or systems: causal laws or mechanisms, including powers and relations;

actual layer: domain of the events the causally operative structures generate and the actions arising from the events;

empirical layer: the final domain is the impact or influence of those events that are empirically observed, including lived experiences and perceptions.

The methodology should recognise both the research philosophy and the research questions. The research questions are repeated below, with an explanation of the approach to the design of the research study.

How do IT professionals transitioning to leadership roles construct their professional identities? Professional identity construction can be observed through hermeneutic phenomenological interpretation of narratives by means of a qualitative empirical study based on interviewing research participants to explore individual experiences in order to surface their professional identity construction. The events of a working life impacting self-identity include periods of study, new jobs and career development within roles. Identity narratives have the potential to shed insights into the actual and real layers of organisational structures and public discourse where it impacts on self-identification.

Where identity work is undertaken, what factors lead to identity adaptation? Through an identity narrative, professional identity construction and adaptation may be observed as participants move into the IT sector and experience transition through different roles, for example interactions with teams and described group behaviour. A consideration of structure and agency in the interpretation of the life narratives could surface the impact of causal mechanisms on identity adaptation. Furthermore, the narrative approach does not preclude an understanding of the impact of group membership. A consideration of organisational structures, the role of IT within an organisation, the global IT sector and role descriptions may reveal conditions that make the action of adaptation of identity recognisable.

3.3 Research Design

3.3.1 Sampling procedure

The research participants were drawn from the students and graduates of the MSc Strategic ICT Leadership programme run by the School of Computing at Edinburgh Napier University. The course is a work-based masters course, designed to enable computing professionals to upskill and gain leadership skills. As part of their studies, students are called upon to undertake a significant strategic work-based learning

project and so gain new experience of introducing change into their organisations. The course has been running with small cohorts on-campus since September 2012. All students were approached and 14 from 15 responded positively to taking part in the study. The interviews took place in private at the participants' workplaces. All workplaces were within 50 miles of the centre of Edinburgh and locations included Edinburgh, Glasgow and Fife.

The participants were working in a wide range of companies, having taken up IT sector roles at different stages and had varied responsibilities. All, however, were responsible for staff and IT infrastructure. Furthermore all were at a stage in their careers where either they themselves or their employers (or both) recognised the value of studying the Masters course.

3.3.2 Data collection and validation

The data was collected through interviewing, audio recording and transcribing the participants' life narratives as explored through a series of questions and prompts. Life narratives (or life histories) have been used to gather subjective personal narratives (Musson, 2004) and in this context were used to enable data collection along the length of a studying and working life while not excluding the interactions between both. Using a life history involves acknowledging that the data is dependent on the perspectives and memories of the participant and their ability to recollect events and experiences (Janesick, 2010, p. 14). In practice, it involved developing open ended and reflective questions. An initial meeting was arranged, with a view to find time for a follow up if the life narrative could not be captured in one session. The life narrative research instrument (Appendix A) consisted of a series of prompts; however these were used only to ensure the researcher could navigate through the life history. In conducting the interviews a free flowing discussion was encouraged. The prompts were designed to let participants express values, motivations and personal reflections from their first interest in IT through to their current role and were wide ranging to ensure coverage of the themes that emerged from the literature review. Each work role was considered as part of the life narrative. The following are representative questions:

Questions were designed to explore, in a story-based approach, role models and developmental networks. For example: "What do you think were the main influencers

on your early decisions?" and "In your new role, did you have a peer network or a professional network (for example an external British Computer Society group)?"

A series of questions associated with role adjustment and identity work included: "Can you tell me how you adjusted to your new role? Did you feel differently about yourself and your role in the organisation – and how did that come about? What factors contributed to a change in how you viewed yourself?"

Identity consolidation was explored: "Do you think you were well suited to the role? What parts of the role did you feel most confident about?"

Questions designed to observe identity conflict included: "Did you ever feel uncomfortable in your role? Do you remember what caused the discomfort?" and "Were there any tensions between your skills based work and leadership expectations?"

The questions were tested through a pilot study which involved conducting the first two interviews and analysing the data collected. Following the data analysis, participants were contacted with the initial findings and asked if they broadly agreed or not. All participants who replied agreed that the findings confirmed their experiences.

3.3.3 Internal validation

According to Malterud (2001), 'internal validity asks whether the study investigates what it is meant to' (p. 484). A pilot study to validate the life narrative questions was established to ensure that the life narrative questions and prompts elucidated the research questions. The pilot study was conducted on two participants and was designed to address internal validity of the study and the research instrument. The data was analysed, the initial themes were identified and codes developed for all instances of self-identification observed. The two interviews in the pilot study had elicited a significant amount of data that was task-focused. In particular, the question on role adjustment led to long descriptive passages detailing the technicalities of project work in the new role. The question on role adjustment was expanded on for the full study with a further prompt "what factors contributed to a change in how you viewed yourself?" to encourage a more personal, and less task-focused, response from the remaining participants. In hermeneutic phenomenology, awareness of the

role of the researcher in data collection is essential (for example, Giles, 2007; Ajjawi & Higgs, 2007) and an effort was made to step back, reflect and be open to the meanings of actual events described by the participants. The researcher was known to the participants which helped develop trust and transparency. As an IT insider the researcher had the advantage of knowing the jargon and had sector awareness. However the disadvantage of this can be that the researcher can ascribe their own meanings to terminology. Therefore, no assumptions about the technical nature of the work described were made, nor of the role of the IT function within the participants' organisations. Instead descriptions were drawn only from the participants whereby the level of complexity and the interactions with other members of their organisations provided the only context for analysis. In the contested understanding of leadership, participants were first asked to define their understanding of leadership so that interpretation of their life narratives was contextualised for the meaning they placed on leadership.

Each of the interviews in the pilot study had taken more than two hours. For the wider group of professionals, at that time both working and studying, it was felt that the questions needed to be more direct to ensure the interviews gained the best data in the time available. Subsequent interviews ranged from 42 minutes to 90 minutes and the pace of the interview was largely directed by the participant.

ExpressScribe was used to transcribe the audio recordings and overall the transcripts amounted to 156,000 words.

3.3.4 External validation

External validation for a qualitative study, also referred to as transferability, is considered largely to be a consideration of the contexts in which the results could be replicated (Malterud, 2001, p. 484). External validation was considered throughout the study by adopting a consistent and coherent critical realist approach, with both research methods and analysis designed to reflect this philosophical position. The design of the life narrative questions drew upon existing narrative studies and although the interviews allowed for conversations to drift away at times from the prompts, the interviews followed the same structure. Data collected was for some participants largely task-focused while some of the interviewees were more personal in their responses. Where permission was granted, an initial attempt was made to triangulate

the transcripts through an examination of the work-based learning reflective logs that the students had submitted as part of their course; however these were found to be closely based on a reflection of course learning and did not provide any further information for this study.

Life narratives must be recognised as the stories the participants want to tell and thus replication of results elsewhere may be problematic. It is the analysis of the data, in the context of existing literature together with a reflexive approach to data collection, that holds the explanatory power to tease out professional identity and identity adaptation. Indeed Silverman (2015) stated that in qualitative research the hypothesis can emerge from the analysis, rather than being expressed at the outset. The approach taken to data analysis is described below after an overview of the ethical considerations for the study.

3.3.5 Ethical considerations

In some contexts life histories are deliberately non anonymised accounts of personal narratives and data is often archived for alternative uses (Boschma et al., 2003). However in this study the participants' transcripts were anonymised as the life narrative technique was used to achieve the exploration of factors from all domains rather than to capture a specific historical event or tradition. The participants were known to the researcher through researcher involvement in course induction. The researcher, as a member of teaching staff, could be considered to be in a position of influence, particularly over the decision to participate, and this was discussed with the supervision team. To counter any sense of obligation, it was made clear in the initial email and follow up letter that participation in the study was entirely voluntary. In addition the aim of the study was explained and informed consent was sought from all research participants. Confidentiality was stressed, as was the fact that the study was part of a research project for a thesis rather than, for example, a study of the course outcomes or any reflection on their success on the course.

3.4 Analysis – a critical realist approach in context

The analysis was based on critical realist approaches with hermeneutic phenomenology adopted to understand the transcripts. Bhaskar (2013a) described alternative approaches for theoretical research based on description, retroduction, elimination, identification and correction of earlier findings (DREIC) while also offering

an approach for applied research consisting of resolution of an event into its components, theoretical re-description, retrodiction (an attempt to test a theory based on previous events) to possible antecedents and finally elimination of alternative causes (RRRE). Mingers (2014), based on Bhaskar's writings (2010, 2013), recommended resolution of complex phenomena into components, re-description in an explanatory way, retroduction, elimination of alternative competing explanations, identification of causally efficacious mechanisms and correction of earlier findings. This was applied by Bygstad & Munkvold (2011) in their research into socio-technical systems. They described six stages of critical realist analysis. The approach to the first three relate to a hermeneutic phenomenological approach to data analysis with the process adapted from Ajjawi & Higgs (2007).

3.4.1 Description of events

In this study the description takes the form of the participants' life narratives. The audio recordings were transcribed, constituting 'immersion' (Ajjawi & Higgs, 2007, p. 621). Chapter 4 details participant quotes.

3.4.2 Identification of key components

The transcripts of the participants' life narratives constituted the description and identification (also referred to as *resolution*). Understanding developed through reading and initial coding. The initial analysis of the data collected through interview was coded and clustered through an initial thematic analysis template (for thematic analysis see, for example, King, 2012) reflecting the research questions arising from the literature review. The pilot study data was analysed and discussed with both supervisors and course tutors. The interviews for the full study were scheduled once the pilot study was evaluated. Specific life narrative analytical approaches were considered, for example, using themes and motifs (Mello, 2002). The data was searched for patterns and connections to identify whether there were any additional emerging themes and to identify abstractions through grouping of themes (Ajjawi & Higgs, 2007). The key components, or themes, were coded and clustered. A single researcher coded all transcripts and the codes and specific excerpts were discussed by the team throughout the data collection and analysis phase.

3.4.2.1   *Themes*

Through thematic analysis, the themes emerging from the narratives formed three categories: those which constituted the construction of a workplace identity; those which related to personal identity construction as it intersected with work; and finally, those recognisable as forms of identity work and identity adaptation. In turn, each sub-theme was coded (Ajjawi & Higgs, 2007). Workplace identity was coded as: organisational identity (C1); identity as a skilled technical self (C2); leadership identity (C3); IT professional identity (C4). Throughout, the term "IT professional identity" specifically relates to identification with the IT profession in the sense of a recognisable profession with associated professional body, rather than identification as a professional (as opposed to a manual worker).

Using the life narrative approach some aspects of personal identity and values emerged through the participants' reflections of their working lives and were coded as three categories: personal values (C5); identity at the intersection of work and home life (C6); "good fortune" narratives (C7).

Identity work and identity adaptation were observed through, for example, role changes, times of organisational change and periods of training and education. Identity work themes based on the literature, for example, the use of role models, possible selves and development networks have been observed to influence identity adaptation elsewhere and were used as sub-codes for identity adaptation. New themes were identified through close examination of the transcripts to identify passages relating to self-identification. In general, identity was observed through the participants' descriptions of workplace events and interactions with work colleagues. The four additional themes emerged through the pilot study and were categorised as self-development, seeking help, status-seeking narratives and finally narratives of struggle and risk. Following the pilot study no new themes emerged. Self-development as providing a resource for identity consolidation and adaptation emerged and themes for which there were no explicit prompts in the life narrative interviews and which did not emerge explicitly from the literature were categorised, resulting in the following list for identity adaptation: role models (C8); possible selves (C9); developmental networks (C10); self-development (C11); seeking help (C12); seeking status/opportunity (C13); struggle/risk narratives (C14).

The interviews were free flowing and although the prompts iterated through each major role held by each participant the order in which excerpts were coded varied. An example of the process is given in Appendix B with annotated notes from the pilot study, participant 1 and participant 3.

Upon close examination of the life narratives, the themes as shown in Table 3.2 were identified. Those not explicitly mentioned in the professional identity construction and adaptation literature are italicised.

Workplace identity construction	C1: Organisational identity
	C2: Identification with a skilled technical self
	C3: Leadership identity
	C4: IT Professional identity
Non-work identity	*C5: Personal values*
	C6: Work impacting home
	C7: "Good fortune" narratives
Identity work	C8: Role models
	C9: Possible selves
	C10: Developmental networks
	C11: Self-development
	C12: Seeking help
	C13: Status-seeking narratives
	C14: Struggle/risk narratives

Table 3.2 Coding typography

The themes are used to provide structure for the findings in Chapter 4.

3.4.3 Theoretical re-description

Theoretical re-description (also known as abduction) considers the findings in the light of current theories (Danermark et al., 2002). The themes were critiqued through linking with the literature (Ajjawi & Higgs, 2007). This work is detailed in the discussion chapter, in particular in Chapter 5, section 5.2.

3.4.4 Retroduction – the identification of candidate models of mechanisms

The purpose of retroduction in critical realism is to take some unexplained phenomenon and propose hypothetical mechanisms that, *if they existed*, would generate or cause that which is to be explained. In effect, 'moving from experiences in the empirical domain to possible structures in the real domain' (Mingers, 2004, p. 95) for the purpose of explanation not generalisation. This phase of critical realist research is the search for what the 'world must be like' for the phenomena emerging from the theoretical re-description to be observed (Bhaskar, 2013, p. 122) and is detailed in Chapter 5, section 5.3.

3.4.5 Analysis of selected mechanisms

An analysis of selected mechanisms stage is designed to eliminate candidate models of mechanisms based on explanatory power. If two are equally adequate then it is possible to 'attach the same degree of belief to each, or suspend judgement' (Lawson, 2013, p. 159). This analysis is covered in Chapter 5, section 5.4.

3.4.6 Validation of explanatory power

The final step is to find the mechanism with the 'strongest explanatory power' (Bygstad & Munkvold, 2011, p. 7). This step is considered in Chapter 6.

3.5 Conclusion

The research methodology described in this chapter was designed to ensure that the study fully considered the overall aims of the thesis and formed a coherent thread through the research philosophy, the research questions, research method and analysis, while taking account of previously identified concerns about identity research. Internal and external validation, together with ethical considerations, were discussed in the context of a qualitative study using life narratives. The life narrative approach was identified as allowing for a wide ranging exploration of the research participants' experiences in order to provide insights into how they viewed themselves, predominantly in the workplace. The analysis of the data involved hermeneutical phenomenological interpretation using themes from the literature and emergent themes.

Chapter 4: Findings

4.1 Introduction

This chapter presents the voices of the participants through the transcripts of their working life narratives. These are clustered into themes (professional identity construction, personal identity and identity adaptation) to aid conception together with the participants' interpretation through their lived experiences. In critical realist terms the transcripts constituted the description of events, as they emerged through the life narratives. Events observed and described by participants included joining the IT profession, changing jobs, role changes, interactions with staff and managers and the introduction of new technology. The participants are first introduced through descriptions of their entry routes into IT. To enable the participant's voices to surface here all references to the literature are contained in the discussion in Chapter 5 which follows the same thematic pattern.

4.1.1 Moving into IT

At the time of interview all participants had significant responsibility for IT in their roles and all had some line management responsibility for technical staff. Participants were asked about how they moved into an IT role. This section captures their backgrounds and early experiences. To aid the reader a summary table of the participants' basic information is given in Appendix C.

Lindsay and Hazel had joined the IT profession as many organisations were computerising processes which had previously been done manually. Both had recognised in themselves an aptitude for technical problem solving which had led to seeking out computing courses and each had subsequently held many and varied roles in organisations where IT had a supporting or underpinning role. Each started in the profession after post-school education on a computing course. Lindsay started out in a business IT support function, while Hazel started out in a scientific laboratory.

Sean, Andrew, Adrian, James, Graham and Ross had all studied a subject other than computer science initially. They had moved early in their careers into computing largely through on the job training, with consolidation of technical skills gained through part-time study at university, college or attending vendor specific training courses. Sean applied for an entry level IT job after completing a college course in business,

having had an interest in computing through family business interests. For Graham, Andrew and Ross the transition had been facilitated by an interest in seeing things done differently within their organisations, while in finance or administrative roles. Both Ross and Graham's first IT roles were in a housing association and involved a migration from accountancy work. Andrew's first role was a move from administration in the defence sector at a time when administrative processes were being automated. Adrian moved from a highly specialised technical role to a less prestigious IT role to escape an unpleasant working environment and subsequently attended university on a day-release course. James retrained after a few false starts in the engineering sector he had joined directly from university.

Like the group above, John, Ian and Julie had moved into computing roles without a formal IT education. They moved across from a different business area through opportunities within their organisations. However none had been appointed on the basis of specific technical skills and had already had managerial experience before moving into computing. Each had study or work experience in a different professional area and moved when new IT roles opened up. John's first role was managing library and IT services in a further education college. Ian moved to IT through accountancy consultancy. Julie worked in social care and opportunities opened up when this sector was computerised.

Only three participants, Steven, Pete and Michael, had studied computing: Steven and Pete at college and Michael through a conversion postgraduate course at university. Each had studied within the past 10 years with the intention of pursuing a career in the sector. Each had been encouraged to move into computing either by family or friends through descriptions of the possibilities of good careers. Both Steven and Pete's first roles were within small construction businesses; Michael's first role was a support role for a large outsourcing business.

The group overall constituted a wealth of experience in IT. John, Hazel, Ian, Lindsay, Andrew and Adrian had had long and varied working lives spanning over 20 years. The remaining participants had each been working for over seven years. Eleven of the participants had spent their working lives entirely within Scotland. Ian, John and Adrian were originally from Scotland but had had periods of work in England or the USA.

At the time of the interviews, John and James worked in the education sector; Lindsay, Sean and Pete worked within the health sector; Hazel, Graham and Ross worked within the housing sector; Julie worked for a local authority in social care; Ian worked for a food and drink multi-national; and Steven worked for a Scottish-based privately owned property company. In each case the IT function was serving the needs of the organisation, providing essential access to IT infrastructure, systems and data that facilitated the business. Adrian, Michael and Andrew worked in large multinationals whose main focus was the production of software, hardware or telecommunications.

4.2 Identity construction

Identity construction was considered in the narratives at times when participants expressed self-identification with prototypical characteristics, identification with groups or with their organisation. Using the coding typography detailed in Table 3.2, evidence of identity construction in the transcripts is detailed below.

4.2.1 Organisational identity (C1)

In general a coherent and strong sense of organisational identity was observed in the participants' current roles. This was evidenced through consideration of organisation mission and strategy, and values related to organisational objectives. Examples included, from Sean: "[my role is] to improve efficiency or improve information systems." Graham mentioned: "I'll always find a way of helping and seeing what we can do - there's room for improvement for everything." Other examples included: "I got the chance to make things better" and "[I was] trying to progress the business and making sure we had the right products."

There was evidence of pride in getting things done and offering a good service. John had experienced extensive restructuring with departments created and disestablished within a few years. Of one department in particular he reflected: "we got an awful lot done in that department." For some this identification with the organisation meant a comparison with a technical role.

Sean: "I feel I'm more business minded rather than technical and I guess I have – I can look at the whole organisation."

For some the association with the organisation was related to finding the place of IT within the organisation. Lindsay: "I'm the one that sits centrally", referring to the organisational facilitation role played by her team and the IT function.

For some their organisational identity was referred to positively:

Michael: "It's sort of the enjoyable bit about it is driving, trying to drive, that change through the business and influence how the business operates – it's a very exciting role" but Michael also referred to his place within the organisation less positively*: "it's like trying to change the direction of an oil tanker."*

When acknowledging some compromises, Steven felt his role was to comply:

Steven: "If something has to be done, it gets done", so "paperwork - all that is a bit mundane, you know, but I deal with it and I can get on with it."

Within non-IT organisations, strong organisational identity was observed through values placed on the nature of the organisation, for example, putting non-IT staff on a "pedestal" and recognising the mission of the organisation: "we are all led by our service users" and "it's all about the outcomes for the service users" are representative observations. Julie, James, Hazel, Andrew and Lindsay all expressed work satisfaction based on problem solving for users. Julie observed: "I go back every year to work [with users] and that's what I think every manager should do", while Andrew recognised that: "there was also that desire…to keep users happy, improve the business, make things better." Andrew's job had changed and he observed: "I do sometimes wish I was back in a job where I was making a difference to the end user." Julie stated that she was "really loyal to what we do" and Lindsay mentioned that role choices were based on "wanting to make a difference."

Most participants placed value on searching for new technology that supported their organisation's goals, for example, searching for technological solutions to make working life more efficient. James expressed pride in what his technical know-how could deliver and Sean stated: "I like to use technology to try to implement systems to help people and help businesses or solve problems." However, the following are representative, from Ross: "It's not about technology for technology's sake – it's about what is it that's missing and how can this [technology] get what it is you need" and "my

strength I think was always in being able to translate complex technical terms and solutions into outcomes and results."

For many, their roles could be described as intra-professional. For example: Sean stated that he placed value in:

Sean: "being that sort of bridge between the business and business users in IT to develop systems or implement systems that would really benefit them."

Some placed their work in the wider organisational context, not just intent on the best technical solution but also consideration of users. Pete described splitting the role into technical and business focused aspects: "My skills were more focused on the business and that was where I was trying to go." While for Graham,

Graham: "You know I could still be the person that sits here and doesn't worry too much about business processes, doesn't worry too much about what other departments are doing – but I do."

There is evidence of pride in combining the roles. For example, Julie states

Julie: "I think from a technical world you'd get a techie and from the practitioner world you'll get a practitioner and I think I've got the two."

For Sean, the organisational imperative overrode his personal objectives as he moved from wanting to get a specific technology on his CV to thinking through how it could impact positively on the business and he "put a lot more emphasis on thinking it through and analysing it."

Participants drew attention to cultural aspects of their organisations, for example, on moving roles, Hazel felt she had to "calm down and readjust" to her new organisation's ways of working. Pete described using informal means to recruit staff: "knowing how things get done here."

Explaining a strong organisational culture, one participant described how a colleague could tell who had been trained by the company and who had not. Having been transferred in through a buyout, the participant himself did not feel he had a strong sense of cultural identity; however through successive job moves within the

organisation he had shown loyalty. Sean joined an American company at one stage in his career but did not fully embrace the new culture:

Sean: "I got into all the buzz words though I don't know that I necessarily fit in to that culture cos I've got a much more technical mindset."

Ross was pleased with the opportunities offered by his organisation in his role as IT manager: "the organisation is big enough to expose you to lots of new things but small enough that you can still get involved." Loyalty was expressed through sharing the values of the organisation and through examples where a contribution was recognised, for example a Christmas bonus distributed directly by the CEO, beer busts and stock options. There was further evidence of pride in being recognised: for example, Adrian noted: "I deliver… if they completely trust you then you're free to do what you need to do." Likewise, Pete showed pride in delivery and enjoyed recognition as a "golden boy."

However some experienced conflict in their organisational identity, in particular where there were high expectations of the IT function for which they were responsible. At times tensions in their organisational identity emerged. Some participants had sole responsibility for IT within a non-IT organisation and concern emerged from a lack of understanding of the IT function within the organisation. For example,

Graham: "I suppose that is one of my main concerns and I think I wanted to look at business continuity and disaster recovery because that's an element where we're most exposed."

All participants were in the position of having to make a case for significant IT investment with most participants mentioning some organisational suspicion of IT spend. In many cases after the investment had been secured there had been no attempt to evaluate or review the impact of the new technology. In four cases external contractors were brought in to develop a business case. Graham felt the weight of expectation on IT to make savings: "You're really having to look for savings, they're not just coming along." A lack of understanding was also observed: for example, Julie described the introduction of new technology for users as "driving me demented" when her introduction of mobile technology was misunderstood within the organisation as "playing with a phone" when it was improving an essential business function.

Many were concerned about their level of responsibility for the IT infrastructure as a source of potential organisational risk. For example, in terms of governance, Graham was anxious about system failure:

Graham: "I think sometimes we don't want to spend the money on something unless they see what the consequences are."

At times organisational imperatives for efficiency were at odds with the desire to offer a good service. Within the organisation IT had to compete with other business functions, for example,

Andrew: "I met a wee bit of resistance – I had to develop skills of saying why we were going to do something and how it'll make it easier…and putting the cases forward."

For others their status in the organisation was not fully recognised and frustration was expressed when others could not see the significance of the IT function. Hazel's comment is representative: "if you take IT out of the equation nothing else is gonna work." Andrew, working in a large IT multi-national expressed his concern:

Andrew: "I'm worried where IT's going and maybe part of that is being in a big organisation and it's getting more and more dispersed and it's getting more and more about money, it's become less and less about end-to-end which I think it should be."

Reporting lines could be problematic in constructing an organisational identity with participants reporting variously to finance, human resources and directly to the CEO. For Hazel, reporting to the CEO, there was so little understanding of the nature of the IT function that their "meetings turned into discussions about the family." Ross, reporting to the director of finance, stated: "he just wasn't particularly interested as long as things were going well."

In one role Sean was embedded in an office but reporting to a central IT function:

Sean: "it wasn't always clear who you were reporting to, what the priorities were" and *"there were directors coming from different areas - so it was quite difficult to understand exactly where you might fit in to the company's priorities. The IT function had people placed in various businesses so it was quite murky at times."*

Six participants (John, Ian, Pete, Michael, Adrian and James) had experienced high levels of organisational change and restructuring with their roles either changing significantly or disappearing and having to re-apply for new roles. Participants variously used the following to describe their working environments: "tense and demanding", "it's scary", "a struggle", "fight for resources" and "a 60 hour week."

Overall, a strong sense of organisational identity emerged from the life narratives and in particular a sense of serving end users. Identity conflict was observed when participants had sole responsibility for IT with little interest shown by line managers or when they did not feel recognised. Identity was also observed to be problematic when IT investment had to be justified and participants' organisational identity was challenged in this process.

4.2.2 Identification with a skilled technical self (C2)

The ways in which participants viewed their technical skills as part of their overarching professional identity differed broadly according to the routes into the IT profession identified above.

For both Lindsay and Hazel, who had entered the IT profession over 20 years ago, their aptitude was recognised at school and a strong skills-based identity was observed through value expressed regarding their own skills base and evidence of "struggle" with experiencing higher levels of skills in their teams as they had to spend more time on management. Both competence and enjoyment was expressed:

Hazel: "The technical side of things I've never had any issue with and I always really enjoyed taking something and making it work."

Lindsay: "absolutely loved [setting up a new computer system] –being in at the beginning - it was just so exciting."

Identity as an expert was observed and Lindsay explained that on more than one occasion, she had said to her colleagues "I told you so!" to reinforce that she had been right with a decision about the implementation of new technology. She also expressed pride at her skills being recognised and in having specific skills unique to the organisation: "I was the only person that could do it." Lindsay stated that her colleague described her work as "sprinkling fairy gold." Love of technology was observed: "new stuff would come out, you could play with it, you could try stuff out" and "the technical

stuff – I do get a buzz out of that", and finally: "I loved getting the computer to do what I wanted it to." Lindsay "wanted quick fixes" and several times mentioned a love of her work, particularly in relation to problem solving. She also "always knew I thought differently from other people."

Those who had studied computing more recently with a view to entering the IT profession, Steven, Pete and Michael, expressed their skills in terms of building up through successive roles and projects. Describing how he made the choice to study computing, Steven stated that "I just like computers, always liked computers" and that he had a "kind of analytical brain." Michael described an early role: "I could do it with my eyes closed." Considering applying for a better job, he told himself: "I can do this and this in this role so therefore I can do that role." When asked about adjusting to new roles, Michael described starting out:

Michael: "a small technical role that I suppose gave me experience….I've always worked from a task point of view; it's just about the task and refining it. I always find these things quite easy. I am technically savvy…. I'm viewed as the sort of subject expert in terms of how we run and maintain a network…. I was the techie guy and my boss said just do what you need to do."

This group also, however, expressed anxiety about their skills levels: "you can't know it all"; "I quite like to know it all – as much as I possibly can" and "I would rather sit and take time, work it all through and work it out myself than have [externals] have the knowledge and power." Pete mentioned that "we had all the information in our heads" but described this as a "lonely place" and when he thought he had moved into a new more business focused role described covering a team member's absence as "I had to go back to being the technical expert."

Sean, Andrew, Adrian, James, Graham and Ross were characterised by a conscious move into IT roles without an educational background in computing and their technical skills identity emerges from an interest in technology together with considerable efforts made in self-development. Sean stated that he had "a personal interest in computer technology" and "regretted not doing a formal qualification", while Ross: "I was quite captivated by [the computer] so that really inspired me to find out more about computing." Although job adverts asked for IT-related degrees, Sean observed that "[a formal qualification] wasn't as important as having potential and having

experience." Aware of the external perspective placing value on specific technical skills and his prospects if he wanted to change jobs, Sean said "I don't know if I'd want to move from a heavy technical role to being more hands off." Andrew had a difficult time in a new role when "that was where it hit me and the big change of knowing what I was doing to not knowing anything I was doing." To secure knowledge and capability, this group were flexible in terms of roles. Andrew stated: "I did everything – I did change management without knowing it….I did the cabling, did the routers." Participants acknowledged job satisfaction associated with technical work; for example "there's the toys just go and play", "I'd rather be fixing things than fixing people" and expressing pride in keeping the technology up and running or implementing technology that underpinned their organisations. This group expressed a desire to retain their technical skills:

James: "Now that I'm in a management role and a leadership role – is no reason why I can take my hands away from development – I need to keep my skills up, I need to keep learning new technologies…because that encourages my staff to do the same….I'm quite determined to keep my skills base high."

In terms of keeping skills up to date, Sean stated "I'm interested in areas we aren't working in yet. I guess that keeps my own knowledge up to date." As with the previous group, a sense of progress through roles was observed, for example, "I just worked my way up to become the expert in there." At times they downplayed their technical skills: it was "fairly basic stuff"; "you quickly pick up, you know, kind of skills"; "I was good at the job, I learnt it quickly"; "I think for me it was always about seeing the simplicity" and "within three months we developed and delivered [our new system]."

John, Ian and Julie were characterised by a less conscious move into computing and IT and there was evidence of less value being placed on technical skills.

Julie: "I kinda inherited that role. In fact we became the experts which was a bit scary…….we were chucked in at the deep end – and we swam (laughs)."

Not being a technical expert could be problematic and John admitted: "I know now I would have challenged some of the practices going on at the time. I didn't know any better." John did not feel the need for technical expertise and mentioned that where necessary he found out a bit about new technology but describing a role he held said:

"It wasn't very technical – in fact none of my posts have been technical, thank goodness." John also said "I don't come from a hard core IT background" and used phrases such as "it's not rocket science" and "people have this idea that it's some sort of incredibly complex subject. It's not. Sorry." An IT consultant appointed to support the technical work of the team and evaluate their IT infrastructure was "not telling us anything we didn't already know." For John, the lack of technical skills was played out carefully: "I didn't pretend I knew anything I didn't – there was no point in doing that." There was evidence of respect for the technical abilities of his team, however, for example "you guys are the experts." For Ian a level of technical ability was expected in a new role as expert consultant and an act was used "effectively pretending to be an expert finance consultant…we were making it up as we went along." He also said: "It's okay to not know everything."

All participants identified with a technical skills identity to some extent. The salience of their technical skills-based identity varied according to their careers in IT, for example, how they had moved into a career in IT and the roles they had held subsequently. The most significant factor was their route into IT and the level of technical skills self-development they had undertaken. The bigger the investment in skills development and the nature of their appointment, the more likely they were to self-identify as a technical expert and to want to retain their technical skills as they took on more management responsibility.

4.2.3 Leadership identity (C3)

Leadership identity surfaced, for example, through responsibility for IT functions, for introducing new technology and in the management of staff. Teams varied in size and were generally less than six people. However John, Andrew, James, Michael and Julie had full responsibility for departments of over 15 staff and one had responsibility for a small in-house team together with a large outsourced team.

Leadership identity was observed through value placed on honesty with respect to dealing with their teams, and recognition of the importance of external signals and acknowledgement of their position in a leadership role. John, introducing himself to a new team he was to lead, mentioned a softly, softly approach and talked of honesty and authenticity in his interactions. He also mentioned letting people get on and manage:

John: "If you have a team of people with a job to do, let them do it, help them, support them, understand what they're trying to do …but don't get too involved in the technicalities of it because that's what they're there to do."

Identity as nurturer, organiser and collaborator was observed. For Lindsay: "I have that one woman who nurtured me in the early days and I feel quite strongly that that's what we have to do with young folk"; Lindsay, again: "I'm an organiser so am quite happy organising the team" and "I've always got time for people." For John: "I prefer to make [decisions] having convinced people that's the way to go" while James: "I like to get people involved so quite a participative leader – I like to get people on board, show by example as well." Hazel was happy to be challenged: "I would always want people to question me." John agreed up to a point: "I like to bring the team along. I want them to feel…em…all part of the process. But when you need to be decisive and you tell someone just do that don't worry about why – I've decided the why – and that has to happen from time to time."

External recognition of leadership positions was important. John had been consolidated into a new leadership role: "there's things I can finally do now because I've got the authority to say - right this is what we're doing."

Pete adopted a style to suit a team member:

Pete: "I say, listen you're one of the best technical people I've ever met just go away and shine and when you need me I'm here and that's what she prefers."

Participants were task-focused in their leadership styles. Hazel set up a management board: "We've been busy looking at corporate objectives and pulling them together to see which could be a project in their own right." Others expressed discomfort at times, including:

Andrew: "I'd rather negotiate and debate and base things on fact rather than emotions."

Michael recognised that being task-focused was not always the most appropriate way:

Michael: "When I was building the team and growing it and making sure they had a function that was fit for purpose to support the business it was very much aggressive,

perfectionist type stuff that was driving the right outcome – people used to be scared of me."

Some conflict between leadership identity and skills-based identity was observed, for example:

Sean: "I think I was much more comfortable in my technical role because I knew that inside out…now I'm responsible for other people and the section and the budget of the section…I think I might struggle with some of those areas but there's no formal training."

For some there was recognition that management activity was taking up more time, for example:

Steven: "I want to find myself losing touch with day-to-day support, just cos I don't have the time – the management tasks that I have take up much, much more of my time."

There was acknowledgement that the skills required in a leadership role were different and transition was observed:

Ross: "It's a different skillset altogether anyway because you often find IT leaders they're not necessarily from IT backgrounds – a lot of them are accountants and things like that."

Julie: "I think I grew into being a manager. I think everything else, the development side, was always there – the managerial side had to be built on."

All participants had been promoted at some time within their own organisations and being viewed in a different light emerged as a resource for identity work. For one participant this was expressed as follows:

Ross: "…trying to manage my transition from the IT guy…I never noticed it at all up until I became a director and then it changes – changes overnight - and there's, you know, people look at you differently and there's the boss-watching thing – what will he do next and I think a lot of people were looking to see well will he just do the same job he was doing before but he's obviously landed on his feet cos he'll get more money for it so I was very keen that actually I have to manage my exit from IT."

The words used to express the transition were at times negative. Adrian stated apologetically: "I've delegated skills more in the past few years I must admit", Michael mentioned being "detached now from operations" while Ross talked of his life having been "taken over" by leadership.

There was some scepticism about leadership: "Every single individual in the organisation is a leader of sorts, whatever that means." Their experiences of leadership were mixed.

Ian: "There was strong leadership from the top – or very strong demands from the top – in terms of performance, commitment whatever but a complete lack of leadership."

Some had experienced leadership they had found poor, for example:

Pete: "If you did something wrong you got fired. Now to me that's not great leadership – it's not about inspiring people, it's not allowing someone to be creative to then make a mistake."

and,

Sean: "some [leaders] are just totally hands off and want as little to do with you as possible so that's probably what I've encountered over the years."

Some had observed what they described as poor leadership behaviour in the past including bad language, moodiness, shouting and disruption.

Leadership presented some challenges to participants. They talked about "struggling" with individuals, finding management "rewarding, sometimes frustrating", having to lead a "very, very difficult team." For some, leadership was a negative experience: Andrew said of his team: "I've let them down." Lindsay had encountered a difficult team to manage: "I don't like that side of it at all. I'd rather just get on and do" and, for Pete: "[my team] don't like when someone says can you go and change the printer cartridge – they think it's degrading for them…well I had to crawl under floors for days and days and fix cables." Andrew observed: "I'm working 16 hours a day so that's probably a fault on the part of my leadership that I don't delegate enough."

Commitment to a leadership identity was observed in all participants. Leadership capability was recognised by all participants and many had reflected on poor

leadership traits observed both in others and in themselves. Salience of their leadership identities depended on their context, for example their organisation's expectations of them as leaders and the amount of time spent away from technical work on management issues. Leadership identity was observed to be less salient than organisational identity and technical skills-based identity in all participants with the exception of Ian. Ian entered the IT sector through a background in accountancy, becoming a consultant and described having to 'act' as an expert, and subsequently finding management activity more comfortable.

4.2.4 IT Professional identity (C4)

Each participant was prompted to describe membership of professional bodies. There was no evidence of participants constructing an identity associated with the IT profession through interactions with the professional body, the British Computer Society. John had been active in a professional body before moving into an IT role and had said that joining the BCS would be the "logical thing to do" but was still thinking about it. Sean was a member but said "I really don't do much with it" and had "mixed feelings" about how useful his membership was. Adrian said "I've often thought of the British Computer Society…but I'm not sure I have the time to attend the meetings." Ross mentioned he "still flirts with the idea of the BCS but I can't see the value." The remaining participants were not members nor did they express any sense that this would have been valuable either to themselves or their organisations. Participants mentioned trade shows and trade conferences which they had found useful in terms of keeping their knowledge up to date.

None of the participants self-identified as a member of the IT profession. Given the low levels of membership of the BCS this was not an entirely surprising finding; however it does have implications for identity construction and adaptation for this participant group.

4.3 Influence of personal identity on professional identity construction

The life narrative method was designed to explore career and role transitions; however, where these impacted on personal identity, emergent themes were coded as personal values, work impacting home and good fortune narratives. Using the coding typography detailed in Table 3.2, evidence of personal identity observed in the transcripts is detailed below.

4.3.1 Identity expressed through personal values (C5)

The working life narrative research tool did not explicitly prompt the participants for their personal values however, where these surfaced in relation to their working lives, this section captures these insights.

Motivations to do a good job have been mentioned in relation to organisational identity but some of the motivations were related to personal values. For example, Hazel, referring to good outcomes for service users, said: "it's the bit about reminding myself why I do this job and what's the outcome." Many participants expressed examples of self-recognition of their work as a matter of pride and found value in doing a good job: "helping"; "make a difference to [users'] work"; "everything has just been a huge opportunity"; "I thrive on change and I like challenge."

Ross: "I'm just one of these people that really loves what I do and I think that the technology provided me with a platform to talk to people and make them happy and I think that it's a privilege and an opportunity."

Reflecting on her early career, Lindsay said: "Absolutely loved it and I'm lapping it all from being in at the beginning – it was just so exciting."

Participants were at times self-reflective, indeed self-critical, for example:

John: "I don't think everything I do is wonderful by any means but I tend to be quite critical of certain things that if I don't think I've done them right I'll examine why"

Michael: "Am I really like that? and you're looking in the mirror – that's pretty hard."

Participants described the way they behaved in the workplace. For example, John: "I'm quite relaxed about most things….I don't have to have a screaming fit if something is not right." Participants recognised that being pro-active was beneficial in moving into new areas, for example, Andrew described himself making his way in a role: "I was a bit more dynamic"; and Michael: "I was quite enthusiastic there …and got myself involved in anything I could."

On occasions the behaviour is described as negative, but necessary. Describing making a case for a new member of staff Lindsay admitted "I keep nagging" while James spoke to his line manager "to make him listen to my viewpoint until he got sick of me."

Conflict between what participants valued and how they had to behave at work was observed. For example, being placed in a situation of chronic under-investment John, on having to present the corporate restructuring message to his staff, said "I wasn't the bad guy." Andrew, working for an outsourcing company, observed that "it can turn from a friendly conversation to – remember, I'm the client here." Lindsay made it clear that she had been uncomfortable at the high daily rate she was being charged out at by her company.

Self-narratives as reliable and hard workers were observed: "I can be relied upon"; "my boss was happy with the way I worked and happy to support me" and "I'm respected within the organisation." Hard worker narratives included working long hours either to fix a problem or to work with colleagues in different time zones.

Facing new technology, some participants expressed concern, for example,

Steven: "I have a problem with failure. I think that is my issue..em .. mentally I think sometimes perhaps if it's faced up or something like that the element of failure I don't like not being able to do things, I'm afraid. And it affects, I suppose it affects in a negative way, you know because it then makes you a little bit reticent about taking on challenge."

Steven also mentioned that he didn't see himself as "overly confident at times" and described himself as having "a bit of trepidation – a bit of fear about [new projects]." Other participants mentioned being "anxious"; "courageous, not confident"; "not a high flier." Andrew admitted: "I made myself ill at times" with worrying about not knowing the job, and James expressed concern that "people have expectations."

Pete mentioned his preference: "If I'm being 100% honest the minute I leave the door I want to stop thinking about IT." However he acknowledged that this was not always possible.

Overall, participants expressed their self-recognition with different narratives and self-reflection, including variously dynamism, forcefulness, making a difference, hard-work and anxiety.

4.3.2 Home impacting work - identity as a family member (C6)

There were no specific prompts about identity as a family member and the following observations emerged from some participants including each of the females. However over half of the participants did not mention this aspect of their identity. For Lindsay, Hazel, Steven and Pete their initial choice of a career in computing and IT had been influenced by a family member or partner. One participant described dropping out of university because "my dad got really ill and I ended up coming home." Another acknowledged that during a difficult period at work his wife had "got me through it." Self-identification as the main breadwinner was revealed by one when he discussed at home a new job opportunity with an increased salary.

Women mentioned identity as mothers, for example, making a decision about moving from a demanding full-time position to a part-time job because of young children:

Hazel: "I think in the last 10 years everything has to be based around the family – I've never wanted to let go of my career cos I've worked hard to get where I am. But I took that big, big step back. I made that conscious decision that the kids are only young once."

Lindsay had stayed at home for 8 years and to rebuild her technical skills she taught herself how to use a PC at home and stated: "I don't think I appreciated how much it would change in the 8 years when I came off [work] with the kids." Julie had a different experience:

Julie: "I was lucky and fortunate enough to have that home environment where I didn't have to worry about my kids going to school, didn't have to worry about homework being done…my husband was just not career orientated so I was fortunate enough to have that."

Ian and his wife had decided he would take some time off:

Ian: "the plan was that I would take some time off and spend some time at home with the kids….suddenly I was doing the same job [as before] – of course by this time the kids had got fed up with me being at home."

Four participants mentioned that flexible working was helpful for family life, for example, dropping children off in the morning. Andrew mentioned accepting a job to reduce travel time to help out more at home.

Describing bringing home life concerns to work, Lindsay said: "I leave my stuff sitting at the front door and feel really quite strongly about that" while Julie expressed a counter view: "Everybody has a personal life and it doesn't matter who you are your personal life will impact on your work life."

Identity as a family member at times impacted on workplace identity. Unprompted, family life and its impact at different stages in their careers was mentioned by all three female participants and four of the male participants.

4.3.3 Identity expressed through "good fortune" narratives (C7)

A new theme emerged from four participants who mentioned good fortune in career achievement. For John, there was evidence of modesty, for example, as he describes success in his application for a new role as having been in the "right place, right time." John also said: "There's no way I could get an equivalent job outside this organisation – I wouldn't even feel comfortable applying for a job like this." Three other participants mention good fortune rather than skill and effort, for example, Pete: "I was lucky enough to get a job" and Lindsay, looking back over a successful career to date, said "I've been quite lucky I think." Unprompted Andrew, Julie, Ian and Ross also cite luck as helping them with their careers. Overall half the participants expressed good fortune narratives.

4.4 Identity Adaptation

In the literature identity work is agreed to be the process by which individuals invest in an adapted identity through various interactions and development. The main themes from the literature are the use of role models; possible selves; developmental networks and self-development, for example education and training. Additional themes identified through the transcripts were coded as seeking help; seeking status/opportunity and struggle/risk narratives. Based on the coding detailed in Table 3.2, identity adaptation themes are explored below.

4.4.1 Role models (C8)

John and Lindsay mentioned positive role models from within their spheres of work. For Lindsay an early role model left a lasting impression about how to be a good leader within the IT profession. The behaviour exhibited by the role model included nurturing staff and battling for what they believed should be done. A role model exhibiting good leadership behaviour was mentioned by John as "doing what good leaders should do." This role model had a good understanding of IT and the importance of investing in IT infrastructure. Pete, while not explicitly using the term role model, indicated respect for his boss being "strong" and liked the "way he defends his staff." He also mentioned a member of staff in a different business unit who "seems to have a good way of coming across at meetings – she never seems to lose her cool."

In each case the role models were respected more for their leadership behaviours than their technical knowledge. No technical role models were mentioned.

4.4.2 Possible selves (C9)

Through their life narratives the participants did not use the terminology of experimenting with possible or provisional selves; however, implicitly seven participants mentioned situations where they had acted to convey a confidence that they did not feel. Some acknowledged the difference between how they wanted to portray themselves and how they felt about themselves. The enactment situations varied, including enacting a more confident version of themselves and imagining a future self.

When preparing for an important meeting, Hazel spoke to herself when she was anxious ahead of the event,

Hazel: "I have a good talk to myself. I just say, 'Yes you can. Just get on with it. Course you can'."

For Ian, appointed to be a consultant: "As consultant in a new job: I had to appear to know what I was doing." Michael said it was important for him to feel that staff had confidence in him.

Q: How would you sum up your leadership style?

Michael: Em courageous but not confident so I'll put myself in a situation where I don't feel comfortable so then I lose confidence but I'll go and do it if you know what I mean. It's just a step forward and try and lead – I've even had feedback from my own line manager who says it's refreshing to see that you put yourself in that situation but once you're there you start going well is everybody expecting me to do stuff and that's when you lose confidence then it kind of impacts so a key focus of my development is about how do I get the confidence built up so I'm courageous and confident in what I'm doing cos certainly the environment that I work in em it's a hard audience.

Enactment was observed when participants were thinking ahead, imagining a self in the future. Describing a wider role that she thinks would be good for her organisation Lindsay rehearsed what she could bring to a new role: "I'm now the IT specialist for that project….so if I can manoeuvre a post (laughs) this is my own wee personal agenda." Pete also pictured himself in a new role: "I've got a bit of talent when it comes to out-of-the-box thinking…that's where I see my future." Imagining a possible self under a different manager, John applied for a role because he "didn't want a loose cannon to be my boss."

Enactment was also observed when adjusting to new roles or making adjustments in existing roles.

John: "I could go along to meetings and not feel like I was entirely in the wrong place" and "you have to appear to be interested, say the right words and you get on."

Graham described using new vocabulary in emails as a way of trying on a new identity following the course and acknowledged the positive impact this had had in the way he was now viewed by his CEO.

Ross had just been promoted to an executive role and felt that he had to act differently: "People expect the same person in the role – that's my concern now."

Authenticity was also observed and as a counter to trying on a new possible self that might make claims of technical competence: John, introducing himself to his new team, acknowledged to them: "I would never pretend to have that level [of technical expertise]."

Enacting or imagining a different possible self was observed implicitly among seven of the participants. Motivations for this activity included exuding a confidence they did not feel, predicting future roles and consolidating authority.

4.4.3 Developmental networks (C10)

Participants were asked about networking activity in wide terms, to include peer and professional networks. Responses which related to networks and interactions recognisably supporting career development included peer support groups, technical support groups and wider networks which had led to new job opportunities.

Networking presented an opportunity to gain expertise. For Graham, a "group of about four IT managers within the sector" was established and "from those meetings you can gain knowledge from various people and stay away from products as well – it's great to network." He mentioned that while it no longer meets frequently, it has now, as its members have progressed within their organisations, focused on more strategic business development discussions. For John, a network of managers at the same level formed "a strong managerial team" creating a "supportive culture and giving confidence to know your peers are behind you." Hazel acknowledged the importance, as a sole IT employee, of staying in touch with ex-colleagues, as a means of consolidating her thinking:

Hazel: "It's certainly when you're in a single post...you could get some response to what you were thinking about [from your contacts]."

For some participants there was value in interactions within their organisations. For example, John found that networking involved: "learning from other people" which "from a career perspective, was really, really good."

Developmental networks were also used to consolidate technical expertise and were frequently based around specific new products and technologies. Networks were used to mitigate against the risk of introducing new technology into organisations, for example, to hear about how new technology had been adopted elsewhere. Many participants mentioned networks that were formed around a specific technical product or around their third party support providers, for example,

Steven: "I get to chat with them about things, talk over ideas…..you realise you're not the only one out there who's having that problem so I found that quite useful."

Some relied on online forums: "I get plenty of email shots – keep up to date" and mentioned commonly used user groups and product support websites.

Networking for career development was observed for all three female participants. Each had drawn upon their social and professional networks to move into new roles. Networking, both social and work-based, had been significant in creating career opportunities for Lindsay and she mentioned getting jobs through people she knew including family, friends and neighbours. She acknowledged that there was no altruism in their approaches by stating that if she had not been any good, she wouldn't have been recommended. In her latest role, the section head told her: "I'll create a job for you in my department and so that was it." These referrals were observed to have the effect of consolidating her identity as a technical expert. Likewise, Hazel experienced a successful job application through her developmental network: "because the people I was asking for references they all knew each other so it was very easy for me [to get the job]."

Three participants mentioned being mentored by someone in a leadership position and Julie also recognised the positive effect a network had had in terms of supporting her in new roles.

Julie: "being the first female in their world thankfully they took me under their wing."

Two of the male participants, Ian and Steven, had also been in a position to apply for a role through referral from their business contacts.

Developmental networks were recognised as facilitating self-development in leadership roles, influencing decisions related to the introduction of new technology and supporting career development.

4.4.4 Self-development – building resources (C11)

Skills and capabilities form part of the coherent image of self as a professional. As a result self-development activity has the ability to affect professional identity. Self-development as observed through the life narratives included extensive technical training, leadership courses and a considerable and sustained quantity of self-directed study.

None of the participants had studied computer science as a full-time undergraduate. Beyond that position, skills and experience differed widely amongst the group. Prior to the Masters course, John, Ian, James and Andrew had no formal qualification in computing, although John, Ian and James had degrees in different subjects. Hazel and Sean had degrees in computing gained part time while working. Hazel studied her degree with the Open University, and stated the advantage was "I was able to build up all my experience and do my studying at the same time." The remaining eight participants had higher national awards and one held a conversion Masters award.

A picture of the self as learning constantly emerged. Most of the self-development mentioned related to informal "on the job training" including accessing textbooks, online material and reading user manuals. This type of activity, sustained over their careers, was mentioned by eleven participants. Phrases included: "on the job training"; "you learnt on the job"; "taught myself"; "I'm still learning, forever learning"; "a lot of learning on the job" and "lots of reading." Adrian sums it up: "You can't stop learning in any role otherwise you're going to miss something."

For most, there were opportunities to attend technical training courses and these were used extensively to upskill in the latest technology. For Steven, not making a case for training was a source of regret: "I kick myself about it a little bit now." James completed a vendor specific course while unemployed, leading to his new career, and went on to finish the course on his own.

All participants were studying the MSc in Strategic ICT Leadership and, while there was no specific prompt, the course came up in a number of ways. For John, it was to gain a qualification in his new profession: "Partly because of that course I'm confident in my ability to be Head of IT." For Lindsay, the Masters was a chance to consolidate an established professional identity as an expert and leader: "That was the best thing about [the course] – it has ratified the knowledge I had." For Steven the aims of the course "just fitted perfectly with what I needed to do. Or what I wanted to do." For Michael, being passed over for a promotion was "the catalyst." The Masters award was seen by some as a means to an end:

Pete: "Personally feel I'm stuck and how do I get to that next level – hopefully the Masters will help… if I stay in the same job for the rest of my life at least I'll know that I pushed myself to the limit."

And for Sean it was about the possibility of exploring new role opportunities.

Sean: "it was more a box ticking exercise to say that I've got that qualification."

Use of management development opportunities to consolidate identity and gain confidence was observed.

Sustained and extensive self-development was observed in all participants with participants taking advantage of technical training events, reading manuals, interacting with on-line forums, accessing textbooks, management training and periods of part-time study. In most cases these activities were sought out by participants. The self-development activity was closely linked with role performance and constructing an identity as an expert was the main motivation.

The remaining themes did not explicitly emerge from the identity adaptation process literature but were related to identity work in terms of interpreting interactions with external technical experts or consultants; the emergence of status seeking narratives and finally struggle / risk narratives. There were no specific prompts made so the data collected did not follow the pattern of iteration through roles: instead it was captured where it surfaced.

4.4.5 Seeking help – external technical advice (C12)

Two of the participants had sole responsibility for the IT function within their sections, while eight participants had sole responsibility within their entire organisations. For some this was a source of anxiety which led to a reliance on external technical advice. This relates to paid advice by third party suppliers or consultants, rather than advice via networks. Overall seven participants mentioned accessing external resources and, where this activity impacted on identity, their reflections are described below.

For John IT had been "invisible to the board" and after a long period of under-investment admittedly under his watch:

John: "We had a consultant's report done … it was someone telling us what we knew already. For me the plan for IT will be what the consultant produces."

Some participants were positive about working with third part suppliers. For example, Hazel said: "I don't look on them as third party support –I look on them as a business partner"; Graham said: "I've got no issues at all about things going to a third party to

be audited – it gave a bit of reassurance to the business as well" and "an IT consultant so he was quite helpful." Some were neutral, such as: "I've got an external consultant to come in – time constraints on me" while two were less positive. In particular, Steven looked on paying an external to do work as a loss of "knowledge and power" while Julie stated: "I had to give the work to somebody external and that's just not me."

In terms of help external to their immediate team, Lindsay said "I have no qualms about phoning anybody in the organisation" for help.

Seven participants mentioned seeking external help. This was in the main initiated by the organisation and could be interpreted as consolidating an expert technical identity in terms of their interactions within their organisations, rather than undermining it. However two participants were uneasy about external technical advice and found it challenged their technical expertise.

4.4.6 Status seeking identity narratives (C13)

For many participants there were positive self-narratives based on recognition of their work, financial success and upwards mobility. Less positively, some participants experienced a lack of progress and a lack of recognition within their organisations.

Lindsay expressed examples of external recognition of her work as a matter of pride and found value in being seen to be doing a good job. She mentioned that after completing the MSc she was now the most highly qualified of her friends. Her self-narrative was of someone who has been both successful and proven to be right when a decision became a fight:

Lindsay: "I really dug my heels in and it's been proved successful with our project" and *"I know that I have succeeded you know with lots of projects and that's cos I hear my name gets bandied about sometimes I'm a bit embarrassed."*

For Hazel there was also external recognition: "I hadn't realised I'd made that much of an impact" and James had picked up a nickname based on being an expert in a newly adopted technology.

Expressing increased confidence or pride in their capability, Lindsay, Graham, Ross and Sean mentioned that they were now making more professional cases for investment in IT resources.

For Graham, "I started to see some of [my] recommendations being put into practice" and "I've never presented a [business case] that's been knocked back. Never." John mentioned that taking the MSc course was a vehicle to gain status and external recognition and he mentioned the course when meeting his new team.

Narratives of financial success were observed such as highly paid roles, pay rises and bonuses. For example, Ian moving into a new role as a consultant: "I thought this is fantastic and I was getting paid more than I had been" but then: "[I was] charged out at that ridiculous rate and not really knowing what you're doing (laughs)." For Steven: "All my friends were getting money and I thought right I fancied a bit of that." Financial gain was mentioned as a reason to move. For Sean: "I was looking for something that paid better." Adrian referred to his success in his organisation: "I mean you get recognised, you get innovation rewards and there's financial benefits to them."

Counter to these experiences, however, Lindsay was aware of being less well paid: "Money's not the be all and end all of everything but it was beginning to irk." For Graham, "I enjoy my job – whether I get recognition for it – that's probably slightly different."

Some participants mentioned motivations for changing role. Reasons for role change included "no chance of progression"; "I just needed a change – I needed something to stretch me" and "I saw that as a good challenge and somewhere I could continue with what I wanted to do and progress into different areas." Only Sean mentioned horizon scanning for the next role: "I use the job market as a measurement, some sort of metric for maybe where I would develop my skills." For Lindsay whose career had, in the main, been a series of fixed term roles:

Lindsay: "Albeit it's been the right place at the right time or the connections, I don't think they've been totally to chance – I think a lot of it's if you've been successful at one thing it gives you the step up into something else."

For Andrew: "I almost got the job by default but that sort of made me more determined to make a success of it."

For some there was no immediate chance of progress; instead two stated concern that they would not be successful in finding a different job. For Pete: "My boss tells me if he ever retires then I'm the favourite for the job."

Some participants had an upwards mobility narrative. For example, Pete stated : "I started at the lowest point and worked my way up"; Adrian: "My dad was always very keen to make sure, that to get out of where we were back in the days of not having a lot." Other examples include "I worked my way up to become the expert in there"; "I just took that opportunity and moved on" but for one, they had been doing the job of IT officer but at assistant level until an external consultant came in and recommended a regrading. Michael discovered his company was going to appoint externally to a management role and he asked them to: "Teach me or give me a chance." He has "now got heads of department reporting to me – it's a bit more than I'd anticipated."

Most participants were observed to have status-seeking narratives based on career progression, remuneration and social mobility.

4.4.7 Struggle/ risk identity narratives (C14)

Significantly, all participants used the terminology of struggle, conflict and risk at times to describe their interactions in the workplace and a picture of their positions being, at times, counter to their organisational imperatives emerged. Examples were often related to requests for additional investment but also trying to introduce new technology in the face of resistance.

Lindsay used fighting and struggling terminology (lengthy "battles" to impose her decision when she was certain her viewpoint was right) and mentioned that she is not yet on the executive team of her department, stating that this has become a long running topic for teasing. For Steven, asking for a decision on investment in new technology: "It got to the point where I was sick fed up of banging my head against a brick wall." Other examples included: "I will battle to the nth degree"; "I really dug my heels in"; "forceful disagreements"; "I was on a really lonely battle"; "it's fighting my own corner."

James, when contradicting his line manager during a meeting with externals, stated: "I'm not going to sit and agree with you just for the sake of it."

To make a claim for additional resources participants mentioned: "I'm struggling to get someone else in" and "Now I can fight that battle [for resources] much better with the team." Requesting resource for data governance, Graham said had been "likely to

cause conflict" but "the data's safe and I can sleep at night." For Andrew, introducing new technology led to "a huge amount of conflict, a huge amount compromise."

The evolving nature of the employment landscape, for example the reliance on fixed term project work and restructuring and downsizing, contributed to seven participants having faced redundancy with a consequent impact on workplace identity. James's college restructured: "We went through a period where nobody had a job and that was scary." Also during a period of restructuring, John described feeling as if there's a "sword hanging."

Lindsay mentions the risk of failure: "I'm quite a pessimist and I always pre-empt things going wrong because I like to be prepared for something going wrong." For Andrew, there was recognition of a fragile relationship with clients when in an outsourced role:

Andrew: "I had a guy who screwed up something phenomenal and got flung off by the client…he was honest, too honest at times, too brutally honest."

Steven pressed for a change, saying: "I'm damned if I don't and damned if I do." Other examples included: "I've had to work hard to win the group round"; "I've not been afraid to take risks and chances"; "what's the point in [making a case for investment] if it'll never happen, we'll never get approval" and "we can't run an IT service with a couple of sticking plasters and 50p in the meter."

Struggles to make a case for investment were resolved at time by seeking external support, for example,

Graham: "sometimes you need someone to give a bit of external influence to highlight the fact that actually if you invest in someone you'll get more out."

For others the rate of technological change proved a challenge: "it was constant evolution and at a very fast pace too"; "there's no reality on how exhausting that is and that was my first experience – two weeks into the job and you just got chucked in."

Sole responsibility for IT within an organisation led to isolation. Examples included: "you don't know what you don't know and there's nobody here does the job I do so there's nobody to compare with"; "I remember feeling the strain – I felt I had to do everything, you know it felt like it was all my responsibility"; "it's business critical – so

it's quite stressful and onerous at times" and "you were suddenly responsible for the network being up and you had to think about disaster recovery arrangements."

Where the IT function sat within the organisation at times led to frustration and a lack of recognition, for example,

Ross: "Sometimes IT, HR, the back office function becomes the whipping boy internally."

In a similar vein, Hazel commented that "IT is looked upon as a service – I'm pushing for changes." For Steven, "I found that IT sometimes seems in the background. If it's all working then we don't really want to know about it." In Sean's organisation, "when you're presenting at senior team meetings – they probably want it over as soon as possible." In one role, Andrew expressed that IT was "looked down on." Comparisons were made with other business units: "things seem to go through easier in finance" and in Ian's current role "the IT function seems to resent the finance function. It ends up being a tense relationship between the two."

Participants used struggle or risk narratives to express the tension between the IT function and other aspects of their organisations, in particular where the IT function was not well understood. For some participants, their place in the decision making process was at times a source of struggle; in particular when they did not think their views were being taken into account.

4.5 Conclusion

Through a coding system primarily based on the literature with three further emergent adaptation themes, this chapter was designed to enable the participants' voices to surface. The life narrative technique used was designed to provide an exploration of professional identity construction and adaptation with quotations taken directly from the transcripts. Professional identity construction was observed through commitment to organisations, technical skills and leadership capability. In terms of identity construction, when participants described their working life it became clear that professional identity (as experienced by members of strong professions such as doctors, nurses or accountants) was not observed. Instead participants mentioned their identification with their organisations' missions and goals, the value they placed on their technical skills and finally their sense of identity as leaders. Non-work based

identity, although not explicitly sought, was observed and coded as personal values, home life identity as it impacted on work and, finally, good fortune narratives. Identity work was observed with a significant emphasis on context-specific self-development. All participants were found to be involved in sustained and extensive self-development activity. Participants were observed to use role models, developmental networks and possible selves to some extent. Further themes to emerge which were not highlighted in the literature review were categorised as seeking help, seeking status and struggle/risk narratives. The following chapter contains a discussion which links the themes as encountered through the interviews to the literature and considers the possibility of retroduction.

Chapter 5: Discussion

5.1 Introduction

This chapter presents a discussion of the thematic content of the life narratives with reference to the existing literature and analysis designed to explore possible explanations of the findings. It is presented in three main sections: theoretical re-description, theoretical interpretation and retroduction.

In critical realist terms, considering the data of the life narratives thematically in the context of the literature constitutes theoretical re-description. Through this re-description, phenomena may emerge. Ashforth et al.'s (2008, 2014) model for the process of identification is then reintroduced to explore the dynamic construction and reconstruction of workplace identity and the process model is considered in light of findings and the re-description of the participants' life narratives.

The next stage involves retroduction of any phenomena observed, to consider an explanation of the nature of the pre-conditions for these phenomena. In conducting research into professional identities, critical realism offers the recognition that organisational structures exist independently of the individuals' experience of them, while the 'surface appearance' of things may be misleading and further exploration into the 'how' is required (Benton & Craib, 2011, p. 121). In terms of this study, individuals construct and adapt their identities and the nature of the new identity itself from a subjective perspective constitutes the empirical layer and is described above in Chapter 4. The 'how' is the purpose of this chapter.

5.2 Theoretical re-description or *abduction*

To provide a means of capturing the essence of observed behaviour, metaphors or motifs can be used in analysis (for examples, see Beech & Johnson, 2005; Kram et al., 2012). As the life narratives emerged it became clear that there were four loose groupings based largely on routes to becoming a professional in IT and identity salience. For the purpose of the discussion the following metaphors were identified to capture the essence of the participants' routes into the IT profession: pioneer, traditionalist, drifter and evangelist. These categories emerged through the close reading of the life narratives as the participants' revealed their routes into the IT sector.

The metaphors are named in a way to reflect a characterisation of entry routes. The route into the IT sector established broadly similar patterns of self-identification. The metaphors do not fully describe the nuances of identity construction and are used to capture the essence of participant sub-groups. All participants can be categorised through the four metaphors that are broadly summarised as follows:

Pioneer – an early entrant to IT with a long career in the profession: Lindsay and Hazel. Both Lindsay and Hazel had made a conscious decision, based on aptitude, to train in IT and join the profession. Both self-identified as competent problem solvers with an ongoing interest in new technology and how it might be deployed within their organisations.

Traditionalist – coming to computing through some formal education in computing or IT: Steven, Pete and Michael. Steven and Pete were influenced by family members to consider taking a course in computing, while Michael was influenced by a work colleague. In each case the prospect of a well-paid job was the main motivating factor. Having a somewhat traditional route into IT was associated with technical capability combined with some anxiety as this group of participants held positions of responsibility within their organisations together with high expectations of delivery.

Drifter – drifting into IT through non-IT routes, when the opportunity arose: John, Ian, and Julie. For John and Julie the opportunity for an IT role was brought about by the increasing ubiquity of computing in education and social care. Ian's role in accountancy was also increasingly computerised and skills in IT were developed through the necessity of computerising accountancy processes. The drifters brought self-identification as competent professionals from outside the IT sector.

Evangelist – agency influencing a move into computing as a positive destination: Sean, Andrew, Adrian, James, Graham and Ross. These participants were observed evangelising about what technology could do to improve their organisations. The term also reflects that rather than drifting into the profession through the computerisation of work, each consciously and deliberately moved into computing through roles or education in other sectors; through opportunity, an interest in problem solving and recognition of what technology could achieve. This sub-group evangelised about what IT systems could deliver and they generally self-identified as problem solvers who had had the good fortune to find their way into rewarding careers.

The metaphors are used to capture the essence of the participants' entry to the profession which in turn was observed to influence their narratives. Each of the themes identified in Chapter 4 is considered in turn below and linked to existing theories.

5.2.1 Identity Construction

5.2.1.1 Organisational identity (C1)

All participants in the study were observed to have constructed an organisational identity and commitment to this identity was observed through adherence to organisational values, for example value in doing a good job and using new technology to meet organisational goals. Eleven of the participants were observed to show strong commitment to their organisational identity through close alignment with organisational imperatives and values. Albert et al. (2000) stated that changes to the labour market from relational contracts to short term transactional contracts may make organisational identification and loyalty 'appear quaint, even naive' (p. 1). However although some participants' careers had consisted of fixed term contracts, redundancy, uncertainty through restructuring and the threat of redundancy, all were now in relatively stable positions and organisational identity was observed. In their study of software workers, Marks and Scholarios (2007) found stronger organisational identity in lower skilled groups who had less access to external opportunities. Of the eleven participants, skills levels varied; however where a high level of technical ability was observed, in most cases these technical skills had been developed while working within their current organisation. For example, Adrian's high level of technical skills had been built up both on-the-job and his company had invested in his training. Organisational commitment was also expressed for less positive reasons. For example, John, Sean and Pete, drew attention to a lack of external opportunity by explaining that they would not at this time be able to find a suitable job externally. In each case, however, they alluded to the Masters course as a means of changing this situation.

Half of the participants were observed to have selected an organisation that corresponded to 'their personal and professional identities' (Kumpusalo, 1994, p. 70) while an additional four participants had developed a strong commitment to their organisational identity over time. The remaining three participants (Ian, Steven and Pete) were observed to identify less with their organisations. They had each exhibited

less agency with respect to moving into the IT profession and had spent less time with their organisations than most. Furthermore their current line managers, as emerging from the narratives, could not be described as transformational leaders. Transformational leaders have been found to impact positively on organisational identification (He & Brown, 2013). Finally, significantly, their organisations did not themselves appear to fully recognise the IT function as exhibited by complex organisational structures and a lack of business coherence. In particular, responsibility for IT fell under different remits leading to a complex picture of organisational identity salience that varied dynamically depending on tasks and projects. Ingroup behaviour was observed with participants at times conforming with organisational processes as the easiest way to get things done, and at times seeing IT and their teams as not sufficiently recognised by their organisations.

Organisation attractiveness has been found (for example by Dukerich et al., 2002) to be an antecedent to organisational identity, while Alvesson (2001) found that the more prestigious the organisation, the more likely an employee was to define themselves as belonging to it. Three participants (Andrew, Michael and Adrian) worked for organisations that could be described as prestigious in the IT sector, as measured by both technical reputation and historical attractiveness as an employer. Organisational identification was observed for all three. A further eight participants (John, Lindsay, Hazel, Sean, Andrew, Graham, Ross and Julie) expressed the attractiveness of their organisations based less on external prestige and more on shared organisational values, in effect, their 'perceived oneness' (He & Brown, 2013, p. 38, see also Ashforth & Mael, 1989).

Ian, Andrew, Adrian and Michael worked for large global companies and all remarked on their interactions with employees or service providers based in other countries. Albert et al. (2000) found that 'an identity formed through interaction with a similar other is necessarily altered when the other is replaced by a stranger' (p. 13) and in three instances the participants mentioned changing the style of their interactions depending on the nationality of the team member. Respect was afforded to international teams.

Where organisational identification was less in evidence, for example, in situations where their role was placed in conflict with other members of the organisation (for

example, dissatisfaction expressed by service users, conflicting reporting lines or competing for scarce resources), conflict between organisational identity and other identities was observed. At these times there was evidence of ingroup behaviour (for example, constructing narratives of previous project success and positive delivery) which could explain why, in these situations, self-categorization as a member of the organisation could be more problematic (for example, Jenkins, 2004).

5.2.1.2 Technical skills-based identity (C2)

Skills-based identity construction varied according to both individual expertise and the status of IT within the organisation, echoing Alvesson's duality of agency and structure in identity construction (2010) and findings elsewhere (for example, Hotho, 2008).

For the two pioneers, high skills levels combined with organisational identity commitment consolidated their identities as experts within their organisations with consequent self-narratives as confident problem solvers.

The three drifters, John, Ian and Julie, brought a level of confidence and capability from a previous profession and identification with skills-based expertise was less salient, as observed, for example, through expressing IT as 'not rocket science'. These participants did not self-verify as IT professionals nor were they observed to recognise the worth of the group consisting of IT professionals, unlike the participants in Brooks et al.'s (2010) study of IT workers, although they did recognise the skills levels and competence of their teams. John, Ian and Julie self-identified either with new leadership identities or with their previous roles. This was observed, for example, when value was placed in continuing to hold pre-existing organisational values which, for Julie, related to the caring profession.

The six evangelists were observed to self-verify as skilled IT practitioners (as found by Brooks et al., 2010), through, for example, pride in wider recognition of their technical skills, their ability to help people within their organisations and through a personal interest and enjoyment gained from using new technology for problem solving. For four of the evangelists (Andrew, Sean, Ross and Graham) a conscious decision had been made to move into IT through expectations that the work would be more interesting than their current role. Tajfel (1978) argued that group membership is based on self-esteem, so if a group continues to promote an individual's self-esteem then membership is advantageous. He argued that leaving or abandoning a group is

based on self-interest in social mobility and this was the case for these four participants. Ingroup behaviour with their new professional group was found, in particular, by contrasting the new group of IT practitioners with previous occupational groups through negative comparisons. The *evangelism* observed through satisfaction of new technology and its impact may be evidence of the Marks and Thompson (2010, p. 325) argument that changes in group membership 'leads to group members defending the properties and attributes associated with their group.'

Beech et al. (2008) found risk a factor in identity adaptation and for the remaining two evangelists, Adrian and James, IT offered an opportunity to move into employment or leave a precarious job. The move was an opportunity for a new career. All evangelists shared group identification based on technical skills.

The three traditionalists were observed to enjoy external recognition as IT practitioners, placing value on this as a 'highly regarded profession', as did the software workers in a study by Marks & Scholarios (2007, p. 115). Each expressed satisfaction in developing their technical know-how to advance their organisations and Pete and Michael in particular were proud of their technical achievements prior to moving into a leadership role (for Pete, being a 'golden boy', for Michael being a 'fix-it' man). Steven felt the weight of expectation of being in an organisation where IT was an enabler rather than a key business function and regarded to some extent as being less business critical. Scott & Lane (2000) suggest that perceived overlap with an organisation has been shown to positively impact on self-esteem. For Steven, embedded in a non-IT organisation, identity conflict was observed with consequent anxiety. In previous studies identity conflict has been found when organisational and professional identities are not aligned (for example, Hotho, 2008; Clouder et al, 2012; Beech et al, 2008). For traditionalists, with skills and training in IT, conflict was observed between their organisational identities and their technical identities, for example through expressions such as being in a "lonely place" as the main IT expert and wanting to maintain "knowledge and power." To some extent drifters, as less technically skilled, experienced less identity conflict than the traditionalists.

Overall, Alvesson (2012) found technical skills in some organisations were 'far from sufficient' (p. 60) and that value was placed by some organisations on softer skills such as project management skills and communication skills. Drifters, bringing skills

from previous roles to their organisations, had a greater breadth of experience and less reliance on technical skills. Traditionalists, evangelists and pioneers had all benefited more from their technical skills in terms of career advancement and were observed to have constructed identities based on acknowledged expert and consequent identity salience with a technical skills-based identity.

5.2.1.3 Leadership identity (C3)

For each of the participants, some aspects of construction of a leadership identity were observed, with leadership aligned with working with others to fulfil organisational goals and, to a lesser extent, aligned with personal values. Only two of the participants, Ian and Michael, were observed to show greater commitment to a leadership identity than technical skills-based and organisational identities. Both were in senior positions and both had some reservations about their organisation's capability. Ian was at times quite disparaging about his company and Michael had, in the past, been turned down for a promotion. Some participants, notably John, Lindsay and Pete, acknowledged having good role models from whom they had learnt leadership behaviours. Indeed all participants were observed to identify with some or all of Komives et al.'s (2006) six stages: awareness of leadership traits; exploration (or enactment, also DeRue et al., 2009); recognition of the leader position; distribution of leadership; developing others; leading finally to a consolidated leadership identity. Each of the participants could be identified as having reached the fourth stages, with thirteen giving specific unprompted examples of the fifth stage i.e. developing others. In terms of stage one, awareness of leadership traits, three in particular expressly mentioned role models and all participants, when prompted, described their personal leadership styles. Stage two, exploration or enactment of leadership identities, was not explicitly observed through the life narratives. However, although there were no specific examples of participants describing the enactment of leadership, this might have been due to the use of life narratives. Direct questioning about this aspect of leadership identity construction may have resulted in a different response. For each participant, experience had been gained through the necessity of holding a team leadership position and through leading change within their organisations. Stage three, endorsement through badges, titles and internal recognition (for example, DeRue & Ashford, 2010), was mentioned in both internal and external contexts. Job titles as signifiers of leadership were mentioned by many of the participants, as was organisational recognition of the role

of leader. In terms of external recognition, a new job title suggestive of a leadership role was perceived as a requirement for a change of job or to support networking. Distribution of leadership was observed (stage four). However this was not always positively expressed and there was some anxiety about having to relinquish both skills and close involvement with users. Beazley (2000) found the requirement for employees to take on leadership capability in hyper-change situations led to more widely distributed leadership. For these participants this was not universally welcomed. Stage five, developing others, was observed in most cases, for example, participants mentioned taking team members to conferences or arranging for them to attend courses. Completion of these stages was found by Komives et al. (2006) to lead to a consolidated leadership identity; however Sveningsson & Alvesson (2003) found managerial identities varied according to context, rather than being a single coherent position and furthermore found these positions could be contradictory. A consolidated leadership identity was observed in only one participant, Ian, who had recently taken on a new role as IT Manager and had had to lead his team through restructuring. For others, identity contradictions included a concern about relinquishing skills (also observed by Hotho, 2008) and scepticism with respect to a new self-identity as a leader. Some participants admitted to "struggling" with having to move away from their skills identity and identity with greater leadership capability. Negative aspects included finding leadership "frustrating", with participants, for example, preferring to be task focused. Role models were not observed to have a significant impact on career decisions; however they were cited as helping to develop leadership traits and participants used external regard and a narrative about getting the job done to maintain a positive self- identification in the face of having to transition to a leadership role which they viewed, at times, as taking away from valuable technical development work. Time was also a mentioned as a negative factor associated with leadership roles and participants did not value the time spent on leadership, preferring problem solving activity. This is suggestive of less commitment to leadership identity (Serpe & Stryker, 2011).

Personal leadership identity styles were observed together with a need for these to be authentic and honest (for authentic leadership see, for example, Yukl; 2013). Value was also placed, however, on task completion, with participants willing to be unpopular if that was necessary to accomplish a task. Hogg (2006) found that where group

identity is salient, the leaders who are not prototypical have a tendency to be unpopular. It is possible that the introduction of new technology can disrupt a group and subsequently lead to an increase in identity work and the reappraisal of prototypes. In this case the leader is likely to be unpopular initially. This was observed in James's situation where the IT team were not initially in favour of a new technology; however they had eventually grudgingly acknowledged that he had identified a good technical solution. One observation from the life narratives was the paucity of IT leaders mentioned by the participants. In many cases the participants' managers and those mentioned in leadership roles within their respective organisations did not have a background in IT.

Studies have shown leaders' ability to shape the identities of followers (for example, Avolio et al., 2009). Most participants favoured a collaborative leadership style and placed value in evidence and explanation. However they were able to make decisions in the face of opposition. Two participants specifically mentioned a need to adapt their leadership styles; in one case to suit a team member's personal preferences and in another to reflect a change in organisational culture. The Servant-Leader style (Guillaume et al., 2012) whereby leaders emerge through an initial desire to serve was observed in all three women in the study: Lindsay, Hazel and Julie. Each continued to value the user-as-master conception and work in this area was expressed as reminding themselves why they were in their current roles. Work ethic and performance, as found by Thomas and Linstead (2002) to impact on leadership identity construction, was in evidence with participants mentioning excessive working hours and project success.

For some participants there was evidence of an amplification of differences between the IT function and other business units. This type of activity has been shown by Korte (2007) as a means of promoting self-esteem in a situation where a low status group is seeking to increase its status.

As an example of increasing resources available for identity work (Beech et al., 2010), participants were self-motivated to undertake identity work based on the development of leadership skills. In the case of one participant, she had "thrown her toys out of the pram" to have a chance to take the Masters course. For most, the course had changed their self-concept as leaders: mentioning increased confidence, having the authority

to apply for a new post, consolidation of prior experience, reinforcement of existing identities, external and internal recognition.

5.2.1.4 Identification with the IT profession (C4)

None of the participants strongly identified with the IT profession in terms of membership of a professional body, interacting with generic networks of IT professionals or attending training or networking events run through the professional body. This contrasts with findings elsewhere for professions such as the medical profession or the teaching profession (for example see Hotho, 2008; Larson, 2012) whereby previous studies have observed a strong identification with the relevant profession as manifested variously by values held in the workplace, membership entitlement, in-group behaviour and professional identity commitment.

IT worker identity may be polarised between highly skilled development work and lower skilled test and maintenance work (Marks and Scholarios, 2007). However, mobility has been observed between these activities in this study, in particular role changes leading to upwards social mobility. In this way the IT profession does not share all the characteristics of more established professions. Enabling IT workers to move from low skilled work to highly skilled work or indeed from technical work to managerial positions resulted in participants creating both status-seeking and good fortune narratives. With entry level barriers only loosely defined, it remains possible for IT workers to enter the profession with low levels of qualifications. Indeed some employers are now supporting the introduction of degree apprenticeships which may offer people a chance to work and study and avoid the debt associated with university attendance.

Although Healy (2009) found that there were those within the social work profession who objected to the 'elitist and exclusionary dimensions of professional recognition', she concluded that a weak profession can't withstand exploitation (p. 405). In the case of this study, an element of exploitation may have impacted on the struggle, risk and good fortune narratives observed.

The lack of an IT professional identity will be considered further in the next section where possible mechanisms are proposed and the nature of the IT professional body is considered.

5.2.1.4 Summary of identity construction

To summarise the participants' observed identity construction and identity salience, Figure 5.1 depicts a Venn diagram highlighting the overlapping nature of identity construction. Each participant is placed in a position to demonstrate the essence of identity salience as observed through the life narratives.
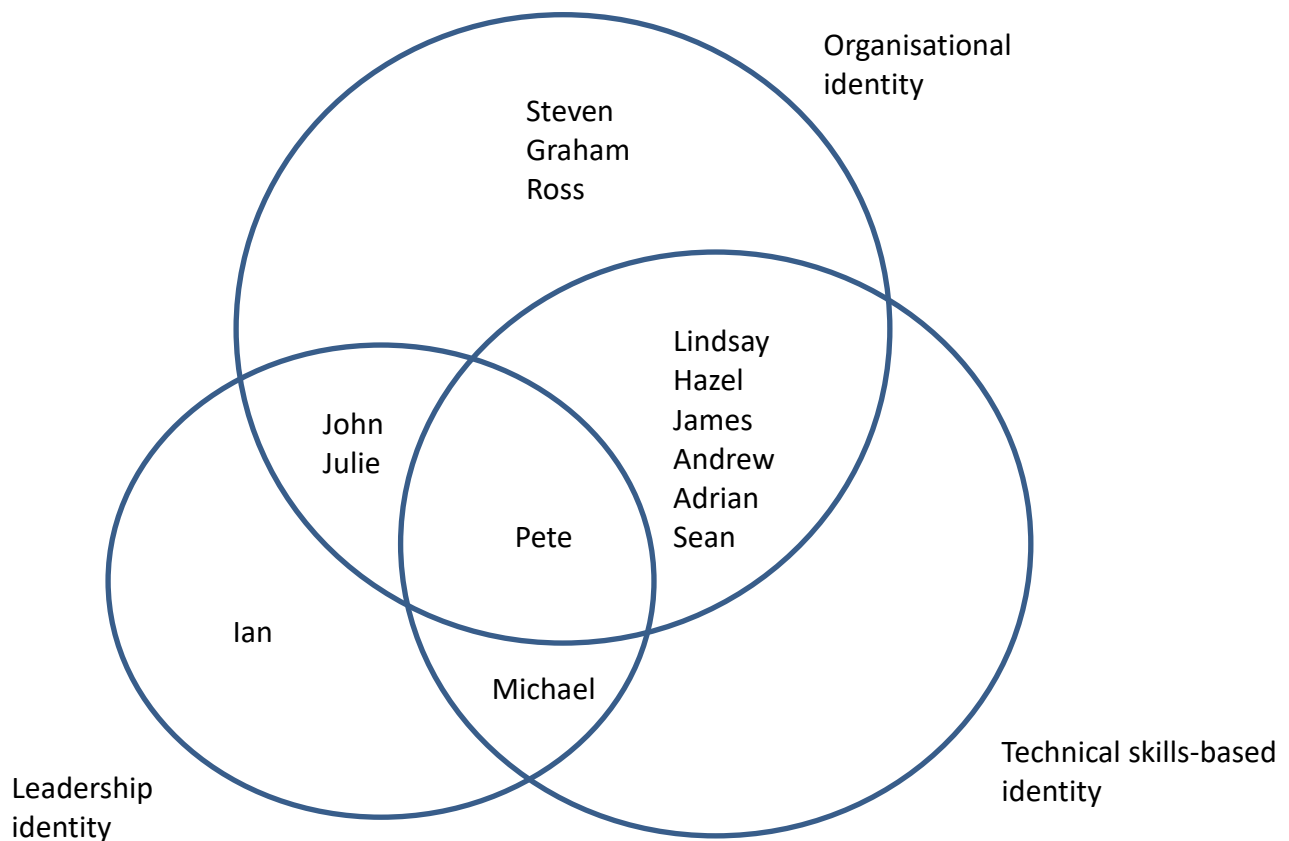
Figure 5.1 Participants' identity salience

For the two Pioneers, technical skills were a source of pride. Lindsay experienced "battles" and "struggles" when decisions were based on technology and her technical skills based identity placed her in conflict with organisational identity. Likewise Hazel was observed to be committed to both organisational and technical skills-based identities. She sought recognition for the importance of the IT function and had been able to establish increased status within her organisation and a prominent place as chair of a new projects board. Lindsay and Hazel had small focused teams and both expressed pride in what they and their teams had together been able to achieve.

For most participants, organisational identity was observed to be most salient and for Drifters such as John and Julie this was expressed in the main through a desire to improve the lives of IT users. John and Julie also showed strong commitment to leadership identities through recognising the strengths of their teams and valuing team interactions.

Pete expressed organisational commitment with an ambition to support the needs of the organisation through advances in IT infrastructure. He also identified as a technical expert; however, this had also caused him problems in terms of group identification. Pete, however, was observed to identify also as a leader through recognising individual work styles and encouraging staff development. James had only recently taken over as a section leader and had maintained his commitment to an organisational identity in light of his successful promotion. His technical expert self-narrative demonstrated identification with a specialist skills-base and exploration of new technologies. Graham and Ross also expressed satisfaction with technical solutions. However they were both observed to exhibit strong organisational identity commitment, through a desire to deliver business benefits.

Steven identified most closely with his organisation and the requirement of his role to support the main business function. Michael had recently moved into a leadership role with responsibility for multiple departments. He had undertaken leadership identity work and expressed recognition that he had to change in his dealings with people. Having previously been a technical expert, he was now exhibiting leadership identity salience. Likewise, Ian had recently taken over the role of IT Manager within a large organisation and exhibited leadership identity salience. As a Drifter he had less commitment to technical skills and was, at times, quite scathing about his organisation.

Andrew, Adrian and Sean, through self-narratives of technical competence and commitment to organisational objectives, were observed to have constructed identities based on their organisations which were represented as prestigious, or supportive of their roles, and their technical skills.

In depicting individuals with their salient identities, it becomes clear that for this group of participants none had constructed solely technical skills-based identities. With the exception of the Drifters, technical expertise in IT had been their career starting point so while value was expressed in technical skills and frustration was expressed at times

with their role within organisations, all had constructed new identities as their careers and roles developed. Organisational, technical skills-based and leadership identities all formed part of identity construction for this participant group, varying according to a dynamic combination of career entry, skills development, work experiences and personal values.

5.2.2 Influence of Personal Identity

5.2.2.1 Identity expressed through personal values (C5)

Personal values emerged from most of the life narratives and values cited included helping others which, in some cases, involved close listening to the needs of IT users and respecting the value of the work they did. In O'Conner's (2006) study of the teaching profession, caring is defined as emotion, action and reflection associated with a desire to teach. Using a similar definition of caring as resulting from the participants' desire to support and help end users, caring was observed in thirteen participants. Lindsay and Hazel in particular expressed pride in what their organisations were setting out to achieve and revealed that it chimed with their personal values. For some, the emotion observed was frustration at not being able to do more to help users because of a lack of resources.

Studies on gender, work and identity in IT have found that women have a greater affinity to users (Sørensen, 1992). In fact, twelve of the fourteen participants, including all three women, expressed value in doing a good job and this was related to good outcomes for service users. Expressing value in working practices is indicative of ingroup behaviour leading to increased self-esteem.

5.2.2.2 Home impacting work - identity as a family member (C6)

Home life impacting on work and vice versa emerged from the narratives and, in particular, in the case of all female participants.

Gender was not specifically identified in the literature review, although it emerged through all three of the women's life narratives. A sizeable body of knowledge exists on gender and identity. Unlike professional identity, gender is considered to be an essentialist identity, with fixed characteristics (Woodward, 1997). For the purpose of this study, gender in the IT sector is now considered where it emerges from the life

narratives, in particular with respect to work impacting on home life and the gender imbalance in the IT profession.

Hazel and Julie experienced anxiety early on in their careers about being in a "world of men." Women remain under-represented in the UK IT sector, with females making up just 16% of the workforce (BCS, 2014). Both Hazel and Julie were observed to be putting on a brave face in male-dominated situations, enacting a more confident version of themselves. The three female participants were less likely to encounter prototypical IT professionals and only Lindsay mentioned having had a female boss. Hazel mentioned that her "friends thought it was funny" that she was in IT. Bury (2011) found that women struggle with female geek imagery; however only Hazel mentioned external opinions.

Previous studies on gender, work and identity in IT have found that women have a greater affinity to users and less competitive approaches within their organisations (Sorenson, 1992; Gunnarsson, 1994). An affinity to users was observed in all three participants. All were working in non-IT organisations and each expressed job satisfaction related to helping users. In previous studies, women have been found to favour business related and hybrid roles interpreting users' requirements (Vehviläinen, 1991; Harvey Nash, 2015). This was the case for Julie. Hazel and Lindsay, however, had been pioneers in computing and both had technical skills that were an important part of their identity.

In this study, personal values and the salience of female participants' identities as parents or daughters were observed to influence career decisions and impact on job satisfaction. Women in IT have been found to make career decisions based on domestic arrangements (Castaño & Webster, 2011) and this was observed by all three female participants. Lindsay had taken an eight year career break and Hazel had accepted a part-time role which she described as a "step back." Julie mentioned family life and how her husband had been able to pick up most of the responsibility of caring for their young children, enabling her to work in a demanding and time-consuming job. For Lindsay and Hazel, career decisions were not beneficial to status or income; however where personal values chimed with organisational values, the impact on job satisfaction and motivation were positive.

Finally, women in IT have been found to experience a 16% gender pay gap (Runciman, 2014). One of the participants mentioned that she was less well paid than others, describing this as irksome. She did not specifically mention whether she was comparing herself to women, men or even people in different roles.

Two male participants (Ian and Andrew) had made career choices based on having flexibility or more time to spend with their families. In neither case were these expressed as being detrimental to their careers, rather that the role had been more convenient. Pete mentioned enjoying the advantages of flexi-time both for being able to drop his child off at school but also to be able to play a round of golf. In terms of impact on working life, Lindsay in particular mentioned that she felt strongly that issues at home had to remain there for her and her team.

For the women participants, personal identity, as a woman, daughter or mother, was at times observed to be more salient than workplace identity and affected their career decisions.

5.2.2.3 Identity expressed through "good fortune" narratives (C7)

In all participants there was modesty in the way they presented their professional careers which was manifested in statements such as being fortunate to secure roles, for example, being in the "right place, right time" to secure a sought after role, rather than being the right person with the right skillset. Other examples included participants' belief that luck had played an important part in their career successes. A sense of good fortune and undeserved success permeated all except Ian and Michael's life narratives. There were examples of negative comparisons with other or different career paths. In one case the move into computing from a finance role drew out negative comparisons, for example of finance work being limited and boring. These comparisons are examples of ingroup behaviour and offer an opportunity to increase self-esteem.

Self-deprecation was also observed. For example, Adrian described himself as "somewhat stupid but saveable." Being reliable, working hard and securing good outcomes for their organisations were all expressed as a component of professional identity.

Good fortune narratives have been found to be used as stories of success in group activities (Hirokawa et al, 2000) and elsewhere to be used to explain outgroup success (Chatman & von Hippel, 2001, cited in Lam et al., 2004). In some organisations the IT function was recognisably presented by participants as an outgroup, with other departments being described as receiving attention and funding more readily.

It is possible that the participants expressed good fortune in this study because of the leadership and development course which might have been seen as advantageous to them, such that good fortune surfaced more readily than with a random sample from the industry.

5.2.3 Identity Adaptation

5.2.3.1 Role models (C8)

Role models have been much cited in the literature on professional identity (for example, Beijaard, et al., 2000; Cruess et al., 2014, Ibarra, 1999; Singh et al.; 2006) as a means of undertaking identity work. None of the participants mentioned high profile industry or celebrity role models. Only two participants, John and Lindsay, explicitly mentioned role models. Role models provide a source of prototypical behaviour from which role schema emerge (Neale, 2006). The lack of role models cited could by symptomatic of a challenge for these participants in consolidating their professional identities which in turn may have influenced the finding that participants do not identify with the IT profession. The role models mentioned exhibited what John and Lindsay regarded as positive leadership behaviour.

5.2.3.2 Possible selves (C9)

The technique of experimenting with possible selves (for example, Markus & Nurius, 1986; Grossman & Ronfeldt, 2008) or provisional selves (Ibarra, 1999), whereby individuals enact a new identity before it becomes consolidated, has been observed elsewhere. There was some evidence of this expressed by participants although not explicitly. Enactment as identity work was observed when participants moved into new roles or discussed enhancing their own roles. For some participants, imagining a different self was a means of displacing anxiety about performance, for example at external meetings. For Ian, enactment as an expert was observed when taking on a consultant's role. Ibarra (1999) describes a process whereby a role model is used to help construct a provisional self which is then tried out and refined until the new identity

is consolidated. The lack of role models cited could impact the potential for participants experimenting with possible or provisional selves.

In terms of identity work, experimenting with a possible self was not observed to be significant with this participant group.

5.2.3.3 Developmental networks (C10)

In terms of role models and developmental networks, while these were highlighted by all participants, the participants' observed behaviour did not match the preconditions for identification as an IT professional as described by Brooks et al. (2010), namely perceived similarity to others in the profession. Instead neither role models nor members of developmental networks were identifiably prototypical members of the IT profession. All networks are considered in this section rather than a specific focus on developmental networks.

Some participants had access to formal product-focused networks and found these a useful way to hear about how new technology had been implemented elsewhere. In terms of identity work, these networks were used to strengthen their technical expert identity within their own organisations. For most participants there was sole responsibility for investment in new technology and these product-focused networks were cited as a means of reducing personal anxiety and reducing risk to their organisations. Paulsen (2006) suggests that providing value for money within an organisation has been seen to cause purchasers to make decisions remotely from their users. Using product-based networks has, therefore, the potential to distance the decision makers from the users. However they were seen as essential in introducing new technology which required a significant investment.

Peer networking was mentioned by five participants. The stated purpose of the peer networking was to increase commitment to a technical skills identity through sharing sector-specific technical knowledge or to consolidate leadership identity. Only Ian used his network as a means to enhance influence and status. For others the activity could be viewed as reducing risks (Beech et al., 2009), for example finding insights from elsewhere to bring experiences back into their workplace. Networking has been established as a means of securing a job (for example, Hansen 2013). Ian secured a new job in this way, while Lindsay, who had had what could be described as an opportunistic career, had been able to secure a number of roles through wide

networks, both social and professional. Three others also mentioned that they had benefitted from some inside knowledge of an organisation in job applications.

5.2.3.4 Self-development (C11)

Self-development emerged strongly from all participants and was observed to be an important component in identity work, for example as a means to retain expert status. Attending the Masters course itself was evidence of both effort and an attempt to increase capacity for identity work (Beech et al., 2008), leading to identity adaptation, for example, consolidation of leadership identity through self-categorisation and recognition within their organisations (DeRue & Ashford, 2010). For most their motivation to attend was to gain external recognition with the Masters award and for each participant it constituted recognisable identity work with an adaptation in identity expressed through increased confidence in their role and interactions with their staff or re-positioning to apply for a new role.

The technical skills development on the course was generally reported as used to confirm that what they were doing was right – in effect consolidating their skills-based identity. Likewise, Brooks et al (2010) found the need for ongoing technical skills development to enhance self-efficacy. Echoing Thomas & Linstead's study (2002), four of the participants were anxious about losing their technical skills. Denning (2014) suggests that technology innovation is 'automating knowledge work' and recommends IT professionals spend more time reading to keep ahead of advances. This willingness to keep up to date with technology and continually horizon scanning to benefit their organisations was observed in all participants. For pioneers, there was acceptance that time should be spent with supporting documentation to gain mastery. Others also spent a lot of free time keeping up to date with technological advances through online forums, technical conferences and training courses together with a consideration of how that could help their work. In the face of technological and organisational change all participants had self-conceptions as adaptable and flexible workers in the main through "on-the-job-training." Management training was not available to all participants but where there had been opportunities the training was generally well received and examples were expressed about how it had been used. One participant had recognised his own poor leadership behaviour as a result of attending a management course and had changed his approach to interactions with staff.

All participants were pro-active in self-development, both as participants on the course and in their day-to-day work. Role changes increased this activity; however Adrian summed up the views and experiences of all participants: "you can't stop learning in any role otherwise you're just going to miss something."

5.2.3.5 Seeking help (C12)

Reliance on external expertise was observed with most participants, for example bringing in a consultant to review IT infrastructure or to complete a specific project. Participants had varying reactions to external input in terms of their identity construction. Most were observed to use technical experts as a means of enhancing their prototypicality as an IT professional (for more on prototypes see, for example, Turner, 1975; Hogg, 2001) and so constituted an additional resource for identity work; and for most this was expressed positively.

However, Julie was uneasy that she had had to outsource some of her work and did not think they would do the work in exactly the way she would have done it. Steven was also less positive about the experience of an external expert being brought in and, with sole responsibility for IT within a non-IT organisation, saw the external technical expert as a threat to his knowledge and power. In Steven's case the external was brought in to provide additional expert resource. Lamb & Davidson (2007) defined 'resistance identity' as experienced when an actor is excluded by the dominant ingroup (p. 5). In this case the actor, based in a non-IT organisation, was outwith the main business function and the external had been brought in for specific technical knowledge, challenging the participant's skills based identity.

Some participants stated that they were not afraid to ask for help and had good working relationships with third party suppliers. This has been identified elsewhere (for example, Svengingsson & Alvesson, 2003; Thomas & Linstead, 2002) as conducive to maintaining or repairing identity.

As a phenomenon not encountered in all professions, the impact of external professional help on identity construction and identity work did not emerge from the literature review. The theme emerged from the life narratives as either support for an identity position as a technical expert or a risk to a technical expert identity. This chimes with Beech et al.'s (2010) premise that preconditions for identity work are either a risk of not undertaking identity work or the acquisition of resources to undertake

identity work. Reliance on external technical support was viewed by three participants as a risk, for others it was a resource.

5.2.3.6 Status seeking self-narratives (C13)

Bauer et al. (2008) define narrative identity as 'the internal, dynamic life story that an individual constructs to make sense of his or her life' and found that stories of upwards mobility were constructed by individuals who were continuing to grow and develop (p. 81). Upwards mobility self-narratives were observed in five of the participants and in each case the participant inferred that their career was still on a positive trajectory. As with Thomas & Linstead's (2002) study of managers, status seeking self-narratives were observed to act as a resource, providing self-verification and justification for high regard within their organisations.

Stories of project success against the odds were featured in most of the participants' narratives and these were triggered in the main by a successfully argued case for investment in new technology. Identity work was observed when participants expressed the need to make well-reasoned cases for IT investment. In terms of professional identity, some participants drew upon IT consultants to help build a case, recognising organisational imperatives; however this served to reinforce diffidence with respect to skills based identity. Other participants, for example Lindsay, relied on the success of previous projects to establish new funding streams and reinforced project success narratives at work while acknowledging that cases had to be made professionally.

Financial reward was, in the main, mentioned only in the context of an expression of the organisation's regard for the individual. Lindsay was annoyed that she had a lower salary than her peers. McNeil et al. (2013) found that differential treatment was a threat to professional identity. Other examples of increased status included positive statements about the impact of their work, nicknames as badges of honour and recognition as a technical expert. Job satisfaction was observed to be linked to enjoyment and recognition of project delivery, rather than financial reward.

Status seeking narratives are an example of self-verification as a member of an ingroup. For most participants this was related to salience of organisational identity, with their team within the organisation as the recognisable project delivery ingroup.

5.2.3.7 Struggle/risk self-narratives (C14)

Conflict in the workplace was observed in all participants through terminology of struggle, battle and risk. In Beech & Johnson's (2005) study of organisational change, a streetfighter metaphor was used to capture the 'heroic tough guy' who was also developing an identity as a nurturing leader. There were elements of the streetfighter in eleven of the participants. Streetfighters were in general fighting for investment or status for their team. The participants' reported heroic struggles were either; successful and included an expressed satisfaction in how the battle had been won; or ongoing. Having sole responsibility for IT led to a sense of isolation, resistance identity (Lamb & Davison, 2007) and battles for group status (for example, Turner, 1985) with IT forming a less dominant part of a business focused group. For Graham, Ross, Steven and Hazel the risk of IT infrastructure outage or data governance failure were burdens to be shouldered alone, with the risk of alerting senior management being seen by Graham as "likely to cause conflict." Having to argue for the introduction of a new technology, participants in general were observed to be placed in the role of risk taker. However this did not always sit comfortably with organisational identity. For example, Steven said that suggesting improvements in his business meant he was "damned if I don't, damned if I do." The risk of not investing was also observed and external consultants were used to reduce individual risk.

James' battle was based on retaining his development team in the face of outsourcing (Gunz & Gunz, 2007; Hickson et al., 1971; Grimshaw & Miozzo, 2009). Beech & Johnson (2005) found strategic change disrupting identity and identity work being undertaken to conform to the organisational narrative of change. Uncertainty through periods of restructuring and organisational change was a theme that emerged from the life narratives. For some a good fortune narrative was observed, for others a battle for position within the new structure was described.

Some participants, at times, clashed with their managers, especially when they thought that the line manager was not supportive of their work or was not interested in the IT function. For example, Graham, Steven and Julie at times had line managers with these characteristics.

Identity work observed included using a new vocabulary for emails intended by Graham to support recognition within his organisation as an expert in an area new to the management team.

Others experienced identity conflict working for an external provider of services in situations where they were embedded in a client organisation, with observed salience in their skills-based identities, but with less of a sense of organisational identity commitment. One participant commented on a member of staff being summarily dismissed from a client for "being too honest." Anderson-Gough et al (2000) found that client discourse for employees of the big accountancy firms downgraded 'notions of independence and public service' while marginalising non work-related activity including family life. A heavy weight of expectation was experienced by these participants; an expectation of professional behaviour, a high skills level, a high level of commitment and an expectation they would represent good value for money to the client.

5.3 Theoretical interpretation: in consideration of the Process Model of Identification

Identity construction and identity work as observed through the participants' life narratives have been discussed in relation to existing literature. Identity construction for this group has been found to be a complex and dynamic overlapping of organisational, technical skills-based and leadership identities. Identity adaptation is characterised largely by self-development, developmental networks and narratives of struggle and risk with less emphasis on role models and possible selves. This section relates these findings to Ashforth et al.'s (2008, 2014) Process Model of Identification, as first introduced in Chapter 2, and proposes an interpretation of the Episodes of Emulation and Affinity to encapsulate the participants' experiences of situational identity construction and identity work in this study.

Briefly, Ashforth et al.'s (2008) theory posits that identity adapts through episodes of emulation triggered by organisational sensebreaking and sensegiving. The sensebreaking and sensegiving provide insights into expectations of thinking, feeling and acting as a member of an organisation. Multiple iterations are anticipated resulting in new identity narratives. Affinity on the other hand is an individual's recognition of alignment with the organisation's identity and leads to identity consolidation.

An interpretation of this process model can be proposed for episodes of identity work as observed in this group of research participants. In Ashforth et al.'s (2008) theory, examples of episodes of emulation as triggered or influenced by sensebreaking activity included joining the organisation, encountering significant organisational change and a change of roles. In this study sensebreaking can also be said to include times when participants had responsibility for introducing new technology. Sensebreaking was observed when participants were building and presenting cases for IT investment and thereby placed in a position of competition within their organisations. At these times participants were observed to identify strongly with their teams who were responsible for implementation. In this study, examples of new technology sensebreaking led to struggle and risk narratives with participants describing being placed (or placing themselves) in a position of conflict with their organisations or in opposition to their colleagues. Sensemaking in these periods included seeking technical support, self-development, and status seeking narratives which together created the conditions for a new identity narrative to emerge. As such, this process model has the potential to explain the emergent and dominant identity adaptation themes to emerge from the life narratives.

Ashforth et al. (2008) theorised that these episodes of emulation are followed by episodes of affinity during which sensegiving 'reinforces rather than revises existing narratives' (p. 346). Sensegiving for these participants was observed to be organisational recognition of project outcomes and narratives of project success.

All participants had had to present business cases for investment and experienced, as a result, episodes of emulation which were caused in general by conflict between competing groups. Affinity was generally observed to occur when participants were vindicated in their decisions through narratives of organisational recognition and gratitude. To test this interpretation of the Process Model of Identification, the experiences of five participants are considered below.

Julie: an episode of emulation was observed when Julie described making a case for significant investment in application development and mobile devices to support hundreds of service users. Sensebreaking activity included building and presenting the case while competing business users were questioning the prioritisation of this work, seeing it as frivolous and expensive. Sensemaking involved rehearsing the

arguments directly to users who would experience the benefits of the project and this in turn helped her regain her sense of alignment with business imperatives. Sensemaking was also observed to include downplaying other areas of the business.

Graham: Graham's organisation questioned the need for investment in robust data governance policies. This sensebreaking activity placed him in conflict with others on the management board. Graham was forced into a conflict situation and, as in Julie's case, this was observed to lead to him criticising other areas of the business and expressing faith in his team. Sensemaking included describing a well-received professional business case, rehearsing his technical knowledge of the risks to the business of not adhering to data protection legislation and drawing on the skills and knowledge gained on the course. An episode of affinity was observed when Graham recognised that his managing director had started to use Graham's vocabulary of data governance in his subsequent emails.

Lindsay: in Lindsay's case, when presenting a case for a technical solution, she held firm when her stance was questioned. Following successful implementation (described as a "battle" and "struggle"), an external request for her advice on implementation elsewhere led to an affirmation of her identity as a technical expert.

John: When John moved into an IT management role his area experienced a prolonged period of underinvestment. Organisational sensebreaking arose when the IT infrastructure was challenged by a new director. John used external technical help and ingroup identification with his IT team to make sense of the situation and the conflict between his organisational identity (as challenged by the new director) and his identification with his sub-unit. The episode of emulation was completed when John managed a period of investment through distributed leadership and a consideration of service users leading to a new identity as a competent leader. He experienced an episode of affinity when he was later promoted to head of the new IT section following a prolonged merger and a success narrative emerged.

James: James introduced a new technology into his organisation. Sensebreaking activity included the organisation's urgent need for new web capability and subsequent reliance on James's team. His line manager questioned him over the choice of technology and James had to fight his corner. Sensemaking activity included using comparisons with similar initiatives elsewhere as having taking longer to develop. An

episode of affinity arose when James was bestowed with a nickname used across the organisation that alluded to his expertise with the technology and his close association with it; an acknowledgement of identity as a technical expert.

Sensebreaking for this group of participants included role changes, external challenges and a change in organisational prioritisation of the IT function. Sensemaking included self-development, narratives of struggle and conflict, and seeking external support for their position. Returning to Alvesson & Willmott's definition of identity work as 'interpretive activity involved in reproducing and transforming self-identity' (2002, p. 627) and to their observation that people are continually 'forming, maintaining, and strengthening or revising' their identities, the participants were observed to be undertaking identity work frequently as new technologies and consequent legislation and organisational policies emerged. This observation constitutes a tentative new interpretation of Ashforth et al.'s Episodes of Emulation and Affinity as coinciding with, among other factors, technological change within organisations. Emulation occurs on the introduction of new technology, normally spearheaded by the IT lead. At times this was observed to be uncomfortable and involved identity conflict between organisational identity and leadership and skills-based identities. In many life narratives such an event introduced risk and conflict with the organisation, however the change was often followed by an episode of affinity when the technology was embedded and the success of the work recognised.

The model can be extended through a proposition that leadership identity and behaviour has been observed in this study to curtail the episode of emulation and, through narratives of success, transition towards affinity. Affinity was observed in this participant group through status seeking narratives and renewed salience of their organisational identity.

For this participant group, these episodes were regular and occurred frequently as new technologies emerged (recent examples included cloud technology, mobile technology and the introduction of virtualisation services). Completion of the emulation cycle was facilitated at times through seeking external technical support. Leadership identity was enacted variously through pride in building well-reasoned business cases, moving from demanding to influencing, experimenting with a new vocabulary and practising a distributed leadership style. The interpretation process involved reflexivity

which acted as self-verification with participants observed to be making sense of projects retrospectively.

5.4 Retroduction: candidate mechanisms impacting identity construction and identity work

This section considers retroduction as a means of trying to explain the factors behind the identity construction and identity adaptation that has been observed and described above. Retroduction as described by Bhaskar (2014) involves 'imagining a model of a mechanism, which, if it were real, would account for the phenomenon in question' (p vii). A phenomenon is essentially an observable event and in this study the main phenomenon observed was the lack of identification with the IT profession as evidenced both through identity construction and identity adaptation.

In the case of identity construction, participants were observed to have identity commitment to an organisational identity, a technical skills-based identity and leadership identity. In the case of identity work, identity adaptation was impacted by the lack of commitment to an IT professional identity and participants' consequent reliance on seeking external help, creation of struggle and status-seeking narratives in ways that varied depending on their context and self-definition as adaptable professionals.

Constituting the real layer of critical realism, emergent technology, public sector restructuring, private sector expansion and contraction, globalisation, government policy and changes in the roles created by organisations had all impacted on the participants to a greater or lesser extent.

Five candidate mechanisms are explored below. The first considers directly the lack of identification with a professional body. The second reflects on the impact on participants caused by the lack of prototypical IT leaders. Participants navigated the IT jobs landscape, with opportunities and challenges both mentioned in the life narratives, so the nature of the sector is considered as the third candidate mechanism. Suspicion of IT spend within participants' organisations was raised so the impact of high profile IT project failures is then considered as the fourth mechanism. Finally, the rate of technological change is considered as it impacted on the participants' life narratives.

5.4.1 Mechanism 1: An underpowered professional body for the IT profession

The essential characteristics of a profession can be defined as a common set of professional standards, values, autonomy and prestige (Monteiro, 2015) with the professional body acting as the 'body of [the profession's] unity, the face of its identity, the voice of its authority, the guardian of its integrity and the prophet of its future' (p. 119). Established in 1957, the British Computer Society is the professional body of the IT profession in the UK. The BCS can be shown to meet the expectations of a professional body in terms of professional standards, values and autonomy. The BCS defines professional standards through granting chartered status to applicants (for example, Chartered Information Technology Professional, CITP) and recognition of a skills framework (Von Konsky et al., 2008). To support role and skills identification the BCS promotes the use of the Skills Framework for the Information Age (SFIA) which was developed to provide a common language for the IT industry with a view to identifying the spectrum of roles. There has not yet been much interest in the framework, as evidenced by its absence in IT job adverts, and none of the participants in the study mentioned it. Instead, progression was recognised through role titles such as assistant, officer and manager. Professional values amongst computing graduates are established through the granting of university course accreditation which is incumbent on evidence in the curriculum of legal, social and professional issues. Global trends in accreditation are considered to be: a clarification of the definitions of disciplines; a unified approach to accreditation; and finally a focus of graduate skills through continuing professional development (Reif & Mathieu, 2009). The first of these, clarification of definitions, has been requested by employers who are increasingly confused by the proliferation of course titles which have emerged as the discipline has expanded and specialisations emerged from computer science to, for example, software engineering, security and games. In the UK the Quality Assurance Agency is currently consulting on a new computing benchmark with a publication date in 2016 (QAA, 2015). The second, a unified approach, was the aim of the Seoul Accord which was signed by eight national professional bodies, including the BCS, in 2008. However the challenge remains that it is only one of seven agreed frameworks (Bacon & MacKinnon, 2010). Finally, in terms of continuing professional development, although the focus on graduate skills has been taken up by the BCS through organising training courses and issuing publications, in general, specific vendor

training has been perceived by graduates as having greater value for employment prospects.

In terms of autonomy, the BCS, in common with other professional bodies, operates as a membership organisation and is run by a board of trustees. However, Monteiro's (2015) final category, prestige, is problematic. The IT profession could be said to lack prestige. To be effective, professional bodies need an authoritative voice. With 1.3M jobs in IT in the UK (Office for National Statistics, 2014) and membership of 70,000 only 5% of IT professionals are members (by comparison, accountancy can claim 14% from the same source). According to the National Careers Service (2014) most accountancy jobs advertised require chartered status while very few advertised IT jobs require chartered status. Only one of the participants was a member of the BCS and he had questioned whether this was worthwhile for him. Two others knew of the BCS but had not seen the value of membership, relying instead on self-development and product-based training.

Although IT professionals are generally highly skilled, there remain low barriers to entry to the profession. Using data published in the 2001 Employers Skills Survey, employees in computer services have the highest mean skills score across all science, engineering and technology industries (Mason et al., 2002, p. 11). However Donnelly et al. highlighted 'loose controls on entry into IT occupations' and observed that only a minority of graduates hold a qualification in computer science (2011, p. 101). This is largely explained by Donnelly et al. as due to the falling numbers of computer science students (from 27,000 to 13,000 between 2001-2007) but also by the fact that 57% of IT graduate recruiters favoured recruitment of graduates with client-facing capability over technical skills (e-skills, 2011), leaving the door open for graduates from other disciplines.

The main challenge for the BCS is the lack of employer endorsement, as evidenced by the lack of chartered status or membership as a requirement for job applicants. For the accountancy, surveying, civil engineering and medical professions, chartered status is a requirement for a job as a professional, ensuring an agreed level of competence. Employers in the IT profession have historically not required chartered status for professional level job holders. Being a relatively new profession may provide the answer to this phenomenon which is not observed in other, more established

professions, but it may also be related to the inability of employers to agree that the BCS is accrediting the right course curricula or that the profession has a fully agreed set of standards.

5.4.2 Mechanism 2: Lack of prototypes

Studies have related the construction of professional identity to role models whereby the characteristics of the role model are observed as a resource for identity work (examples include Ibarra, 1999; Ashforth et al., 2008). The participants were not observed to draw upon role models to any great extent.

None of the participants mentioned a line manager in their current role who had an established background in IT. Instead the following was typical: "I didn't really get much direction from the boss anyway cos he's finance." Identity work has been shown elsewhere (for example, Brooks et al., 2010) to include enhancing characteristics to become more prototypical members of the profession. In an absence of prototypical professionals, Rast et al. (2012) found less of a pull towards an ingroup and elevated support for non-prototypical leaders. Participants reporting to non-IT managers had fewer resources for identity work (for example, role models and prototypes) and were observed to describe their managers' lack of IT capability as negatively affecting their ability to promote their teams and the function of IT more widely within the organisation. Only Pete and James mentioned line managers who were conversant in IT. For James there was a frustration that his manager did not always make the right technical decisions. Positive leadership behaviours, when mentioned, were exhibited by non-IT leaders.

In particular the lack of prototypes was made worse for the female participants by the gender imbalance in the profession. The IT profession is not attractive to women in the UK (BCS, 2014) and gender imbalance was mentioned by two of the three female participants who highlighted the lack of females in IT. Considering primarily healthcare, Witz (2013) argued that professions reproduce 'professional men's own construction of their gendered self-image' (p. 2), finding gendered boundaries within the medical profession. IT is a new profession - however the gender imbalance means that the lack of female prototypes is likely to affect the resources available for identity work amongst female professionals.

The paucity of prototypical IT managers in the participants' organisations may have affected the way they constructed their professional identities. A lack of role modelling resources for identity work could be a contributing factor to the varied identities constructed and may partially explain the absence of an IT professional identity observed.

5.4.3 Mechanism 3: Nature of jobs in the IT profession

Participants were observed to undertake identity work in the context of restructuring, fixed term posts, perceptions of an undervalued status within their organisation, lack of investment in IT and new policies and legislation. The nature, including status and availability, of suitable IT roles was observed to impact on identity with participants' strong commitment to organisational identity.

For nine participants, roles within their organisations had changed due to restructuring and, for some, new roles created through re-structuring and merger had created opportunities where participants had been adaptable. For James the move into IT had been because "when I graduated a lot of the electronics industry in Scotland had hit a very big recession." Ian's move into IT had come about because "every job I had as an accountant, there was a significant IT element in it…but the switch pretty much happened by accident." Re-structuring through the economic crisis including voluntary severance had helped two participants move into new roles within their public sector organisations. For some however it was now difficult to argue within their organisations to recruit IT staff on permanent contracts leaving them with high rates of staff turnover.

It was not unusual for participants to have held a number of roles, moving on when the role had come to an end. The nature of project work with short term contracts had led some to opportunistic careers. Between roles, identity work was focused on technical skills development.

Outsourced and consultancy work led to long commutes for Andrew and Ian. The IT sector's recent move towards outsourcing and away from in-house development teams (for example, Grimshaw & Miozzo, 2009) was mentioned by five participants. For Andrew, outsourcing changed the nature of his organisational identity and impacted on his identity salience and he created a status seeking narrative based on being invited to join new projects and loyalty was closely aligned to project teams. James mentioned that within his sector, "very few places now have a development

team." Studies have shown feelings of powerlessness and vulnerability when working in areas prone to outsourcing (for example, Gunz & Gunz 2007; Hickson et al., 1971). Working within a global organisation was mentioned by Ian, Andrew and Adrian. Andrew and Adrian mentioned excessive workloads necessary to interact across time zones and having to adapt their leadership styles to suit local working practices.

Overall a picture of uncertainty of career progression within and outwith organisations emerged and may be a contributing factor in the lack of identification with the IT profession.

5.4.4 Mechanism 4: IT project failures

All participants had to justify IT spend and experienced a weight of expectations in return for project spending. Although the workforce is generally considered highly skilled there has been a number of high profile public sector IT project failures including the NHS National Programme for IT project which was abandoned in 2011 after costing £12.7bn. The project suffered from years of delay and made little progress, citing technical difficulties (Campbell, 2011; Sampson, 2012). Other examples include the benefits card project which started in 1996 and abandoned three years later as project outcomes could not be delivered within budget or timescale (National Audit Office, 2000). In 1999 the passport office oversaw a largely unsuccessful IT rollout (Cross, 2005). On investigation, Cross reported that the factors behind lack of success included: IT projects which were overly ambitious in scale, poor skills exhibited by software engineers, a lack of project management expertise within the civil service, the complexity of procurement and finally 'mission creep' caused by multiple stakeholders adding new requirements as the projects progressed (2005, p. 49).

General discourse impacting how the general public perceive a profession has been shown to affect the way an individual constructs their professional identity and negative press coverage has been shown to reduce self-efficacy (Allsop & Mulcahy, 1998, p. 803). Seven participants had had first-hand experience of expensive failures within their organisations. Participants reported that organisations rarely reflected on technology change projects to re-examine the return on investment or measure competitive advantage achieved and the impact on users or customers. The industry has been known to suffer from the 'bandwagon phenomenon' which sees companies adopt high profile innovations in an attempt to be seen to be keeping up (Swanson &

Ramiller, 2004, p. 560). The high cost of IT infrastructure and maintenance also has an impact on the way companies organise their IT functions and the influence that the IT department has within an organisation. For non-IT organisations, the IT function was viewed as providing a service and identity work was undertaken through interactions with users.

There was a perception that spend in other business units was easier to justify at times and this was related to suspicion of overspend within organisations and in wider public discourse. In some organisations the status of IT was low as evidenced by incoherent and frequently changing reporting lines and lack of management support for the IT function.

Negative media coverage has the potential to affect self-identification and reduce the prestige of a profession. Developing a strong commitment to an organisational identity reflected that the organisation, rather than the profession, was the dominant ingroup.

5.4.5 Mechanism 5: The rate of technological change

The introduction of new computer and information systems featured in all participants' narratives. The nature of IT in general, as an enabler to business development, impacted on self-identity and on the participants' relationships with technology users, with the rate of change of technology observed to impact on professional identity construction and adaptations. Examples included continual self-development of new technical skills, leading to identification as adaptable professionals. Examples of recent changes included the move to virtualisation, new web technologies and cloud technology.

At times when new technology placed participants in positions where their technical skills were challenged, participants cited an increased reliance on external technical experts. The need for change placed most participants at some time in conflict with their managers, peers and organisations. In leadership roles, introducing new technology led to ingroup narratives where the work of the IT team was praised and identity work included highlighting the differences between the nature of the IT team's work and other areas of the organisation which were described as less dynamic.

New legislation in construction, data protection, research funding and homecare with the need for further investment in IT systems had all impacted on the creation of new

opportunities and new roles. The changes were reflected on by participants, for example Graham: "with IT there's always something new", and Hazel: "things have all changed."

At times the desire to introduce new technology met resistance from users suspicious of job cuts. These suspicions were understandable as technology has played a role in reducing the numbers of jobs in the middle of the labour market (Sodah, 2014).

There was a perceived lack of direction and relevance from the IT profession, which was observed to lead to greater reliance on technical skills development based on products and product-based networking to reduce risk. Participants were placed in positions of arguing for, and making significant investments in, new technology and product-based networking activity was observed to be an identity resource to support decision making and reduce organisational identity risk (Beech et al., 2010).

The rate of change had less impact on the technical skills-based identity of the two pioneers who had lived through significant change and had a strong commitment to their skills-based identities, backing this up with narratives of problem solving and technical expertise valued by their organisations through track records of project success. The drifters had fewer resources for IT professional identity work and instead built resources for organisational identity based on the expertise they had brought from their previous field. Their approach to new projects was based more on reacting to pressure from users for new technology and projects were managed efficiently. The evangelists were enthusiastic about the possibilities of new technology and identity work was based on technical skills development and horizon scanning for future project opportunities. The traditionalists were observed to undertake technical skills-based identity work through close working with product manufacturers: however they expressed some wariness about big change projects. Previous project success was observed to be a resource for identity work to enhance expert status.

The rate of change of technology placed all participants in a position to have to argue their case and was at the root of most of the struggle and risk narratives which impacted on identity construction.

5.4.6 Analysis of mechanisms and outcomes

Five candidate mechanisms have been described above. These mechanisms are analysed below to explore potential relationships (Sayer, 1992; cited in Bygstad & Munkvold, 2011). Forward chaining of Mechanism X to Mechanism Y is denoted by MX -> MY and should be interpreted as MX influences the triggering of MY. In terms of influencing other mechanisms the dominant mechanism is the rate of change of technology so the forward chaining starts with this mechanism, M5. In each case the conclusion of the argument for each possible explanation is a synopsis of the rationale.

M5 -> M1: The rate of technological change makes the establishment of professional body standards problematic. Professional bodies at their heart have a core set of standards with examination of competencies providing a barrier for entry which acts elsewhere as a determinant for employment. For the BCS, accrediting courses and setting professional examinations is challenging as the accreditation criteria change frequently to keep up with advances in new technology. *Synopsis 1: The rate of change in technology influences the effectiveness of the professional body.*

M5-> M3: The rate of change of technology impacts on the nature of jobs in the IT profession as the introduction of new computer systems or the introduction of a new technology necessitates swift access to a pool of IT staff with specific skillsets. Outsourcing, offshoring and fixed term contracts have been used to reduce labour costs and plug skills gaps. *Synopsis 2: The rate of change of technology influences the nature of jobs within the sector.*

M5 -> M2: The expansion of the IT workforce caused by organisations adopting new technology means IT leaders have been drawn from different disciplines. This, combined with the gender imbalance, has led to a lack of IT professional prototypes. *Synopsis 3: The rate of change of technology can be said to provide a context for the lack of prototypes in the industry.*

M5 -> M4: Ambitious responses to the adoption of new technology, for example, personal security technology, can lead to the failure of expensive IT systems and its ubiquitous nature leads to public discourse of incompetence and expense. *Synopsis 4: The rate of technological change impacts on IT project success due to over-reliance on unproven technology.*

Having considered the impact of mechanism M5 on all other mechanisms, M1-M4 are now considered.

M1 -> M3: The lack of a strong professional body means that there are low barriers to entry to the IT profession which in turn impacts on the nature of jobs, enabling employers to outsource and offshore work to less well qualified staff. This in turn affects graduate level employment.

M1 -> M2: The professional body for the IT profession is not seen as prestigious and the industry itself is not generally viewed by either parents or school pupils in a positive light when it comes to making early career decisions, as evidenced by relatively low numbers of applications to study computing and IT at school. The prestige of the profession is likely to impact on ability to recruit prototypical IT professionals.

M1 -> M4: The low professional body membership numbers combined with the lack of employer demand for applicants with chartered status is likely to impact on project failure. When complex IT projects draw on staff with shorter vendor-supported training as opposed to longer university degree courses which lead to chartered status, the interactions between systems may be less well understood. In turn this could lead to an increased chance of failure to meet requirements on functionality or timescales. Also a lack of status of IT staff within an organisation, as might be experienced by those without chartered status, may lead to reduced potential to influence project decisions.

M2 -> M4: The lack of prototypes has an impact on professional identity which in turn could impact, through not having sufficient models of project success, on project failure.

M3 - > M2: The nature of jobs, including a lack of job security, affects the prestige of a profession and this in turn has the potential to impact on the lack of prototypical IT professionals. An insecure talent pipeline could lead to individuals being recruited from non-IT disciplines rather than through more regulated entry.

M3-> M4: The nature of jobs, including low prestige as an employment sector, is likely to have an impact on project failure through reduced ability to attract highly qualified applicants in to the sector. Although the Universities and Colleges Admission Service (UCAS) entry tariff is not a proxy for prestige, an examination of UCAS average tariffs

using a representative sample of 15 universities that offer both computing and maths degrees, shows that the average UCAS tariff for computing is 449 points compared with an average for maths of 466.

To amalgamate these relationships, forward chaining can be used (Bygstad & Munkvold, 2011). The rate of change of technology has the potential to cause each of the other mechanisms and holds the greatest explanatory power. Using it as a starting point, Figure 5.2 captures the forward chaining starting with the relationship between M5 and M1:
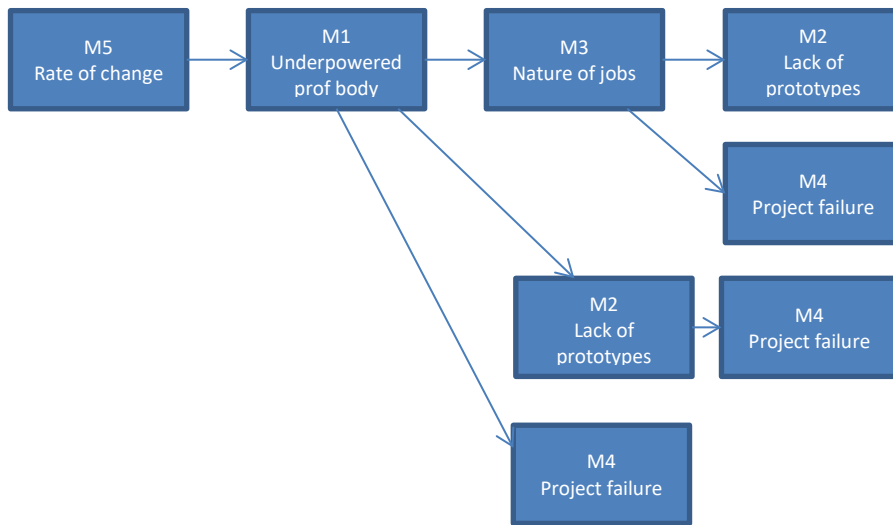
Figure 5.2 M5- M1 Forward chaining

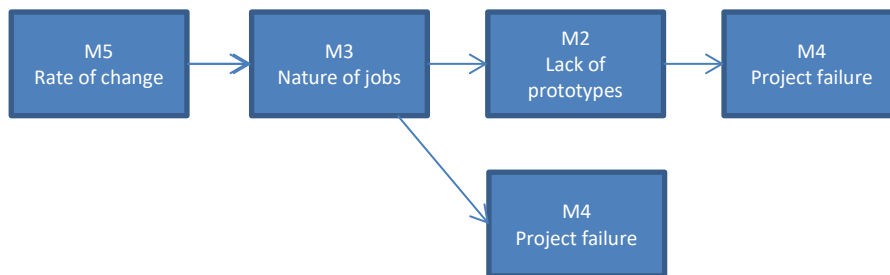Figure 5.3 is the forward chain for M5 impacting on M3:

Figure 5.3 M5 - M3 Forward chaining

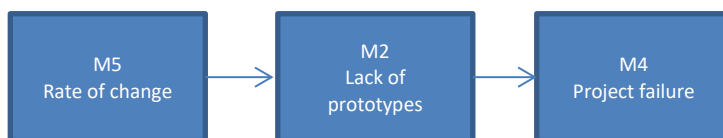Figure 5.4 is the forward chain for M5 impacting on M2:

Figure 5.4 M5- M2 Forward chaining

Finally, Figure 5.5 is the forward chain for M5 impacting on M4:
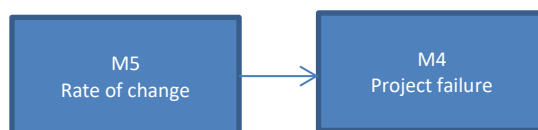

Figure 5.5 M5- M4 Forward chaining

In practice there is a constant interaction between causal mechanisms. Backward chaining can be observed, for example between M1 and M4: the public discourse on IT project failure has the potential to impact negatively on the profile of the professional body. Likewise, backwards chaining is possible between M2 and M1, where the lack of prototypes has the potential to impact on the ability of the professional body to attract new members. In a less direct way, the nature of the jobs in the profession impacts on the ability of the professional body to build up membership and influence.

The mechanisms and inter-relationships described above have the potential to influence the construction of an IT professional identity. This may be the future not just for the IT profession but for other professions where there has been erosion in some areas caused, for example, by para-legal and para-medical roles (for example, Robinson, 2014). The debate on the future of the professions continues (for examples see Abbot, 1998; Larson, 2013; Evetts, 2013) with advantages of membership whereby those 'on the inside are accorded a (variable) degree of regard, some status and some reward' (McDonald, 2006, p. 13). Identity work to achieve status and external recognition was observed in this study in different ways and to different extents based on organisational context. However none of the participants looked towards the professional body for regard.

5.4.7 Towards validation of explanatory power

Bygstad & Munkvold (2011) recommend that an attempt to validate explanatory power should involve treating a proposed mechanism as a candidate for explanation with further research designed to collect and analyse further data with the aim of validating the mechanism 'until closure is reached' (p. 7). The model for a mechanism with explanatory power for the phenomenon of weak professional identity is based on the inter-relationships between the five mechanisms described above. The mechanism with potential for the most causal power is the rate of change of technology which has the capacity to disrupt identity through sensebreaking iterations leading to a complex mix of organisational, technical skills-based and leadership identities. The rate of technological change has been established as a modern phenomenon with no prospect of slowing down. The 'technology mudslide hypothesis' coined by Christensen (2013) describes the challenge for IT companies as follows: 'Coping with the relentless onslaught of technology change was akin to trying to climb a mudslide raging down a hill. You have to scramble with everything you've got to stay on top of

it, and if you ever once stop to catch your breath, you get buried.' Technology developments are a fact of modern life so recommendations as a result of this study must focus on that which can be changed or at least better understood.

5.5 Conclusion

The discussion in this chapter drew on the process of critical realist analysis with its key pillars of theoretical re-description and retroduction. The construction of identities based on organisational, technical skills-based and leadership identities together with emergent themes in identity work, including narratives of struggle and risk, led to a reconsideration of Ashforth et al.'s (2008, 2014) Process Model of Identification and the proposition that Episodes of Emulation and Affinity are linked in this group of participants to the introduction of new technology.

The participants in this study were observed to be acting as agents in acts such as technical skills identity construction and some aspects of identity adaptation. They were constrained at times by structure, for example, substantial technological developments impacting on their professional identity. Examples included concerns over de-skilling, expectations of project delivery and outsourcing.

No identification with the IT profession was observed and this was the main phenomenon to emerge. To analyse the data, retroduction was used in an attempt to establish the causal powers of the real strata of the critical realist ontology. Overstating the identification of causal powers leads to one of the criticisms of the critical realist approach which is that the intransitive domain has been assumed rather than proven (Mingers, 2004). This refers back to Hume's "is-ought to" problem which is that it is not obvious how to get from a description of what *is* to a statement of what *ought to be* (Benton & Craib, 2011). So, the intransitive domain which considers what the world must be like for the phenomenon of weak IT professional identity to be observed cannot be proven. Instead the discussion attempted to yield possible explanations.

Overall the participants in this study did not demonstrate commitment to an IT professional identity. This has been analysed and the candidate mechanism with the strongest explanatory power identified as the rate of change of technology. The impact on the participants will be explored through re-visiting the research questions in the next chapter.

Chapter 6: Conclusion

6.1 Introduction

In order to uncover evidence of IT sector challenges and the way these are experienced by IT professionals, this study was designed to explore identity construction and identity adaptation as observed through life narratives. Sector challenges include high profile IT project failure; employer-reported skills gaps; high graduate unemployment rates; and challenges in school and university recruitment into computing and IT.

Previous chapters contained the literature review, the findings of the study and a discussion of the findings to re-locate and analyse the findings within the literature. In this chapter the research questions are re-examined and the contribution of the work is considered. Observations are made and recommendations for action proposed for the IT professional body, employers and government. Finally, further research is suggested.

6.2 Revisiting the research questions

Rich personal accounts of working life experiences can be used to gain insights into the structures, interactions and effectiveness of an industry sector. Identity Theory holds that we have multiple identities and our identity in the workplace affects how we behave at work. Identity and Role Theory have been used extensively, though not exclusively, for research into professional identity to examine self-conceptions as they affect, for example: behaviour, transitions into and through sectors and decision making. Social Identity Theory is an alternative, though somewhat overlapping, theory of self-identification studied in the main through group interactions. An open life narrative approach was used in this study to allow for observed behaviour emerging from both theories. Many studies have uncovered strong identification with professional groupings that cross institutional boundaries or found evidence of conflict between professional and organisational identities. The experiences of individuals working in the IT sector have not yet been examined widely and the sector itself is relatively new.

To appraise the effectiveness of the study in addressing the research questions, each question is considered in turn.

6.2.1 Research question 1

How do professionals transitioning to leadership roles construct their professional identities?

Four metaphors (Pioneers, Drifters, Traditionalists and Evangelists) were introduced to capture the routes into the IT profession and participants in all four groupings were observed to construct aspects of organisational, technical skills-based and leadership identities. Table 6.1 summarises the salience rank order of identification observed. Where self-identification was negligible, no ranking is given.

Name/ Salience Rank Order	Organisational Identity	Technical Skills-based Identity	Leadership Identity	Metaphor
John	1	-	2	Drifter
Lindsay	1	2	3	Pioneer
Hazel	1	2	3	Pioneer
Ian	-	-	1	Drifter
Steven	1	-	-	Traditionalist
Pete	1=	1=	1=	Traditionalist
Sean	1	2	3	Evangelist
Andrew	1	2	3	Evangelist
Adrian	1	2	3	Evangelist
James	1	2	3	Evangelist
Graham	1	-	-	Evangelist
Ross	1	-	-	Evangelist
Michael	3	2	1	Traditionalist
Julie	1	-	2	Drifter

Table 6.1 Rank Ordering of Identity Salience

For 12 participants, in their current roles, organisational identity was observed to be the most salient. The development of technical skills had supported the Evangelists move into IT roles so in general their observed salience ranking was organisational then skills-based identities. The Drifters did not self-identify as skills-based practitioners: however nor did two of the three Traditionalists. With a formal IT education Steven and Pete might have been expected to self-identify more as skills-based practitioners, however, their roles within their organisations were service delivery oriented in non-IT organisations which might have impacted on their self-identification.

Tensions arose when organisational identity was in conflict with technical skills or leadership identities and a dynamic picture of identity construction emerged. Salience was observed to be based around organisational structures and project work. The

study found IT workers to be skilled and adaptable, undertaking considerable skills self-development to maintain their identity position as specialist practitioners. None of the participants constructed an identity as an IT professional, furthermore membership of the professional body was not linked to prestige, value within their organisations or indeed found to have relevance to their work or status. This in turn influenced their identity positions and the study found the participants to be committed, in the main, to organisational and technical skills-based identities. Maintaining a skills-based profile took considerable effort and at times external help was sought to consolidate identification as an IT expert. Moving into leadership roles, the IT professionals in the study relied on the construction of organisational identity and experienced conflict as they reasoned for new investments in technology and built internal IT ingroups based on project delivery. In many organisations they lacked prototypical managers, peers and role models and were found to be developing their own leadership styles in the absence of prototypical IT leaders. The construction of a leadership identity was problematic when the participants' technical skills placed them in conflict with their organisational identity and their value in providing good service delivery for users. In general this led to project success narratives being used to consolidate leadership identity construction while narratives of struggle and risk reflected identity conflict. Reporting structures were a significant factor in narrative construction with many participants reporting to finance or human resource directors and reflecting, as a result, that the IT function was not fully recognised.

Most participants expressed value in problem solving and in particular helping users. At times these values were challenged by organisational imperatives including the need for leadership activity and lack of investment. When challenged, ingroup behaviour was observed with participants firmly associating with the technical team as an ingroup and the consequent narrative placing them at odds with their organisation. Good fortune narratives, used to reveal modesty in successful careers, were also observed with many participants, especially the Drifters, constructing a story of good luck rather than identifying as skilled and deserving professionals.

6.2.2 Research question 2

Where identity work is undertaken, what factors lead to identity adaptation?

All participants were observed to develop co-existing professional identities based on organisational identity, technical skills-based identity and leadership identity. Identity work was contingent on varying identity commitment as roles changed, as projects were initiated and completed and within their context, specifically the nature of their organisations. There was some evidence of the use of role models where participants were, in particular, thinking about leadership behaviours. The role models identified generally reflected the lack of prototypical leaders in technical roles and were drawn from elsewhere in the organisation. Developmental networks were used to identify employment opportunities but not extensively used for identity work. However product focussed networks were used to reduce the risk associated with the introduction of new technology. Experimenting with possible selves was observed as a means to gain confidence and consolidate an identity position, for example in a new role enacting a more confident version of themselves. For all participants identity work included considerable self-development to retain expert status. At times this was consolidated and sometimes challenged through support from an external expert. Some participants recognised that while leadership identity work distracted from their technical capability, narratives of struggle and conflict supported an adapted identity as a leader within their organisation. The conflict was triggered in the main by the necessity for new technology projects. These experiences led to consideration of Ashforth et al.'s (2008, 2014) Process Model of Identification. Identity work included creating struggle and risk identity narratives which they used variously to consolidate identity as an IT expert when placed in conflict with their organisations over the adoption of new technology and systems. These struggle and conflict narratives were interpreted as episodes of identity adaptation as initiated by organisational sensebreaking whereby introducing cases for investment in IT or project work triggered an episode of emulation.

Narratives of status were also used in identity adaptation, for example, projects and personal interventions that resulted in saving the organisation time and money through technical expertise or providing an improved service to users.

Some participants faced identity conflict when moving from skills-based roles to leadership roles and there was a stated reluctance to move too far away from activity reliant on technical skills.

In identity adaptation, an IT professional identity, as might have been exhibited for example through membership of the IT professional body, chartered status and developmental interactions with other IT professionals, was not observed and did not form part of recognisable identity work or feature in identity adaptation. While most participants placed value on technical skills, there was no sense of belonging to a body of technical professionals. Instead identity work was observed in the main to consolidate organisational identity after a period of change or to strengthen leadership identities through building their team's self-categorisation as an ingroup.

6.3 Contribution to Knowledge

This thesis makes a claim for four findings to add to the existing body of knowledge. The research questions and subsequent study contributes to existing knowledge in the following ways:

6.3.1 Identity construction

The study found the participants constructing identities which had in the main three components: organisational identity, identification as a skills-based practitioner and leadership identity. Although the life narratives were examined closely there was no evidence of identification with the IT profession, for example identifying with a membership-based professional body. This finding contrasts with professional identity studies researching professions that are characterised by more widely established professional bodies with recognisably higher barriers to entry. This phenomenon was explored in Chapter 5 and constitutes a new insight into IT professional identity construction.

6.3.2 Identity adaptation and episodes of emulation

Locating the study within the existing theories of identity adaption, in particular to Ashforth et al.'s (2008, 2014) Episodes of Emulation, offers an interpretation of their theory for a new professional group. The study interprets their theory in the context of the IT sector to suggest that the rate of technological change introduced sensebreaking into relatively stable identity positions triggering episodes of emulation

leading to adapted identity. Identity adaptation observed in the participants was supported by struggle narratives emerging at times when organisational identity was challenged through the adoption of new technology. This adoption constituted organisational sensebreaking into ongoing organisational identity positions. The struggle narratives were generally constructed to reflect organisational resistance to change and constituted sensemaking. Episodes of Affinity were observed through narratives of project success.

6.3.3 The use of life narratives for a study of professionals in the IT sector

Life narratives have been used in professional identity studies: however this research method had not before been adopted for research participants drawn from the IT sector. Applying this research method to a new sector has enabled the participants to reflect on the full span of their professional lives, including their motivations for embarking on a career in the IT sector. At times the participants articulated task-focused project objectives and, as a result, the narratives have captured a time of substantial change in the IT sector, from early days in computing and the automating of traditional manufacturing and business process systems right through to IT leadership in the context of global outsourcing giants. 'Life stories mirror the culture wherein the story is created and told' (McAdams, 2008, p. 246) and so the collection of the life narratives is an example of a cultural text, constituting a rich personalised picture of the evolution of the IT sector in Scotland over the past 30 years.

6.3.4 The identification of metaphors to capture routes into the IT sector

Thematic coherence is achieved through the 'capacity to detect the presence of unifying themes or metaphors across experiences' (Singer et al., 2013, p. 574). Through a close examination of the transcripts, the following metaphors were developed to describe the essence of identification with the IT sector: pioneers; drifters; traditionalists and evangelists. Table 6.2 shows the features associated with each metaphor.

Metaphor	Characterisation
Pioneers	An early entrant to IT with a long career in the profession.
Drifters	Drifting into IT through non-IT routes, when the opportunity arose, bringing in skills and experiences from another sector.
Traditionalists	Coming to computing through some formal education in computing or IT.
Evangelists	Agency influencing a move into computing as a positive destination from within a non-computing role in an organisation.

Table 6.2 Metaphors

The metaphors were used initially to capture the routes into the profession, although attitudes and self-identification were shared to some extent by each category.

6.4 Observations for the IT profession

In considering a critical realist approach to management research, Alvesson and Deetz (2000) suggested three overlapping tasks: insight, critique and transformative redefinitions. In particular they suggested that the goal of transformative redefinition relates to finding new ways of working which are mutually beneficial to individuals and organisations. Considering these overlapping tasks, the insights of this study were provided by the fourteen participants through their life narratives; the critique involved consideration of how the empirical evidence related to existing theories and published literature with candidate mechanisms identified to explain the phenomenon of weak IT professional identity observed through the life narratives. The examination of an industry sector in turmoil provides the basis for the possibility of transformative redefinition. The mechanism with the strongest explanatory power identified was the rate of change of technology. As a fact of modern life, recommendations for action must be found elsewhere. This section considers the implications of the study's findings for the IT sector and are categorised as recommendations for the professional body, for employers, for government policy and for universities to collectively address the challenges facing the IT sector. The candidate mechanisms, as detailed in section 5.4, addressed by the recommendations are referred to as M1 to M4.

6.4.1 Recommendations for the professional body, the British Computer Society

The advantages of a strong profession for IT workers include a collective voice which can: influence policy; provide advice and training; and campaign for high status jobs reflecting the complexity of the work and the high levels of both competency and responsibility involved. The BCS itself recognises the value of standards 'in developing employees to provide a greater service at every level, and in helping to retain those employees through recognition, and fostering a sense of accomplishment' (Atkinson, 2014) . The UK government, concerned in part about the relatively high level of computer science graduate unemployment of 12% compared with the overall graduate unemployment rate of 8% (HESA, 2014), asked Sir Nigel Shadbolt to lead a review of the process of course accreditation in March 2015. The review offers an opportunity to establish a stronger profession with more recognisable routes into IT roles and clearer career pathways associated with expertise. The key to this outcome is to work closely with industry and public sector employers with a view to recognition of professionalism as would be demonstrated by requiring chartered status, BCS membership, sustained continuing professional development or other professional indicators in job adverts. The aim of the review is to bring employers and universities together 'to best ensure accreditation is as valuable as possible to all stakeholders - in particular the individual who wants a great education and a great career' (Fletcher, 2015). The focus is likely to be on finding ways of ensuring accreditation of university courses takes account of current employer requests for skills and capabilities. Analysis of professional identity should prompt an assessment of the role of the BCS in the working lives of IT professionals in the future.

The British Computer Society should:

- Continue to work closely with employers and universities on the new accrediting framework, looking towards more established professions to find evidence of effective ways of working (M1);

- campaign for government support to insist on chartered status to work on high profile and high value projects (M1, M3, M4);

- through the BCS Academy, raise the prestige of computing, increase membership and increase numbers of chartered professionals (M1, M2).

6.4.2 Recommendations for employers

The lack of employer endorsement for chartered status as evidenced through job adverts is a factor in the comparatively low barriers of entry into the profession. The profession is relatively new and there are many uncertainties through advances in technology and in new business practices. Project complexity and poor understanding of technology have led directly to project overruns and cancellations. In both private and public sectors, high expectations of business or user improvements associated with the introduction of new technology often remain unrealised. Employers have cited skills shortages and difficulties recruiting staff with the right experience.

Employers should:

- work towards the professionalisation of computing by: supporting employees to gain chartered status; requesting chartered IT professional status from job applicants; running professional induction programmes, skills development and leadership training (M1) ;

- continue to work with schools and the wider public to show the possibilities of IT and to encourage pupils to study computing to expand the talent pool (M2);

- reconsider, where appropriate, the balance of IT work between in-house teams and outsourcing and offshoring in recognition that entry level jobs are required to ensure sufficient candidates for roles that require experience (M3);

- improve sector attraction by rewarding staff with job security and staff development (M3);

- reconsider the reporting lines for IT functions to ensure decisions made about IT are well-informed and ensure the profile of IT staff in the business maximises the benefits of investments (M4);

- ensure IT project outcomes, as well as planned, are reviewed to learn for future projects and capitalise on opportunities to recognise positive impact (M4);

6.4.3 Recommendations for government

The most expensive and highest profile IT project failures are those undertaken by government departments. At government level, IT failure is perpetuated by a lack of reflection to explore what went wrong as new administrations move on to new projects with new technologies. Government policy has also provided a benign regulatory environment for outsourcing and offshoring which reduces IT jobs in the UK and undermines the development of local skills capability and capacity. In turn this adversely influences how the sector is viewed as a career destination.

The government should:

- for government-sponsored IT projects, reflect on the quantity of project work that is undertaken offshore and consider introducing a requirement to create high value jobs in the UK with consequent training and development of project staff (M3);

- ensure chartered professionals are employed on all ambitious IT projects and that reporting lines allow for technical ability and decision making to influence project management (M1, M2, M4);

- review large-scale and ambitious IT projects and share the findings widely to learn more about successful delivery (M4).

These recommendations have informed the review of course accreditation through inclusion in the stakeholder survey of summer 2015 and review meetings.

6.4.4 Recommendations for universities

The degree award remains the foundation of entry into the professions. Universities can create the conditions for a profession attracting highly qualified graduates through curriculum currency and alignment with the IT sector.

University computing departments should:

- Work with the BCS to ensure, where possible, all courses are accredited by the BCS and students are made aware of the benefits of student membership (M1, M4);

- Continue outreach work to schools and through public engagement events, to publicise computing to the most diverse audiences (M2);

- Engage with local, national and multinational employers to take a dialectical approach to IT sector concerns (M3).

6.5 Study Limitations

The main limitation of the study was that it was conducted on a relatively small and homogenous group. Fourteen interviews were conducted and all fourteen participants were drawn from the Masters course in Strategic ICT Leadership. This had the advantage of the participants being at a specific point in their careers and investing in their future career development through studying towards a Masters qualification. However it limited the spread of possible responses and located the study at a specific career junction for the participants.

All participants were at the time of interview based in Scotland so the study is limited in terms of geographical spread. Only one of the participants had had experience of working in IT outside Scotland.

The length of time spent on each of the life narratives was limited, although the potential was there for follow up interviews. The interviews varied in time between 42 minutes to 2 hours 20 minutes. There was recognition of the time pressures on the individuals who all had both work and study commitments. At times the narratives contained detailed specific situational information on task-focused projects. This meant that the time was not always used most effectively to explore identity; however this group of participants were comfortable explaining projects and their roles associated with project delivery.

6.6 Further work

A number of follow on studies can be identified that would contribute to the ongoing challenges within the IT sector. Within the IT profession, a study with a broader and larger sample might offer the possibility of exploring the reasons why professionals join the BCS and the value they place on that membership. Research into the impact

membership has on a wider sample of participants in their workplaces and through their careers could feed into the ongoing review of accreditation. Universities invest considerable resource into offering accredited degree programmes and a study of accredited degree programmes together with industry perceptions of job candidates could reveal more about any disconnect between university perceptions of the worth of accreditation and industry perceptions of graduates, with a view to improving the return on investment of course accreditation to the benefit of graduates.

If professional bodies lose their political support in an increasingly globalised world, the value of joining a profession with its consequent training (coupled in some cases with periods of professional practice and professional examinations) may become a price too high for individuals to pay, particularly within the context of increased university tuition fees. The teaching profession is in turmoil at present with the introduction of academies and the relaxation of teaching education for new teaching applicants so a wider study on the implications for professional bodies of current employment contracts would be of interest. A study comparing the findings of this study in other professional groupings, such as accountancy or medicine, would provide insights into the experiences of individuals in areas where professional bodies have been established over a longer period than in the IT sector.

Finally, this study could be repeated for a larger and more diverse group of participants, here and in Europe, the US and elsewhere, to explore more widely the experiences of being a professional in a global IT sector.

6.7 Conclusion

Self-identification as a professional affects workplace behaviour. How professionals self-identify, then, is likely to impact on, for example, how their values and ethics influence the workplace. Conversely, how they experience the workplace is likely to impact on self-identification. The aim of the study was to explore professional identity construction and adaptation as a means of understanding better, for this group of participants, their routes into the profession, their position within their organisations including internal and external networks, and their experience of transitioning to leadership roles in order to gain a better understanding of the challenges facing the sector.

Through re-visiting the research questions in this final chapter it was possible to review the contribution of this study. The study itself revealed that self-identification varied; however all participants showed commitment to an organisational identity. Most participants had invested considerably in technical self-development, and self-identification as a technical expert was observed. Identity conflict arose when organisational and technical identities were challenged and this led to struggle and risk narratives. None of the participants constructed an IT professional identity in the sense of belonging to or interacting with the professional body for IT, the British Computer Society. The lack of identification as an IT professional was observed in the life narratives and was in marked contrast to more established professions such as the medical professional or the legal profession. The implications for this were explored and recommendations made for improving the situation in the IT sector.

The contribution to knowledge hinges on four pillars: the finding that none of the participants identified as an IT professional; the interpretation of the theory of identity adaptation through episodes of emulation; the collation and use of life narratives for the purpose of this study; and the creation of metaphors to reflect the essence of routes to entry. Observations and recommendations were made for employers, the professional body and for government which would seek to address the sector challenges cited above.

Through consideration of these participants within the broader context of the IT profession in Scotland and further afield, it may be that the observed erosion of the professions has affected a newly formed and faltering IT professional body and that strong organisational identities and weaker professional identities is a phenomenon that will affect other professions in an increasingly globalised world. An alternative vision is that in future years the IT profession has a chance to become established, build its status and find IT practitioners and leaders more closely aligned with a prestigious IT professional body to the benefit of individuals within the profession. A strong professional body could have the potential to better equip professionals in IT withstand periods of organisational sensebreaking.

Identity is an ongoing project with the potential to improve working life for professionals. As the level of personal investment in education and training increases, for example through the introduction of tuition fees in England, making the most of

professional life should be a priority for individuals, organisations and governments. With the age of retirement increasing, people are predicted to experience a longer working life. As a result, how people identify as professionals may become increasingly significant to support not just career development but also wellbeing.

For the participants involved in the study, the IT professional body did not have an impact on their career decisions or on the construction of their professional identity. A strong professional body and consequent identification with a profession could have some benefits for the participants, their organisations and, potentially, activity in the digital economy of the UK.

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Appendix A: Life narrative prompts

I'd like to find out how you got into computing/ IT and explore some of your experiences. I very much appreciate your time to help with this research study.

1.   Can you start by telling me where you come from originally, where you went to school and your age (or when you started school)?

2.   Please tell me a bit about your education and how you made your early decisions about subjects?

3.   Were there any particular moments when you changed direction in your education? Do you remember what caused you to change?

4.   What do you think were the main influencers on your early decisions?

5.   Before we start thinking about your professional life, what do you understand by leadership? (if it helps, leadership has been defined broadly to include idealised behaviours and attributes, motivation of individuals through inspiration, consideration of the individual)

6.   How would you sum up your leadership style?

7.   Can you tell me about your first role in computing? (e.g. why you applied, what your job entailed, the nature of the organisation/ office, purpose of IT in the role)

<iterate for all roles>

8.   Can you tell me how you adjusted to your new role? Did you feel differently about yourself and your role in the organisation – and how did that come about (what factors contributed to a change in how you viewed yourself?)

9.   Did you receive training/ induction – how did that affect you in your new role?

10.   Did you have a mentor or coach? If so, how did they support you?

11.   If not, did you have a peer network? Or professional network (eg BCS/ external group)

12.   Do you think you were well suited to the role? What parts of the role did you feel most confident about?

13. Did you ever feel uncomfortable in your role? Do you remember what caused the discomfort?

14. What do you think could have been done to support you in your new role?

15. How did you experience leadership in this role? (in terms of being led and/ or leading). Did you experience good leaders? What made them 'good'? or bad – and why?

16. What do you think your organisation expected of the leadership role?

17. Were there any tensions between skills based work and leadership/ management expectations? (really driving at what factors contributed to you seeing yourself differently)

18. How much autonomy was there in your role – what sort of decisions were you involved in?

19. Were there any specific things that happened in your home or working life that led to you changing role? (within organisation or externally)

20. Did you face any dilemmas about changing role? *<end of iteration>*

21. Can you tell me a bit about your organisation and your current role?

22. In your current role, what aspects of the role do you find the most satisfying? Why?

23. Are there parts of your current job that you are less satisfied with? Why?

24. Do you have leadership experience in your current role? If so, can you think of an example where you found this rewarding?

25. Are there any tensions in your current role? Any times when you feel conflicted? Are you comfortable with your organisation's expectations?

26. Do you network within your organisation or externally?

27. Are you a member of any professional organisation? How do you use this membership?

28.   Looking back, have there been any times when you have really enjoyed your job –and have regretted a change in role? And why?

29.   Looking back, is there anything else you would like to say about what has influenced your directions?

30.   Is there anything that I haven't asked that you would like to mention?

Thank you for taking part in this research study.

Appendix B: Annotated notes

Notes from the pilot study

[Handwritten note at top:] Initially the themes were categorised [against?] the three RQs. Nvivo... establish validity of tool

RQ1: Empirical, construction of professional identity	• Strong sense of organisation identity, evidenced through considerations of organisation mission and strategic plans (org id V prof id - ??who finnish kumpula?) & values what college is trying to do *[handwritten: Kothe S1]* • Observed less value on technical skills, including "not rocket science", "exploded the myth" but also evidence of respecting the team, the IT consultant – though "not telling us anything we didn't already know" (not typical ingroup behaviour for professional – Turner?Hogg) *[handwritten: D1]* *[handwritten: leadership identity shaped]* a) Observed value placed on honesty (in particular with respect to dealing with team, being honest about his technical knowledge) (leadership ref??) *[handwritten: S2]* b) Recognised the importance of external signals & acknowledgement of position (e.g. leadership ref here??) *[handwritten: Kunda]* • Evidence of value placed on role models, especially "good leaders", mentioning good communications, listening, acting (ref??) *[handwritten: S5]* • Observed use of management development opportunities to consolidate identity (ref??ashforth?, Cascio?) *[handwritten: S3]* • Peer networking recognised – including peers encouraging his own development in roles (Sweitzer) *[handwritten: D2]* • Describes new role as "right place, right time" *[handwritten: S6]*

[Handwritten marginal notes:] check kumpula on how phase when org id experienced

[Handwritten marginal note:] authentic leadership

Transcribed and annotated notes from participant one

P1: Yeah, yeah I mean looking back on it I was very new to that role. I had been a
supervisor since 2000 and I learned a lot em in the period of time between starting
here as Library Resources Executive I think it was and having a library team to lead
and then taking on the learning systems team – I made all my mistakes with the
library team ..(Laughs). So I was able to kind of, self-reflection , very important I was (C5)
able to analyse what I'd done and know where it didn't work and therefore change it.
I was also much more confident. It didn't particularly bother me taking over another (C3)
team because I already had to start from scratch with my own team. They were quite
challenging looking back on it whereas the team I inherited they were just more
focused I mean it was maybe because their expectations were clearer but I was also
clearer in how I need to behave as a leader anyway so I was probably better having (C3)
had that experience than when I first started in the college when I was very raw. experience

SS: So that's what you meant by having to build consensus but still making
decision? What sort of decisions were you involved in – what sort of autonomy was
there in that role.

P1: Em, there was a fair bit of autonomy but it was never really tested. Again I'm not
really desperate to have the ego that some leaders do – I must have it done this
way, my way or no way. I think again I was more concerned with trying to do what
the organisation needed. By building consensus we didn't em we tended to..because
this management culture that had been created , the management team was pretty
clear what the organisation was trying to achieve and we all had different opinions on
how best to do that. Because there was this forum where you could argue things out
– that was actually one reason I've been really lucky here – there's always been (C1)
either management team or senior management team where you can sit round the
table and you can argue until your heart's content and you can discuss and debate

P4

never feel that I was in a position where I could lead on my own – I just wouldn't accept that. I don't think I'm that good …laughs.

modesty.

SS: So could you tell me a bit more about your first role in computing. What was your application process like and then maybe a bit about what your job entailed and how IT fitted in to the business?

P3; Gosh that's going back a few years…laughs…Well I'd come back up from Plymouth obviously with completing a year of my HND course so I suppose, I thought that would be quite hard, having dropped out of poly em but it turned out it wasn't, I got the first job I applied for em and I actually believe that was due to the year I did at Stevenson College as part of the Manpower computing course. Two 12 week blocks was work experience em one of the 12 week blocks I was working in the King's Buildings again for an FRC company so I think that stood me in good stead so I used references I had so eh what did it entail. It was called Assistant scientific Officer, very much in the computing suite, massive computing suite, big mainframes big tapes, so doing tape back-ups, plotting seismic graphs on these big plotters. Things have changed so much, haven't they? All that kind of thing.

C2
C5

C11

SS: And then how did you adjust to your new role. You'd had some work experience but how did you adjust to this new…your first day in?

P3: I loved it! It turned out I actually knew somebody who was working there from one of my placements so she knew I was coming so when I arrived that morning, very shy, I was quite young, but Linda was there to welcome me and she told everyone about me so it was quite an easy transition I have to say and moving in to there and working. And it was great, it was a lovely place to work we were all very young. It was quite a young team. There was 6 of us in the big office and maybe 4 other staff it was quite a small ..it was the core store (?) up in Gilmerton Road so the actual office itself was relatively small so it was quite a good starting point.

C4 ?

SS: Good. And so did you feel differently about yourself, so you said you were quite young and it was new…

P3: I think if anything I was slightly more confident – a lot wiser. But to be honest I don't actually feel that different from when I was in my early 20s ..laughs….which is ridiculous

SS: And yet not unusual

P3: yes – I think my values are exactly the same as they've always been I just feel that I've I maybe take longer to think things through but that's probably more to do with responsibility now it's not just me that I'm thinking about so I'm not quite as gung-ho as I used to be.

C12

SS: I mean just cos you mention that I'd be very interested to hear what you, how you might describe your values in your professional life.

P3: Okay. Em for values within Ark we're very very people centred. I mean all we do is, although we're a housing association we do carers support and our values are all led by our service users em so it's all about outcomes for the service users. So it's,

C1

CV

Appendix C: List of participants

List of participants

Name	Gender M/F	Approximate age range	Occupation	Organisational sector	Descriptive Metaphor
John	M	50-55	Head of IT	Education	Drifter
Lindsay	F	55-60	IT Team Leader	Health	Pioneer
Hazel	F	45-50	Head of IT	Housing Association	Pioneer
Ian	M	50-55	IT Manager	Food & drink	Drifter
Steven	M	35-40	IT Manager	Property development	Traditionalist
Pete	M	40-45	IT Manager	Health	Traditionalist
Sean	M	40-45	IT Section Head	Health-related	Evangelist
Andrew	M	45-50	IT Project Lead	IT Consultancy	Evangelist
Adrian	M	45-50	IT Project Lead	IT Manufacturer	Evangelist
James	M	40-45	IT Section Head	Education	Evangelist
Graham	M	40-45	IT Manager	Housing	Evangelist
Ross	M	40-45	Executive	Housing	Evangelist
Michael	M	40-45	Section Head	Telecomms	Traditionalist
Julie	F	40-45	IT Section Head	Public sector	Drifter