How eLearning drives organisational product adoption: an exploratory multi-case approach

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ABSTRACT

Purpose: Both industry and researchers have been discussing the need to close the learning skill gap in new product adoption for years. New business designs focusing on subscription models enabling online purchasing and cancellation of products in every country have changed the rules of the game. In this research, today's usage of eLearning in organisations has been investigated and barriers and challenges are discussed. The guiding question is: How shall organisations adopt a product if, on top of the skills gap, there is nobody guiding them how to use it and ensure adoption, and, hence, market success?

Methodology: Academic literature shows that eLearning can be efficient if well-designed and developed. Most research around product adoption goes back to Rogers and his product adoption model. This research uses a case-based approach to understand how eLearning could drive organisational product adoption in the future. It uses a unique two-level network sampling to avoid bias, meaning the author used his network but had no prior relationship to anybody eventually interviewed. The author interviewed the SVPs, VPs or Directors responsible globally for Learning and Development to discover first-hand which of the eLearning trends have the power to be the eLearning innovation changing product adoption in the future. The results blend expert opinions from automotive, hospitality, medical products, distribution, medical care, eLearning and consulting, most of them Fortune 100 and Fortune 500 companies

Impact: This research contributes to knowledge by suggesting extending Rogers' model of diffusion of innovation in two ways. First, by including a phase of very early conceptual eLearning and, in addition, it suggests replacing the communication channels by ubiquitous access to AI-influenced personalised eLearning. From a practice point of view, it suggests that developers need to listen to this case approach's appeal to provide "short" eLearning with "immediate" and "ubiquitous availability" to the learners, making eLearning available on any platform. Furthermore, it highlights that, wherever uniformity is needed as learning outcome, to rethink the existing method and potentially replace it by eLearning. Finally, it suggests investigating whether the success of simulations in certain industries could be also useful in others.

ACKNOWLEDGEMENTS

DECLARATION

I declare that this Doctorate of Business Administration thesis is my own work and that all sources literary and electronic have been properly acknowledged as and when they occur in the body of the text. No material in this thesis has been submitted for any other degree or professional qualification.

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1 CONTEXT

This chapter presents the context of this research and identifies three research objectives that, together, support the aim of this work: how eLearning drives organisational product adoption.

The chapter is divided into four sections, starting with an overview of the status and challenge of eLearning in a business context today and concludes with the fact that a next level of innovation around eLearning needs to happen. Similar to this status and outlook, the second section outlines the current challenges of organisations around product adoption and highlights again the need for innovation in this context. The third section outlines how eLearning already today plays a role in the context of organisational product adoption and how its meaning must grow in the future. The last section summarises the context and concludes with the three research objectives of this research.

1.1 eLearning

1.1.1 The need for Innovation in eLearning

Both industry organisations and researchers have been talking for years about the need to close the skill gap, and even at the latest OECD Conference the skill gap was a topic on the agenda. But only the 3-dimensional model of eLearning "any place", at "any time", at "any speed" (Tokarieva, Volkova, Degtyariova, & Bobyr, 2021) provides the means of reaching learners everywhere. There are many places around the world where there is just no alternative, and the global usage of eLearning requests clarity of what is working well today and what is the possible innovation needed for the future. The technology services industry organisation (TSIA) states that eLearning has existed for years, but that now, where people have started using eLearning, it is time to look into innovation (Manning-Chapman, 2018a). And similarly, there is various recent academic research suggesting the implementation of innovation (Ramadhan, Atmazaki, Sukma, & Indriyani, 2021; Tokarieva et al., 2021) in the eLearning area. So both, industry and researchers thrive for innovation in eLearning, and this is going to be also the vision for the current research.

This research is not evaluating whether eLearning has been effective in the past or what it needs to make it more effective, nor is it questioning if eLearning is as efficient as instructor-led training, even with research suggesting that this can be the case (Halston, 2014; Paul, 2014). The current research is purely forward looking into the future of eLearning and its usage to drive product adoption. The study investigates the usage of eLearning in seven key industries, but the results suggest that generalisation should be

possible across most industries.

1.1.2 Future Technology Influencing eLearning

Looking into the future, it is also important to understand the current state of eLearning, especially as the term is not new, and eLearning products have existed for more than 30 years. From Computer Based Training (CBT) delivered on CDs to modern internet-based eLearning, there has already been a big evolution. There is also already research outlining that there is a relationship between technology and the evolution of eLearning as well as the matching research (Sun, Finger, & Liu, 2014). Sun, Finger, and Liu (2014) suggest that there were already three waves of eLearning, as outlined in Table 1. Each line in Table 1 relates one of the large ICT paradigms to a new trend that this paradigm influenced in the area of eLearning.

Table 1

ICT Paradigms and eLearning

Wave	ICT Paradigm	eLearning Application Trend
1	Personal Computer (1980s)	Computer Assisted Instruction
2	Internet and Web (1990s)	Web-based Learning
3	Mobile Internet (2000)*	Personalised Learning and Social

Note. Adapted from Sun et al. (2014).

And looking at the results of Table 1, the question can be raised as to what the next trend is, as already stated in Section 1.1.1. Looking into the current trends in ICT, there are various focus areas, but, according to Gartner (Panetta, 2020) and TSIA (Bridgeman, 2020), one of the main trends is AI.

Artificial Intelligence (AI) is not a new concept, it goes back to 1956 when the term was first formally introduced in the Dartmouth Summer Research Project on AI by McCarthy, Minsky, and Shannon (1955) and there are various applications and research areas within AI dealing with learning and eLearning, so perhaps AI could be really the next innovation.

But whether it is AI or something else, this section points out that, in today's context, it is clear that a next evolution of eLearning is necessary.

1.1.3 Summary

In summary, there is a big demand to acquire skills, but it is not yet clear why eLearning is not playing a bigger role and what the next big evolution could be; it needs to be investigated as to whether it could be as current a mega-trend as AI.

1.2 Subscriptions as Change Drivers

1.2.1 Cloud-based Global Reach

Compared to eLearning, where it is visible that a next evolution is needed and expected (Section 1.1.1), a big change is in progress already for most companies in the IT sector. A growing number of companies now make their products available in the Cloud. In 2019 alone, the Software as a Service (SaaS) market, as a sub-category of the Cloud market, reached 85B$ and was expected to grow to 113B$ in 2021 (Gagliordi, 2018). According to Pettey (2018), from Gartner's findings, more than 80% of companies which did not begin in the Cloud (those that are called heritage-Cloud companies) were predicted to complete the transfer of existing business to the Cloud during 2021. This is the point at which having a Cloud product is no longer enough to make a difference in the market.

1.2.2 Self-service for all Products

To fully understand the changes that the Cloud is introducing into the software market, a high-level understanding of the Cloud itself is needed. Mell and Grance (2010) outlined the key characteristics of Cloud applications as an on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service. Out of this list, the on-demand self-service adds a mandatory route to market to every Cloud product, and this is the sales via the web.

This may not be the only route, but it is one of the key changes from a sales point of view. Naturally, companies that are converting from on-premises to Cloud are continuing to use their sales representatives and all other routes to market. However, both old and new companies alike can increase their country coverage with web self-service as no local headcount is needed to sell in a country.

Covering new countries based on web sales means that companies do not need to create legal entities in a country to be active. This is speeding up growth, but is also having consequences. Without a legal entity, there are no local resources to provide help to clients.

1.2.3 Subscriptions as the New Challenge

Besides the fact that self-service is a key route to market in the Cloud, a big difference between the Cloud and the old "on-premises" model is the change for the sales reps as self-service, which, in most cases, also means a subscription-based business. But even where sales reps are involved, they are no longer signing a big deal and leaving. They are signing just the start of a subscription. However, the task of a sales rep usually ends once

the signature is on paper. The size of the deal in the Cloud usually has the same value during the next years as a large deal in an "on-premises" setup, but, in general, the client can stop his subscription. This was not possible in the business model in the old on-premises world.

Interesting is that pure Cloud start-ups do not directly feel the consequences of a possible cancellation during the first year, as a usual Cloud license runs a minimum 9-12 or even 24 months (Jarvis, 2017). In consequence, somebody needs to make sure that the client is continuing to use the product and continues to sign up for it (Zoltners, Sinha & Lorimer, 2018).

1.2.4 History and Definition of Subscriptions

But what is a subscription? Historically, subscriptions are nothing new, as subscription existed already in the fifteenth century from map publishers, who tried to make their clients sign up for subscriptions to always receive the newest version of their maps (Warrillow, 2015). The model of subscriptions evolved over time and, seen today from a software or hardware business side, it is one of the forms of licensing. Literature differentiates open-ended licenses (perpetual), temporary licenses (subscriptions), strictly usage-based licenses (on-demand) depending on the length of the usage period (Gull, 2011; Jie & Seidmann, 2009). Applying this insight from the licensing side to the current research, the change in the industry is not only subscriptions, but also on-demand contracts. Both are sold today via the internet, and both result in the need of companies to drive a maximum product adoption, as, in both contracts, companies want the customer to ideally use the contracts more (on-demand) and continuously (subscriptions).

1.2.5 Subscriptions and Online-sales in On-premises Products

The challenges of subscription cancellations also raise the question as to whether this problem of the Cloud industry is still only one of such industry, even if it likely appeared first in the Cloud. Talking about on-premises products, these were sold some years ago by sales reps talking to their clients. But, currently, since companies like Amazon started to sell via the internet and deliver into any country, the times by which how on-premises gets deployed have changed. Today also, any on-premises product can be bought everywhere. And with the success of subscriptions in the Cloud technology, most industries selling on-premises products have also moved to a subscription model. This means that, even with this research being initiated by the challenges the Cloud industry has introduced, it will investigate in general the questions around organisational product adoption. And, as outlined in Section 1.1, the only learning option being available in all

countries is eLearning.

1.2.6 Summary

In summary, the biggest change in IT is the move to Cloud with the fact that self-service is a key attribute of selling in the Cloud, and this is usually accompanied with a subscription contract instead of a one-off purchase. The move to subscriptions happened also in the on-premises world; a signature under a subscription contract no longer provides value, but the key is to make a client adopt the solutions that are offered as a subscription. And, as the product adoption is needed worldwide, one of the only options is eLearning with its worldwide availability.

1.3 A New Focus on Product Adoption

1.3.1 Product Adoption in a Global Subscription World

So, with the move to sales of subscriptions on-demand in a global environment, all companies are now facing the same challenge. They must take care of their clients after the sale. Otherwise, clients cancel their subscription, and the client is lost for the product company. Thus, after two decades of the Cloud industry (Peng & Gala, 2014), and with some analysts only speaking about the Cloud versus on-premises (Pettey, 2018), this differentiation may still exist, but, in both worlds, subscriptions are the new sales model. From an IT company point of view, the most important task is to get people to adopt their products and, consequently, extend or increase their clients' subscriptions.

1.3.2 Focus on B2B

When looking into product adoption, there are, in general, two big differences in the research around product adoption. And this is the question as to whether end user products and the adoption of the end user are researched, or if questions around B2B products and organisational product adoption are covered. As the author of this research works in a Fortune 100 company selling primarily B2B, the current research focuses exclusively on products that are sold B2B, and that consequently require organisations to adopt.

1.3.3 The LAER Model

In the B2B IT industry, there are already some starting points to find answers to the challenge of driving product adoption in a global subscription environment. One example is the framework that TSIA (2019) created as the new sales framework to answer those new challenges. The so-called LAER (land, adopt, expand, renew) model was introduced by Lah (2017).

The phase of "adoption" is the most important new phase after the "land". The "land" phase is the same as the sales phase in the past with any "on-premises" product. "Adoption" is the new phase, which is supposed to make sure that the product gets used at the client. TSIA does not, however, suggest in detail a tactical solution as to how "adoption" can happen. Without referencing Pisano (2015), they state that each company needs to be innovative in their area to drive adoption.

Looking deeper into the LAER model, Lah (2017) highlighted the roles of consulting or education as ways to increase adoption. As consulting and instructor-led education cannot easily scale, as headcounts are needed, a consequence is that most companies expect eLearning to play a role in adoption. TSIA and other analysts have provided extensive data around the value of education in general to drive adoption (Borgini, 2018), but there is no guidance around digital education and adoption. And this is one of the big gaps in the industry today and the aim of this research is to explore how need to change plays a role in this area.

1.3.4 Product Adoption and Product Adaption

In the discussion around how organisational product adoption can be improved in a B2B context there is, however, one more thought that is missing in most discussions. And this is the question as to whether increasing product adoption is the only solution for the industry or if product adaption could also play a role. Knowing that all companies are listening to their clients during their design of the product, the question for product adaption to drive more revenue is a valid alternative. So, it must be highlighted that clarification is needed between product adoption and product adaption and their meaning. This research focuses on product adoption, but once there are findings suggesting additional research around product adaption this will be highlighted.

Looking into product adoption, there is considerable academic literature around this subject (Hoskisson, 2011; G. Johnson, 2008; Rogers, 2003). Rogers (2003) model provides a foundation for many studies around adoption. Besides investigating the existing frameworks, the existing research should help in answering the question as to whether the described challenges of the LAER model need investigation of consumer adoption or if organisations need to be investigated, as suggested by Frambach and Schillewaert (2002). Additionally, the link between product adoption and buying behaviours as investigated, for example, by Olshavsky and Spreng (1996), is an interesting starting point to understand.

One expected result from the literature review is to figure out which existing framework

from management strategy could be a good starting point. Referencing TSIA as well as Pisano (2015), there is also a need to look into academic research innovation strategy to identify possible frameworks or patterns for the future (Utterback, 1994).

1.3.5   General Executives

So, looking inside IT companies, the changes in the routes to market (Section 1.2.3) and the challenge of reaching any country worldwide and the question of product adoption in those geographies are currently posing challenges for executives in any company. The background for this in the industry is that, independent of the detailed numbers, every subscription not renewed means a sales rep needs to sell one more subscription the next year to just keep the business flat year-on-year. This stresses the importance of trying to get subscriptions renewed.

Any executive looking into the mid-term development of his business understands the high importance of renewals of subscriptions and, in general, the importance of driving product adoption. And, even in "on-premises" products without their new subscription approach, the new routes are creating issues, even if it is not as easy to exchange the product and end the subscription. A problem with a product would at least stop people extending their subscriptions, which directly causes lower sales in this region. This once more stresses that, independent of the product, the challenges of finding ways to improve product adoption are the same for every industry.

Furthermore, analysts like Lah and Wood (2016) have clearly communicated to all executives their message for innovation around product adoption, like the LAER model. Lah (2017) stresses how important this innovation is in the industry to survive, but none of them offer a solution, as every company is different from their view. And, for any executive, this creates a clear challenge. They know that they have a problem around product adoption based on their own business insights, and they have TSIA telling them they need innovation. But there is no guidance how to get there.

1.3.6   Services and Education Managers

Consequently, across the IT industry, there is an increasing pressure on the services, support and education side, to find innovative ways to drive adoption. Even without knowing what the right innovation strategy is, the guidance from executives to their organisations to drive adoption makes sense. But, as there is not yet any general guidance on how to reach clients to maximise adoption, the demand to improve itself must trigger innovation, as there is currently no existing solution.

1.3.7 Summary

Companies in general support their clients also in aftersales with consulting or education services to increase product adoption and the current research could cover both such areas. Consulting cannot grow unlimited, as the needed headcount cannot easily be scaled. This does not, however, fit to the global reach of the current research. The same applies to any education that needs an instructor. So, even with knowing that consulting or instructor-led education also plays a role in product adoption, this research is limited to digital education, as it provides the same worldwide reach as today's subscriptions. The impact of consulting and instructor-led education on product adoption could be the subject of further research.

As product adoption is not a new topic in academic management research, and, on the other hand, research in eLearning is still showing evolutions in this area, the current research should lead to a new academic framework for future organisational product adoption driven by the usage of eLearning. It can be expected that this framework can be reused for future academic quantitative studies, but also be the foundation for research outside the subscription world to build further on the framework.

Any company in the investigated industry sectors should immediately benefit of the study during their product sales cycle as they can adjust their enablement and eLearning strategy based on the findings.

1.4 Objectives

In total, there are some key areas that were identified. This sub-section extracts the key topics and formulates three objectives that support the research aim of how eLearning drives organisational product adoption.

1.4.1 The Usage of eLearning in Organisations

From a contribution to a practice perspective, the above discussion outlined that there is no guidance for business owners or education leaders on how eLearning is used today across the industry (Section 1.1.1 and 1.3.5). As neither TSIA nor other analysts give any indication of how eLearning is used today or can be used in the best way, the most important starting point for practice is to gain insight of the current situation of eLearning. On the research side, there is research indicating which ways of eLearning work today (Halston, 2014; Paul, 2014) and about influence factors (Derouin, Fritzsche, & Salas, 2005), but the question is how this is seen in practice.

Looking into the needs of education managers, they may know which eLearning works

well, but they do not know which is the future trend in eLearning that will be the next line in Table 1, nor do they know how their eLearning is ultimately driving organisational product adoption. So, the first objective is to investigate how eLearning is used; this means the research focuses on what organisations are doing with eLearning. So, one contribution to practice of this research will be a statement of what works well today. Once education managers understand what is used today, they can adopt their work better. Cost savings and more skills in the market will be the benefit. And more skills in general lead to greater product adoption (Borgini, 2018).

Summarising the above, the first objective is to examine how eLearning is used in organisations.

1.4.2 Challenges Around eLearning

With the ongoing changes and discussions around the digital transformation (CONNECT, 2021), the next question after knowing how eLearning is used today in organisations is around experiences and what is working well or not as well in an organisation. As eLearning is known to be one means to drive organisational product adoption (Section 1.3.5) and neither Cloud nor subscriptions are new, all large companies not only need to know how they can use eLearning, but they must also know what works.

From a contribution to practice point of view, this gives education leaders the opportunity to shortcut their current experiments with eLearning and use what works well. The results should be able to significantly speed up the optimisation of eLearning development. Even with the expected outcome being of interest to practice today, they have an equal or even bigger importance for the contribution to knowledge of this research. There is considerable research around organisational product adoption (Attewell, 1992; Chau & Tam, 2000; Frambach & Schillewaert, 2002; Gallivan, 2001; Kinuthia, 2015), but there is still not a universal theoretical framework that can be generally applied (Gallivan, 2001). And, even with extensive critical research around eLearning (Yi-Hsuan Lee 2013), there is not enough evidence, as outlined in Section 1.1.2, that eLearning can play a significant role in organisational product adoption. This means, from a contribution to knowledge point of view, that the second objective can be expected to confirm existing research and ideally help to prioritise future research in those areas that are the results of the current exploratory research. On the other hand, it will probably also give insights into open questions like the question around the value of a pre-enablement before any intentional enablement happens, as suggested by Pisano (1996), in an eLearning environment.

Summarising the above, the second objective is to explore the barriers and challenges for the usage of eLearning in organisations.

1.4.3 Looking into the Future

So far, the first two objectives give insights by looking back into what works and identifying issues with eLearning. The challenges of the digital transformation and, as consequence, the skills gap in the industry are well-known and future innovation is needed to find solutions, which, as yet, the industry has not found. In the area of eLearning there has been a big evolution visible during the last 30 years (Sun et al., 2014), but, so far, the real innovation that is driving solutions to the skills gap is missing. As outlined in Section 1.1.1, the need to find innovative solutions to make eLearning successful is key for the survival of all companies that are selling their products via the web. So, the reflection upon the challenges in the industry around the need for innovation in eLearning and product adoption leads to the last objective. The expectation is to use the experience of companies that are using eLearning today and who know what is working and not working to obtain insights as to if there are already signs for future trends. There may be trends across the industry that could lead to recommendations for innovation the future.

Summarising the above, the third objective is to provide recommendations on how eLearning can be used to drive product adoption in the future.

1.4.4 Summary: Aim and Objectives

Table 2 summarises the objectives from above. All objectives lead to the same aim, which is also the title of this research: How eLearning drives organisational product adoption: an exploratory multi-case approach. The purpose of this table is to summarise the objectives in a structured way in preparation for the next chapter, which will add to each objective a research question based on gaps in the existing literature.

With this table, the objectives of the research are clearly stated: The research will examine how eLearning is used in organisations; it explores the barriers and challenges for the usage of eLearning in organisations and, last but not least, provides recommendations on how eLearning can be used to drive product adoption in the future.

Table 2

Overview of Objectives

AIM		
How eLearning drives organisational product adoption: an exploratory multi-case approach		
Objective I	**Objective II**	**Objective III**
Examine how eLearning is used in organisations	Explore the barriers and challenges for the usage of eLearning in organisations	Provide recommendations on how eLearning can be used to drive product adoption

2 LITERATURE REVIEW

This chapter presents the literature that is the foundation for the current research and identifies three research gaps in the literature leading to the research questions. The chapter is divided into two sections, following the aim of the research, which is to research how eLearning drives organisational product adoption using an exploratory multi-case approach. Based on the aim, the identified topics for the sections are eLearning and organisational product adoption.

The first sub-chapter around eLearning begins by creating clarity around knowledge and transfer of knowledge in organisations, before presenting the definition of eLearning that is used in this research. The sub-chapter then adds thoughts around the effectiveness of eLearning and relates current research in this area back to the research aim of this work. Additional topics covered in the three sub-chapters are the technologies - AI, Learning Platforms and Ubiquitous Computing. Those three technologies are presented with their definitions or key findings, as these are key technologies that could have an influence on eLearning similar to personal computers, internet and mobile internet previously, as outlined in Table 1. Those topics do not play a role in the research questions, but should help later when presenting the findings.

The second sub-chapter around organisational product adoption starts with looking into research around subscriptions and the Cloud, which was the trigger of the research. It then presents research around influence factors of organisational product adoption like company size, product lifecycles, demand and supply chain adoption and finally adaption versus adoption and communication channels. The purpose of each of these sub-chapters is to identify the research gap in a precise way and to give a deep background that can be reused later in the findings and discussion. The key theme to define the research question in the sub-chapter is to present a solid foundation around organisational product adoption.

2.1 eLearning

2.1.1 Knowledge

The focus of this research is not knowledge itself, but eLearning and adoption from an organisational point of view, and, as with any other study dealing with adoption (Argote, 2013; Lee & Fink, 2013), there must be clarity around the term "knowledge".

The research that will be mainly used in the current research around knowledge refers back to Nelson and Winter (1982) and Polanyi (2009) who suggested the differentiation of knowledge into "tacit" and "codified". Tacit knowledge in this context is difficult and

usually learned by experience (Polanyi, 2009), whereas "codified" describes knowledge that can easily be documented. Other researchers (Garud, 1997; Lundvall & Johnson, 1994) suggested the differentiation into "know-what" (knowledge about the state of the world) and "know-how" (competence knowledge). Using the foundation created by Polanyi (2009) around tacit and codified knowledge, Nonaka and Takeuchi (1995) presented a model as to how socialisation, externalisation, combination and internalisation can be used to convert tacit and codified knowledge.

Management literature also provides a differentiation of the ease of knowledge transfer across individuals, groups of individuals or organisations (Zander & Kogut, 1995). Codified knowledge can be transferred between individuals, for example, by manuals or documents. In technology in general, there is both tacit and codified knowledge. Tacit knowledge needs human interaction, while, for the transfer of codified knowledge, the typical requirement lies in the software area, for example, where users need to know which values or properties need to be filled and in which way (Edmondson, Winslow, Bohmer, & Pisano, 2003). Research around how knowledge is transferred does not yet have answers as to how codified or know-how can be transferred in the best way to cope with fast changing products (Ferdows, 2006). In the conclusion of Ferdows (2006) research, he noted that 'we need more research in this area' (Ferdows, 2006, p. 8), which underlines the need for the current work.

2.1.2 Knowledge Transfer in Organisations

The current research does not deal with knowledge itself for the purpose of knowledge, but has the aim of investigating organisations. This leads to the question as to how knowledge is transferred inside organisations and what is the relationship of learning and knowledge in organisations and its impact on businesses. Indeed, there is already research in this area, and Hayek (1945) probably laid the most famous foundation around the impact of distribution of knowledge. The current research is limited to the investigations from an organisational point of view, but it could be interesting for future research to investigate the impact of the current research on the global economy, similar to the view of Hayek (1945). Some research suggests that timing of knowledge transfer is, in general, important to organisational learning (Szulanski, Ringov, & Jensen, 2016). There is also first exploratory research that learning artefacts could be of interest in the future (Friesl, Larty, & Jacobs, 2018). Other research suggests that, especially, learning prior to any usage will ease the transfer overall, but more research in this area is needed (Pisano, 1996). Similar results are suggested already also in the area of eLearning, research proposing that upfront learning in multimedia is helpful as well as short snippets

afterwards. Especially, the findings from Mayer and Chandler (2001) give a first indication that eLearning is providing new approaches to knowledge transfer in organisations.

2.1.3 Definition of eLearning

There are many definitions around eLearning that are used by researchers, and there are recent approaches of coming to a common understanding (Kumar Basak, Wotto, & Bélanger, 2018) or even trying to simply find agreement of a suggestion for a common definition. The research process of agreeing to a final definition has not been without the critical thoughts of the experts in discussing the final version (Sangrà, Vlachopoulos, & Cabrera, 2012). Based on this, it is questionable whether the final definition is really the one to use; however, the research is too new to see how academics are going to react in general. Nonetheless, Sangrà et al. (2012) came up with a categorisation of eLearning on their way to a common definition. During their literature review, they reviewed existing research and built categories of the used definitions. In total, they identified four categories: technology-driven, delivery-system-oriented, communication-oriented and educational-paradigm-oriented definitions.

The current research deals with the question of knowledge. Amongst the above-mentioned categories, "delivery-system-oriented" is described as 'This category presents e-learning as a means of accessing knowledge (through learning, teaching, or training)' (Sangrà et al., 2012, p. 148) and is, thus, the best fit for the purpose of this research, as it highlights the access to knowledge. There are multiple definition suggestions summarised in the category (Harman & Koohang, 2005; Lee & Lee, 2006; Li, Lau, & Dharmendran, 2009; Liao & Lu, 2008), all taking the communication approach from different angles. The most flexible one is from (Harman & Koohang, 2005, p. 77) who state that 'E-learning is the delivery of education (all activities relevant to instructing, teaching, and learning) through various electronic media'.

2.1.4 eLearning Effectiveness

Using the above decidedly very generic definition of eLearning, the next question is if eLearning is at all a valid alternative to non-eLearning learning methods. From a purely contextual point of view, in this research this question could be skipped, as, in most countries, there is no alternative to eLearning as products are sold on the internet. But, in concerning rigour in the research, the results would be meaningless if there would be no indication that eLearning is at all effective. So, for the current work, it is enough if there is any indication that eLearning is effective in organisational product adoption. In the

event existing research already indicates open research questions, it could be interesting to see if the current case approach is generating additional insights towards those existing questions.

Looking into existing research, the work of Derouin et al. (2005) gives a good overview of existing research around the effectiveness of eLearning. With it being now 15 years old, it indicates that eLearning can be effective, but it depends 'how it is designed, delivered, and evaluated' (Derouin et al., 2005). In the recent years, many other studies have also suggested the effectiveness of eLearning (Chen, 1974; Halston, 2014; Paul, 2014). There is even research indicating that there are no differences in generations (Hill, 2017). Hall (2017) looks to eLearning from a learner satisfaction perspective in organisations, and not from an adoption point of view, but research indications that generation differences do not play a role are interesting as a prerequisite for the current work.

On the other hand, there is critical research stating that eLearning cannot be taken in general as effective (Yi-Hsuan Lee 2013), stating that effectiveness is dependent on the usefulness and ease of use of the eLearning. In a similar direction, research in a subset of eLearning, like mobile learning, states that micro learning can be effective, but only for some purposes and some learning. In a similar way, research also states that the "learner control" has an influence on the effectiveness (Sorgenfrei & Smolnik, 2003).

The summary for the current research is that there is research that indicates that there is existing research suggesting that eLearning can be at least efficient under certain circumstances. And there is also indication that eLearning is effective for certain groups if not even a full replacement for any other delivery method dependent on the subject. The key criteria in recent research seem to be that it is well-designed and easy to use (Derouin et al., 2005; Paul, 2014).

Taking into consideration that eLearning is a relatively new model, it is not surprising that there are many areas that need further research formulated as: 'It follows that we should peer over the shoulders of designers and vendors of eLearning tools or the administrators who purchase these tools' (Greg, 2016); 'further research on determining the proper position for e-learning within staff development is necessary' (Chen, 1974); 'Additional future research is recommended to examine any difference in mobile learning effectiveness based on hardware, software, and module functionality' (Paul, 2014); and 'further examines the role of the organisational learning environment' (Sorgenfrei & Smolnik, 2003).

A very interesting recommendation for future research comes from Sun et al. (2014), who suggest that there is a relationship between the evolution of eLearning and key technologies in the industry. They recommend continuing further investigation based on current trends. Considering this, one of the big trends today is AI and this underlines the idea from Section 1.1.2 that AI is probably the next big influencer for eLearning and could be the next line in Table 1.

2.1.5 AI

The term artificial intelligence (AI) was first formally introduced in the Dartmouth Summer Research Project on Artificial Intelligence by McCarthy et al. (1955). A good starting point from an overview point of view is the book by (Russell, 2010), and the most current summary can be found in *One Hundred Year Study on Artificial Intelligence (AI100)* from Stanford University (Grosz et al., 2016), but there are also various other academic papers summarising the literature and status on a regular basis (N. Gupta, 2017; Oke, 2008).

Academic research around AI can be structured into two points of view, around AI and a variety of research fields. The two points of view categorise AI into "weak" and "strong" AI. Weak AI describes research assuming that AI can take over any important task that a human can execute. On the other hand, strong AI deals with the assumption that AI can be equal or superior to the results human can produce (Ohlsson, Sloan, Turán, & Urasky, 2017). Strong AI is not only generating many discussions as to if it really can exist and where technology stands today compared to a child (Ohlsson et al., 2017), but also the consequences of its existence and, subsequently, many ethical questions in the area of data usage and data storage.

Besides the two paradigms "strong" and "weak" around AI, the research is split into many fields (Grosz et al., 2016; Russell, 2010) without a general accepted categorisation in the fast-evolving academic literature. Using the literature review from Oke (2008), the current research is divided into 16 fields as outlined in *Figure 1*. This figure shows the categorisations as used by Oke (2008), highlighting the two areas that are related to the current research.

Reasoning	Programming	Artificial life	Belief revision
Data mining	Distributed AI	Expert Systems	Genetic algorithms
Systems	Knowledge representation	Machine learning	Natural language understanding
Neural networks	Theorem proving	Contrainst satisfaction	Theory of computation

Figure 1. AI Categorisations

Oke (2008) also states that his research does not cover all literature. However, comparing this with the fields (Grosz et al., 2016; Russell, 2010), it still looks like a good summary. For the current research, there are two research fields which are of importance, knowledge representation and expert systems, highlighted in grey in *Figure 1*. Knowledge bases (or knowledge representation) deal with the representation of knowledge. In general, codified knowledge is represented. Companies are using AI knowledge bases not only to capture knowledge, but also to capture information about processes. AI expert systems are programs emulating the decision-making of humans. They are doing this based on rules and not based on program code. This means there are expert systems relying on knowledge bases to drive their decisions (Sanzogni, Guzman, & Busch, 2017).

2.1.6 Learning Platforms

Not only AI is a big influencer of eLearning as outlined in the last paragraph, but there is also a new trend around platforms.

To start the investigation around platforms or digital platforms, it is important to understand that the terms digital platform and platform are used synonymously (Kim, 2018; Marco & Gianmarco, 2020). This research only uses the term platform, even though the terminology used frequently is MOOCs (massive open online courses). According to a ProQuest search in July 2021, the topic of platforms came up in academic peer reviewed journals in 2009 (Fini, 2009). Fini (2009) focus when researching MOOCs was around the used tools, but, at that time, there was still the question as to whether the concept would be sustainable. Naeve, Nilsson, Palmer, and Paulsson (2005) did not even question the usage of platforms and proposed a framework of tools for platforms. And subsequently there has been recent research in a broader context proposing to talk about infrastructure when discussing platforms, and that some infrastructure has evolved to be a platform (Marco & Gianmarco, 2020). The current research uses the definition that a

platform is an infrastructure that has a stable, scalable programmable architecture and a standardisation that is decided upon by the provider; the interest of a platform provider is profit, with certain benefits for the user.

Applying now this platform definition to learning platforms, then a learning platform is a standardised infrastructure, containing learning, and is provided by a company to make a profit and has a benefit for the users. The benefit for the users in this case is learning. There is academic research that learning platforms can be effective, especially dependent on the usability of the platform (Kuleshova, Kutsak, Liulchak, Tsoi, & Ivanenko, 2020). Furthermore, there is also recent research around the mentioned platform, LinkedIn Learning, which is part of the MOOCs platforms (Castillo-de Mesa & Gómez-Jacinto, 2020; Cooper & Naatus, 2014; Galan & Khodabandehloo, 2016).

2.1.7 Ubiquitous Computing

The last technology to mention in this research around eLearning technologies that could influence the future of eLearning considerably is ubiquitous computing. This is a trend that allows small computing units or wearables to be always available to the user (Saadiah, Erny Arniza, & Kamularifin Abd, 2010; Sakamura & Koshizuka, 2005). Looking for a definition, there are ongoing discussions in the literature around what is ubiquitous learning. There is research defining it as learning using advanced mobile devices and predictive analytics (Isaías, 2018), learning that is using ubiquitous computing devices (Hwang, 2006; Saadiah et al., 2010), and more general definitions going back to the meaning of ubiquitous availability of learning without using ubiquitous technology (Hwang, Tsai, & Yang, 2008). But researchers seem to accept that there are two definitions around ubiquitous learning today. This follows the general discussion of ubiquitous computing, where, from a technologist point of view, ubiquitous computing requires the use of ubiquitous (context aware) technology (Kindberg & Fox, 2002), as opposed to the user point of view, where the focus is on availability of computers in any environment and their ubiquitous usage (Uemukai, Hara, & Nishio, 2004). Following these two points of view on one hand, uLearning is defined as learning using ubiquitous technology (context aware learning), and, on the other hand, as learning that is ubiquitously available (anywhere and anytime learning) (Hwang et al., 2008) . Using those definitions together with the definition of eLearning used in this research, the relationship of eLearning and uLearning can be outlined as shown in *Figure 3*. *Figure 3* uses the two mentioned definitions of uLearning "anywhere and anytime learning" as well as "context-aware learning" and puts them in relationship to mobile learning, eLearning and ubiquitous computing in analogy to Saadiah et al. (2010).
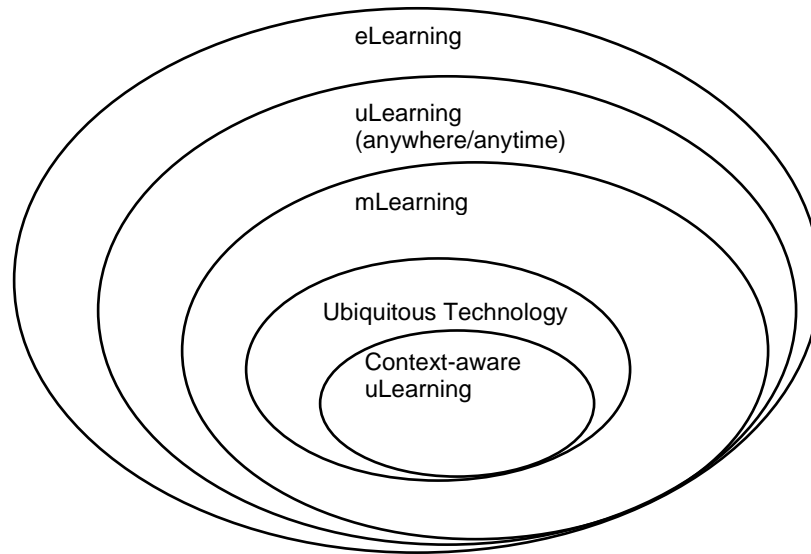
Figure 2. Relationship eLearning, mLearning and uLearning. In analogy to (Hwang et al., 2008) and (Saadiah et al., 2010)

There is also already agreement that, independent on the usage of ubiquitous computing, two of the key characteristics of uLearning are immediacy and context-awareness. It is even suggested that 'context-awareness is the major characteristic that distinguishes uLearning from others' (Saadiah et al., 2010). The mention of context-awareness together with immediacy is of interest for this research, as the research question has, as a result, a finding around personalisation.

2.2 Organisational Product Adoption

2.2.1 Subscriptions

The term subscription goes back to the seventeenth century, where, in various businesses, people called adventurers or subscribers shared the risk, for example, of an insurance company (Clapp, 1931). In book publishing, subscribers at that time financed an author and received his books as part of their subscription. The first documented book that was published based on a subscription dates back to 1607 (Clapp, 1931). The concept of a subscription is still the same and represents also in the software and hardware world as just another way of contracting as it already did for books in the seventeenth century (Jie & Seidmann, 2009). However, research today shows that the contractual and business implications of using subscriptions today in the IT industry are much more complex than the initial approach of financing an author and their books (Gull, 2011; Jie & Seidmann,

2009; Wierckx, 2020).

2.2.2 Cloud

Using the above definition of a subscription, the current research was triggered by the Cloud industry pushing all products into a subscription. So, first it is key to understand what the definition of Cloud is, and what are the properties of a Cloud. This should then lead to the reasons why this is important for all industries. Cloud is still a new terminology and many articles in academic journals use the term without thinking of its definition (Bajenaru, 2010; Benlian, Hess, & Buxmann, 2009). During recent years, academic researchers have started to use Mell and Grance (2010) as a valid definition (Chekfoung, Kecheng, & Lily, 2013; Holtkamp, Steinbuss, Gsell, Loeffeler, & Springer, 2010; Salum & Rozan, 2017). Mell and Grance (2010) definition appeared in a publication from the National Institute of Standards and Technology (NIST), which is responsible for US Standards, and created the definition with focus on the US Government, as stated in the paper. However, none of the cited researchers mention that they are using a definition created for the US Government. As such, authors citing Mell and Grance (2010) should theoretically limit their research to the US or at least highlight the purpose of the used definition which is, in general, not the case, even in very recent research (Salum & Rozan, 2017).

Beyond Mell and Grance (2010) and its usage for academic research, the European Union (EU) funded, in 2011-2012, research around the Cloud with focus on the EU (Alleweldt & Kara, 2012). The mission of the research was broader than the NIST research as it was supposed to give a general guidance for the EU. At the same time, however, it was not intended to be a binding guidance such as the NIST definition of Cloud for the American government. The EU research used the NIST definition as a foundation underlined with the statement 'according to a widely accepted definition of the US National Institute for Standards and Technologies' (Alleweldt & Kara, 2012, p. 8).

Around the same time as the Mell and Grance (2010) definition, Armbrust et al. (2009) created a widely cited report (Li, Liu, & Yan, 2016; Li, Yang, Yuan, Chen, & Jiang, 2019; Schneider, Wollersheim, Krcmar, & Sunyaev, 2018) suggesting a generalisation of current facts around the Cloud, and coming to a very similar view to that of Mell and Grance (2010). The key difference is the missing mention of "broad network access" and "resource pooling" when covering the key properties of the Cloud. The current research does not intend to involve those two properties; thus, it would be possible to use this definition without any impact for the current work. The definition by Armbrust et al. (2009) has more than 700 citations, according to ProQuest, but a closer look reveals that

very few of them are from peer reviewed journals, which is the opposite case for Mell and Grance (2010).

Beyond the cited US and EU definitions, it needs to be stated that none of the literature used in the current research gives any indication that there are other definitions from Asia, Latin America or Africa. There is, however, research (Poon & Yu, 2006; Warner, 2003) indicating that adoption decisions in general, and including the Cloud, are influenced by cultural differences from Asia compared to Western cultures. For the current research, this means the decision to limit the research to Western cultures makes sense. Consequently, using a US and EU-focused definition will not limit the results.

Based on this unimportance of AP and the reuse of Mell and Grance (2010) definition by the EU and the often stated wide acceptance amongst academics (Chekfoung et al., 2013; Holtkamp et al., 2010; Salum & Rozan, 2017), the current research will also build upon this definition for the Cloud using their stated five key aspects: on-demand self-service, broad network access, resource pooling, rapid elasticity and measured service.

2.2.3 Influence of Company Size

For the current work, there needs to be reflections concerning from which companies' data will be used. According to many scholars, size of a company plays a role for research around adoption (Frambach, Barkema, Nooteboom, & Wedel, 1998). There is, generally, an understanding that larger companies are adopting innovation faster than smaller ones, and this is also applicable for software companies (Kimberly & Evanisko, 1981; Robert, 1982). However, there is also research suggesting the opposite for certain cases (Nabseth & Ray, 1974). Nooteboom (1989) argues that both extremes are not, in general, correct. He says that 'The issue is too complex to allow for a single sweeping statement concerning the relation between innovation and firm size, regardless of types and conditions of innovation' (Nooteboom, 1989, p. 109). As the current research is exploratory, and to avoid uncertainty in the model, the decision is to keep the size of the firms at least similar across the research. The criteria of being part of the "Fortune 500" is used as a strong indicator that companies are in a similar rage. This limits the validity of the results to similar company sizes (Nooteboom, 1989) until future research indicates validity also for other company sizes.

2.2.4 Product Lifecycle of the Cloud

During the years 2009-2017, not only NIST, the EU and Armbrust et al. (2009) arrived at same definition of the Cloud, but other papers, using their own definition, also came to similar statements to that of NIST (Bajenaru, 2010; Benlian et al., 2009). This suggests

that a dominant design for the Cloud emerged. The terminology of dominant design was used in various research areas, such as from an industrial organisation point of view (Anderson & Tushman, 1990), economics literature around standardisation (Farrell & Saloner, 1992; Katz & Shapiro, 1985) and especially technology and innovation theory (Abernathy & Utterback, 1978; Teece, 1986; Utterback, 1998). Abernathy and Utterback (1978) enhanced the initial work of Utterback (1998) suggesting that, once the dominant design is reached, companies shift their focus away from product innovation towards process improvement, and improving operational and service efficiencies. Transferring this to the Cloud industry, this means that it is to be expected that the Cloud industry is starting to investigate factors that can be optimised around the processes.

From a process optimisation view, W.-W. Wu (2011) proposed a new framework intended to help subscription providers to 'deepen their understanding with regard to SaaS adoption' (W.-W. Wu, 2011, p. 15064). The existence of this research is not only helpful in its research results, but it also underlines the above suggestion that, when the "dominant design" is reached, focus shifts to process improvements.

2.2.5 Adoption as part of Diffusion of Innovation

As adoption seems to play a key role around the process innovation of the Cloud, an evaluation of existing adoption research models is needed to find a model that can act as a foundation for the current research. As already outlined in Chapter 1, the current research was motivated by the Cloud industry, but, based on the overall changes that also happened outside of the Cloud, the work will investigate product adoption in general in a B2B environment. From a product adoption perspective, four theories and their extensions are often mentioned as widely accepted approaches (Gallivan, 2001; Hogarth & Dawson, 2008), namely: the Technology Acceptance Model (TAM) from Davis (1989), Innovation Diffusion Theory (IDT) from Rogers (2003), and the Theory of Planned Behaviour (TPB) from Ajzen (2005), as well as models like the Decomposed Theory of Planned Behaviour (DTPB) suggested by Taylor and Todd (1995) who built their model based on TAM and TPB as well as IDT. Lai (2017) presented a general list of the existing models and their derived versions and, for this overview to be complete, the Theory of Reasonable Action (TRA) (Fishbein & Ajzen, 1975), Theory of Task-technology Fit (TTF) (Goodhue & Thompson, 1995), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003) need to be mentioned as well as the derived versions of TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008). All the models except IDT have one key factor in common, which is that they are all focused on user acceptance. With the focus of the

current research towards B2B and, therefore, a focus on organisations, it needs to be asked whether those models are a good fit to build upon in the current case.

Looking into the fit of IDT as a foundation for the current research, the first fact to mention is that it was dedicated to the end user acceptance of products when it was created (Rogers, 2003). Scholars questioned if the IDT model could be transitioned at all from product to IT (Chau & Tam, 2000). One of the main criticisms was that the variables of IDT (relative advantage, compatibility, complexity, observability, and trialability) are not enough for complex IT environments like the Cloud (Fichman, 1990; Prescott & Conger, 1995). In contrast to this, various scholars treat IDT as valuable enough to enhance (I. Benbasat & Moore, 1992) or even merge IDT with other newer models (Agarwal & Prasa, 1998). In the meantime, it became used for a range of innovations, including IT (Salum & Rozan, 2017), and much of the current research around the Cloud also uses IDT as its foundation (Alshamaila, Papagiannidis, & Li, 2013; P.-F. Hsu, Ray, & Li-Hsieh, 2014; Y. Wu, Cegielski, Hazen, & Hall, 2013). Prescott and Conger (1995) recommend to not use IDT at all, dependent on the location of the innovation in an organisation, but they also suggest that, for intra-organisational innovations such as the Cloud, the use of IDT is applicable. Fichman (1990) argued that other factors should be added for complex IT environments, as the ones of IDT are not enough, although this is not to question the value of the existing variables of IDT in general.

An accepted extension to IDT is the technology-organisation-environment (TOE) framework (Tornatzky, Fleischer, & Chakrabarti, 1990). TOE and its extensions (Awa, Ojiabo, & Orokor, 2017) are used in the majority of Cloud adoption studies, such as that by (Ray, 2016), in many cases directly involving IDT. Despite Tornatzky et al. (1990) not even mentioning communication or knowledge in their work, TOE remains valuable for overall research around the Cloud; however, for the current research focusing on knowledge, it does not add anything of value beyond IDT.

An additional big differentiator of IDT to TAM and DTPB is that only IDT considers the whole innovation process, as shown in *Figure 4*. Furthermore, it includes the time prior to the adoption decision and even further into the innovation process, which is, as research suggests, very important (Fichman, 1990). The current research is not questioning whether knowledge itself influences adoption, as existing research has already indicated this to be the case (Attewell, 1992; Teece, 1998; Thong, 1999). The value of taking the whole timeline of adoption into consideration for the planned research is furthermore underlined by research from Pisano (1996), who suggested that the right point of time of learning can play a significant role, dependent on the organisation. In addition, Pisano

(1996, p. 1118) suggested future research could address 'how firms build their scientific knowledge bases about process technologies', thus underpinning objective I and II of the current research.
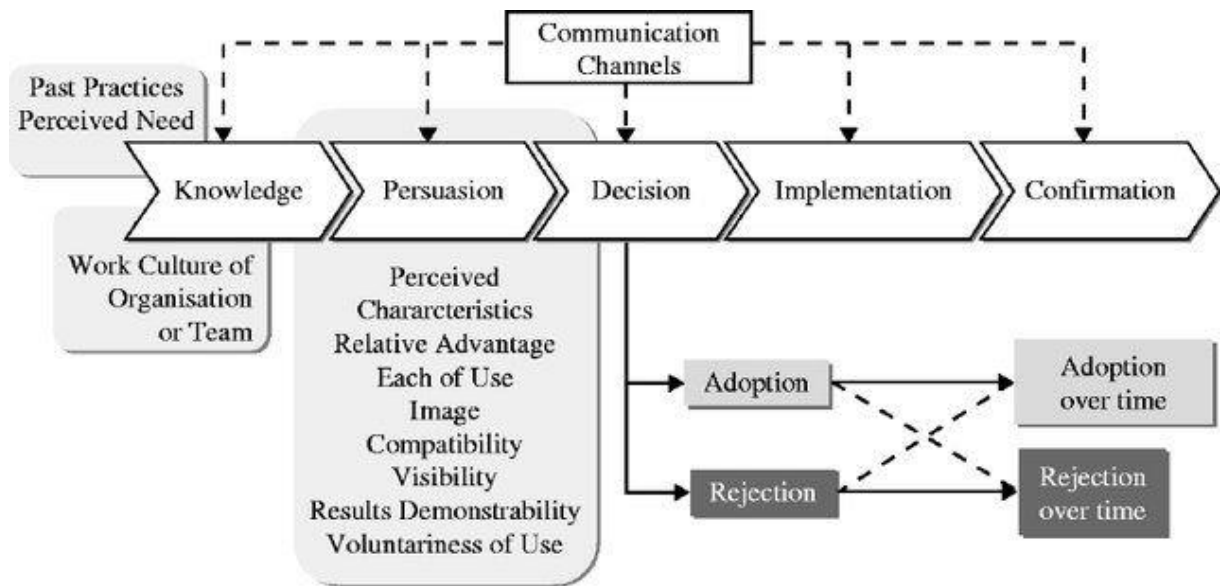
Figure 3. Process of Diffusion of Innovation (Rogers, 2003)

2.2.6 Organisational and Individual Adoption

Thinking of knowledge and how and when it needs to be infused throughout the process, it is interesting to understand where existing research was executed over time. In the early years, much research (prior to Cloud) happened around individual adoption (Fishbein & Ajzen, 1975; Goodhue & Thompson, 1995). At a certain point of time, scholars started to focus on the organisational level (Gauvin & Sinha, 1993; Robert, 1982; Yang, Sun, Zhang, & Wang, 2015). In his paper reviewing the existing Cloud and adoption research throughout recent years, Ray (2016) also came to the conclusion that the separation into individual and organisational adoption makes sense.

Thinking of individual adoption being one stage in the overall process, the question arises as to whether there is research giving more insight into the organisational adoption process. In this context, Gauvin and Sinha (1993) describe an early model consisting of two stages, but which can be challenged with its fit for the Cloud. Already, the first of their suggested criteria, company size, in stage one needs to be questioned with regard to the Cloud, as research has shown that company size is not a general influence factor with a view to organisational adoption (Kimberly & Evanisko, 1981; Nabseth & Ray, 1974; Nooteboom, 1989). On the other hand, other subsequent research exists also suggesting at least a two-phased approach (Nooteboom, 1989; Robert, 1982; Yang et al., 2015).

Considering the meaning of knowledge in adoption, there is significant general research dealing with knowledge and learning in organisations (Ettlie, 1980; March, 1993; Zander & Kogut, 1995). The work of Ettlie (1980) introduced valuable results for the current research, as he used empirical studies to consolidate and verify the theoretical stage models that existed until that time. His research built on Rogers (2003) five-stage model from *Figure 3*, and concluded with a sixth stage reflecting the organisational influence in adoption. Ettlie (1980) concluded his work with the stages of awareness, interest, evaluation, trial, adoption and implementation. This is a good starting point, as the B2B focus of the current research deals exclusively with organisations and not the end user.

From an organisational point of view, a quote from Frambach and Schillewaert (2002, p. 172) offers additional insights around organisations. They state that more research needs to be done around 'The factors influencing different pre-adoption stages within the adoption process, rather than the adoption or non-adoption decision itself;'. The idea of pre-adoption stages is in line with Pisano's (1996) observation, who, based on his empirical study, suggested that there are significant influencing factors prior to the real diffusion process. These results are not directly criticising the six stages (Ettlie, 1980), but they could suggest an enhancement of the six-stage model for the current research and to include focus on pre-adoption.

2.2.7 Demand and Supply Chain Adoption

The end of the twentieth century saw research begin in the area of the supply chain side (Frambach et al., 1998). Stoneman and Ireland (1983) showed the influence in the TAM model, while Gatignon and Robertson (1985) built a model based on IDT, including the supply chain side, and subsequently invested in early research to verify the model (Gatignon & Robertson, 1989). The outcome of the supply chain research is the same in all used models: the finding that a supplier can influence the adoption process. The focus topic of learning and knowledge was not explicitly mentioned in the early studies.

Chang, Hwang, Hung, Lin, and Yen (2007) found positive validations that providers can drive adoption actively by knowledge in an IT environment. Kinuthia (2015) even provided evidence that, in a Cloud environment, the supplier can increase adoption by supporting the increase of knowledge of their clients.

There is research stating that 'the direct influence of innovation development activities and processes on adoption remains under-researched' (Frambach et al., 1998, p. 172). Hsu and Lin (2016) offered further guidance when speaking about future research in the context of SaaS as a specialty of the Cloud and services from the supplier side. They

stated that future research 'should examine whether these characteristics influence intent to adopt' (p. 816). Other scholars (Salum & Rozan, 2017) investigated SME (small and medium-sized enterprises) providers' influence around knowledge and came to the same positive results as (Chang et al., 2007; Kinuthia, 2015), advising that their work around SME now suggests an 'opportunity to develop a new model that can target other players' (Salum & Rozan, 2017, p. 751).

2.2.8 Adoption and Knowledge

There is very little research around the combination of the subscriptions, adoption and knowledge. ProQuest is, at the time of this research, only returning nine peer reviewed articles having those words in their abstract. The research is ranked around the key factors (Safari, Safari, & Hasanzadeh, 2015) influencing adoption, such as relative advantage, competitive pressure and security and privacy (Chekfoung et al., 2013; P. Gupta, Seetharaman, & Raj, 2013). The coverage is around industry clients (Fichman & Kemerer, 1997), SMB (P. Gupta et al., 2013) and non-profit organisations (Wright, Roberts, & Wilson, 2017).

In regard to knowledge, the research results show contrasting results; P. Gupta et al. (2013) summarised that empirical studies around adoption and knowledge were not mentioned in any of the studies as influence factors at all. On the other hand, there is research (Seethamraju, 2015, p. 15) stating that 'there are several challenges identified [] inadequate knowledge of product functionality and features'. This finding supports the research by Fichman and Kemerer (1997) recommending providers to focus on clients where knowledge already exists. A quote from research by Safari et al. (2015) is even stronger: 'For instance, they [the provider] should clarify the relative advantages of SaaS as the most influential factor in SaaS adoption for organisations'. This supports Attewell (1992) recommendations to have providers implementing more than signalling. Furthermore, this is also in line with Wright et al. (2017, p. 524) who stated that customers were able to focus on their business after 'overcoming the knowledge barriers associated with SaaS implementation'. This was even more concretely stated in 'SaaS Providers [] share knowledge and skills in order to provide a better service to consumers' (Chekfoung et al., 2013, p. 69).

2.2.9 Adaption vs. Adoption

Articles covering adaption and adoption do not necessarily pay attention to the difference, as some authors even mix up the terms ("Pacific to boost customer cloud adaption via Microsoft," 2015; Wood, 2017). Looking into academic innovation research, Rossini

(1975) discussed details around adaptor and adopter and innovator. The use of the criterion of cognitive demand makes it possible to build a sequential alignment, from adopter to adapter and to innovator, meaning Rossini (1975) is positioning adaption after the adoption. In research around the Cloud, the term adaption is used to describe how well customisations can be made to fit the Cloud to organisational needs in migration scenarios (Zhao & Zhou, 2014). This is in line with Rossini's (1975) starting points. From a terminology point of view, Rossini (1975) research could be positioned in a Cloud world as part of the confirmation stage (Rogers, 2003) or the implementation phase in the organisational learning model (Ettlie, 1980), but could also be treated as a separate stage. To keep the current research as general as possible, it will treat "adaption" as a separate stage, which also matches migration research (Zhao & Zhou, 2014). Future empirical work similar to that by Ettlie (1980) could remove or confirm this additional stage.

2.2.10 Communication Channels

Rogers (2003) does not go into further detail around the communication channels in *Figure 3*. This was criticised by Attewell (1992), who viewed these as generic, and that a differentiation into signalling and know-how transfer was needed. Signalling is defined in this context as 'communication about the existence and potential gains of a new innovation' (Attewell, 1992, p. 4). Even with some research suggesting that signalling can happen without any communication (Mansfield, 1985), this cannot be generalised. So, in general, without signalling, the existence of products would not be visible to potential adopters. The aim of the current research is not around the question of how to create visibility for a new product, but to focus on the adoption. Therefore, it would make sense to think of an adapted and enhanced version of *Figure 3* and to split the communication channel into signalling and learning of knowledge. Table 1 is a starting point, outlining the stages found in literature dealing with adoption. It needs to be mentioned that (Attewell, 1992) criticised the fact that there is research (Pavitt, 1984) using the term "knowledge transfer" when investigating how providers are providing information, whereas "transfer" is, according to him, too close to the approach of signalling. The papers quoted in this context are all from a time where digital learning and communication approaches were not yet available. For this reason, the current research follows the general approach of treating any knowledge transfer as different from signalling. The current research also acknowledges that there are statements that research around the signalling and learning from Rogers (2003) and others supporting providers is not necessarily a general fit for all cases (Brown, 1981), as the current work proposes a general framework for the Cloud industry that needs further testing.

In this context, the suggestion that 'new research might also consider the marketing (change agent) actions of the innovating firms' (Gatignon & Robertson, 1985) supports this research, even with the word "marketing" being used, as the focus is on the "change".

2.2.11 Summary of Organisational Learning Stages

A suggestion of how to summarise the organisational learning stages researched by Ettlie (1980) can be found in Table 3 and is structured in the same way , showing in each line either the stages suggested by Ettlie (1980), or the additional suggested stages based on the literature research of the current work. In column one, a suggested stage name is shown if this is not an existing stage (Ettlie, 1980), and in column two, for all stages that are not from Ettlie (1980), the source description. This is a summarising for this research as well as soft- or hardware providers outlining all stages wherein they can influence adoption by providing knowledge and could be a starting point for future research. That a change in learning in organisations is needed was already researched (Senge, 2003, 2006), but a future guidance is still missing.

Table 3

Suggested stages where knowledge is influencing adoption

Stage Name	Comments / Existing Research
Pre-Adoption	Stage suggested based on research by Pisano (1996) and (Frambach & Schillewaert, 2002)
Awareness	Stage 1 from Ettlie (1980)
Interest	Stage 2 from Ettlie (1980)
Evaluation	Stage 3 from Ettlie (1980)
Trial	Stage 4 from Ettlie (1980)
Adoption	Stage 5 from Ettlie (1980)
Implementation	Stage 6 from Ettlie (1980)
Adaption	Stage suggested based on (Rossini, 1975; Zhao & Zhou, 2014)

Note. Adapted from (Ettlie, 1980) and extended by suggestions from Rossini (1975), Pisano (1996), Frambach and Schillewaert (2002), and Zhao and Zhou (2014)

2.3 The Research Gap

This chapter covers a critical review of literature around the aim of the current research to increase knowledge of how eLearning drives organisational product adoption. There is a solid base of research in organisational product adoption in general, but the influence

of eLearning on product adoption without discussing other learning methods, like instructor learning, are very recent research areas with many open questions and looks to be under-researched.

In detail, the analysis showed that the usage of eLearning in organisations needs further research (Greg, 2016; Sorgenfrei & Smolnik, 2003). In this context, it is also stressed that future research should especially focus on software, hardware and new technologies in general (Paul, 2014; Sun et al., 2014). This leads to the first research question for the current work

- Why and how are clients applying eLearning today?

This research question is further underlined by Rogers (2003, p. 173) who states: 'To date, few diffusion investigations deal with how-to knowledge, although it must be a fundamental variable in the innovation-decision process'.

In recent research around Cloud providers, it is stated that they should 'deepen their understanding with regard to SaaS adoption' (W.-W. Wu, 2011, p. 15064). This will help their clients, as Wright et al. (2017, p. 524) stated that customers were able to focus better on their business after 'overcoming the knowledge barriers' during the implementation. W.-W. Wu (2011) refined those thoughts by stating that optimised practices are needed: 'SaaS providers should offer more powerful optimal practices' (p. 15063). There is, furthermore, also guidance on how Cloud providers should implement beyond the word "practice" and 'share knowledge and skills in order to provide a better service to consumers' (Chekfoung et al., 2013, p. 69). This leads to the next research question:

- How can eLearning be used most efficiently to drive organisational product adoption?

Taking into consideration that (R. T. Frambach, H. G. Barkema, B. Nooteboom, & M. Wedel, 1998) stated that 'the direct influence of innovation development activities and processes on adoption remains under-researched' and 'One of the limitations of innovation research has been its typical backward-looking focus on technologies for which diffusion has already run its course' (Fichman & Kemerer, 1997, p. 1359), it seems that there is a gap that can be described with the third research question

- How could the industry alter eLearning to increase product adoption?

2.4 Summary

This chapter identified three research gaps in the aim of this work, leading to three research questions. Those research questions support the answer of the identified

objectives as outlined in Chapter 1. Table 4 combines the research questions with the already defined aim and objectives from Chapter 1 in Table 2. For easy visualisation, Table 4 repeats, in the first four lines, the aim and objectives as defined in Table 2, followed by the research questions matching each of the objectives. Seeing the relationship of each objective with the matching research question underneath allows, later in the discussion chapter, an easy understanding of the results of this research.

Table 4

Objectives and Research Questions

Aim		
How eLearning drives organisational product adoption: an exploratory multi-case approach		
Objective I	**Objective II**	**Objective III**
Examine how eLearning is used in organisations	Explore the barriers and challenges for the usage of eLearning in organisations	Provide recommendations on how eLearning can be used to drive product adoption
Research Question I	**Research Question II**	**Research Question III**
Why and how are clients applying eLearning today?	How can eLearning be used most efficiently to drive organisational product adoption?	How could the industry alter eLearning to increase product adoption?

3 RESEARCH STRATEGY

After determining the research questions in the literature review in Chapter 2, this chapter is the next logical step following Amy and Stacy (2007) who stress that good research is asking the right question, as done in the literature review, and then choosing the right method – and not in the other direction. The reason for following a strict methodology and philosophies is the foundation for a study to be evaluated (Ghauri & Grønhaug, 2005). A well-designed research challenges existing facts and can suggest new theories. Collis and Hussey (2013, p. 3) state in this context that 'Looking at the nature of research, this tells us that researchers need to use appropriate methods for collecting and analysing research data, and to apply them rigorously. It tells us that the purpose of research is to investigate a research question with a view to generating knowledge'.

The chapter follows, in general, the logic of the research onion (Saunders, 2015) and is divided into sections, covering Philosophy and Research Approach (3.1), Method and Data Collection (3.2), Details around the Interview (3.3), the Selection of the Cases (3.4), Data Analysis (3.5) and Limitations and Ethics (3.6).

3.1 Philosophy and Research Approach

3.1.1 Philosophical Principles

Looking into the basics of philosophy, the two key principles to be understood are ontology and epistemology, and at least the philosophical points of view of positivism and interpretivism as the most opposite research paradigms. All four are explained in the next four paragraphs.

Ontology is concerned with the nature of social entities (Bryman, Bell, & Harley, 2019). These are primarily divided into two categories, and are entities that can be considered objective, and those considered as social constructions. Although there are more details, the concepts of objectivism and constructivism are the right starting point to explain the contrary points of view.

Objectivism is an ontological position that implies that social phenomena confront us as external facts beyond our reach or influence (Bryman et al., 2019). Thinking in this context of the example of an organisation is a good approach to visualise the fact that an organisation has its own rules, its own processes, and its own mission statement. The details may be different from organisation to organisation, but the reality is external to the individuals dealing with the organisation.

The positivist paradigm is one of the main paradigms of academic inquiry and business

research, but also difficult to pin down (Bryman et al., 2019) as it was used in many variations throughout history. (Bryman et al., 2019) summarise the five key properties as: 'only phenomena and hence knowledge confirmed by the senses can genuinely be warranted as knowledge'; 'the purpose of theory is to generate hypothesis'; 'knowledge is arrived at by gathering facts'; 'Science must (and can) be conducted in a way that is value free'; and finally 'clear distinction between scientific statements and normative statements and the former are the true domain for scientists'.

Interpretivism is characterised by (Bryman et al., 2019) as understanding the differences between the researched individuals and their social interaction, or, in other words, it requires an empathic understanding of the behaviour of the researched people.

As a summary for this sub-section, Table 5 from Carson (2001) encapsulates the above paradigms and adds their main properties.

Table 5

Overview of philosophical paradigms

	Positivism	Interpretivism
Ontology		
Nature of 'being'/nature of the world	Has direct access to real world	No direct access to real world
Reality	Single external reality	No single external reality
Epistemology		
'Grounds' of knowledge / relationship between reality and research	Possible to obtain hard, secure objective knowledge	Understood through 'perceived' knowledge
	Research focuses on generalisation and abstraction	Research focuses on the specific and concrete
	Thought governed by hypotheses and stated theories	Seeing to understand specific context

Note. Source Carson (2001, p. 7)

3.1.2 Research Approach

After the overview of the philosophical paradigms, the next step is to evaluate the research questions of the current research against the properties of the paradigms. Starting with interpretivism leads to the exclusion of this paradigm, as, for example, the first research

question "Why and how are clients applying eLearning today?" is not "looking for specific and concrete" but searches for "generalisation and abstraction". This is the same for research question two and three. Additionally, Carson (2001) states that 'in positivism the researcher is independent but in interpretivist research the researcher is involved', and, in the current research, the author, who is working in the IT industry, must not be involved so as to create a maximum valuable contribution to practice. On the other hand, the current research questions have a practice context. Historically, the traditional research approaches in this case are based on a positivist paradigm with quantitative or natural science approach (R. B. Johnson & Anthony, 2004).

Looking now to the other extreme, positivism could be a fit as the researcher has access to the real world, and the research questions are looking for generalisations and abstraction. In this case, data collection typically happens by questionnaires, survey data or historical numerical data (Saunders, 2015). On the other hand, considerable recent business research has used qualitative methods based on a postpositivist paradigm (Cassell, Cunliffe, & Grandy, 2018; Eng, 2014; Greenan, 2016; Tidhar & Eisenhardt, 2020) and Eisenhardt (1995) and Yin (2003) created extensive guidance as to how to drive business research based on the postpositivist approach. This is an interesting development, as initially, postpositivism was typically used inside education research, as it helps to avoid bias based on power differences (Dewey, 2009). It is important to keep in mind that the current research deals with knowledge delivery via eLearning, but the research questions have a practice focus and investigate when eLearning can be used more efficiently and do not deal with questions around education itself. This means that, when evaluating which philosophy to use that fits the research questions, it needs to be kept in mind that all research questions are dealing with the practice aspects of product adoption and innovation, and not with how education can be improved.

For the current research, this means it needs to evaluate the current research question in a very detailed manner to understand what the right solution is, especially as postpositivists see their paradigm as an extension to positivism, which means both are very close to each other.

Postpositivism was developed based on primarily five known challenges with a positivist approach:

1. As already mentioned, postpositivism needs to be seen as an amendment to positivism (Alexander, 1995).

2. Postpositivists accept fallibilism as an unacceptable fact of life and that we cannot

be sure that phenomena that we have not yet experienced will resemble those that we have experienced in the past (Phillips, Burbules, & Swann, 2001).

3. In opposition to the beliefs of positivists that the researched object and the researcher are independent, postpositivists accept that the history and knowledge of the researcher can influence what is observed (Robson, 2016).

4. Postpositivists achieve objectivity by understanding the possible effect of biases (Phillips et al., 2001; Popper, 2002; Zammito, 2004) and power differences (Dewey, 2009),

5. And last but not least, postpositivists accept both qualitative as well as quantitative methods to be valid approaches (Lindlof & Taylor, 2011; Popper, 2002).

The next paragraph discusses how the current research questions fit challenges 2-5 (Collis, 2013). The context for the current research is in outlining the changes that are in progress in the practice area of all three research questions. This means there is evidence from a practice point of view that possible answers to the research questions are in the progress of being changed. This is exactly one of the reasons for using a postpositivist approach and not a positivist stance (Phillips et al., 2001). Knowing that the expectation to the current research is to drive innovation, there is, furthermore, existing research from Fichman and Kemerer (1997) stating clearly that 'One of the limitations of innovation research has been its typical backward-looking focus on technologies'. This is indication that a postpositivist paradigm is a much better fit for the research questions than a positivist. Taking a detailed look into the first two research questions, dealing with the current usage of eLearning, the question could come up as to whether those could not be better answered from a pure positivist point of view. In regard to this thought, literature around organisational adoption is still showing open questions around the points of time for learning (Ettlie, 1980; Pisano, 1996). A backward-looking quantitative approach would, on the one hand, probably be a fit considering driving a contribution to practice, but the current work is supposed to drive knowledge not purely as contribution to practice. The knowledge contribution is as important. And, taking the position of Phillips et al. (2001), the current research contributes much more to knowledge without losing track of the contribution to practice if it also investigates the research questions around current usage of eLearning from an explorative way and to build a solid foundation for future research around organisational adoption.

The topic discussed in the next paragraph covers the usage of a postpositivist paradigm as a fit to the current questions around the statements of the researcher influencing the

outcome (Robson, 2016). From a traditional business point of view, quantitative approaches are a very good solution. Companies invest a great deal of money for research from within the industry without questioning at all their quality. A good example are associations like TSIA (Lah, 2017; Manning-Chapman, 2018b; TSIA, 2019), which provide quantitative research based on existing data and surveys amongst their members. But, as already mentioned above, the current work has the vision to go far beyond this and to contribute a significant new piece of knowledge. A positivist could argue that the position of the researcher does not matter, and that anybody could ask the question as to whether the current research is different from a typical business research, which TSIA focuses on. From this point of view, the decision for the current research is to adopt the position of Robson (2016) and pay especial attention to the rigour of the research, as the researcher is part of the ecosystem of learning. The expectation is to be able to drive maximum value of the research results, especially thinking of the foundational character of the research.

Finally, the following paragraph investigates the general statement that postpositivism is often used inside education, and whether this general statement is applicable in the current context. At first sight, it might seem to be that the current research deals with education. But, taking a closer look, it needs to be highlighted that, even dealing with the area of education, the research is investigating the sales aspect and results of adoption; this means the research is not with education itself. There are already other researchers using postpositivism in other areas (Bill, 1997; Bisman, 2010). It is interesting to mention also Deleon (1998), whose discussion around policies is, in some ways, similar to the current research. They combine in their postpositivist discussion both qualitative and quantitative methods, concluding that, since 'perfect predictions are not possible nor are they likely […] and perfect understanding is ephemeral', to 'use them [quantitative and qualitative approaches] to inform each other'. This is a good analogy to the current research, as it deals with a time of change (Walker, 2018) and business looking for additional guidance. Using one to inform the other is a good fit based on this discussion.

3.2 Method and Data Collection

This section outlines the next layer in the research onion (Saunders, 2015), which covers the decisions around the choice of using the multi-case approach and details around which data sources are used, how many cases are used, the decision for the holistic case approach, how the cases were selected, improvement of case approaches by triangulation and finally the weaknesses of case approaches and mitigation solutions.

3.2.1 A Multi-Case Approach

The choice of the method is based on the work of Yin, Bateman, and Moore (1985). Following their argumentation, they suggest a decision for the method based on the research questions and using the steps shown in Table 6. This table shows a research method in each line, and Yin et al. (1985) suggest the usage of the methods based on certain keywords in the research questions (column one), the question as to whether the researcher has control over the events (column two) and if the research deals with contemporary events or not (column three). Evaluating the table from top-down starts with the question on whether to use experiments. This is not possible, as there is no control about the events in the current research. Archival analysis and history do not fit as they do not cover contemporary events. This leaves a decision between survey and case approach. Going back to the research questions, as shown in Section 2.3, all questions have the keywords "how" or "why", and none of them in the context of "how many" or "how much". This means surveys cannot be used and leads us to the suggestion to use case studies to cover all three research questions with a mono method. This detailed thought process is in line with the high-level argumentation by Fichman (1990) who stresses that a case study is the right one for future research around organisational innovation.

Table 6

Method choice based on research question

Method	Form of research question	Requires control over behavioural events?	Focuses on contemporary events?
Experiment	How, why	Yes	Yes
Survey	Who, what, where, how many, how much	No	Yes
Archival analysis	How, why	No	Yes/No
History	How, why	No	No
Case study	How, why	No	Yes

Note. Based on Yin et al. (1985)

With the decision above to use a case study method primarily following the guidance of Eisenhardt and Graebner (2007) and Yin (2009), it needs to be highlighted that there are other researchers using variations of the method, as for example outlined by Yazan

(2015). To clarify, as t there is not one clear defined case methodology, the current document uses the term "case approach", reminding that, with the decision to follow Eisenhardt and Graebner (2007) and Yin (2009), it uses one of the multiple ways to approach case studies.

3.2.2 Data Sources

On the details of the data sources for the case approach, Yin (2009) describes six commonly used data sources: documents, archival records, interviews, direct observation, participant-observation and physical artefacts. From the six proposed sources (Yin, 2009) there are three data sources used in this case approach: interviews, participant observation and documentation.

Regarding the interviews, researchers differentiate in general between structured and unstructured interviews. The first, also called survey research, usually leads to fixed responses and quantitative sampling. The latter gives flexibility and is usually used with "why" and "how" research questions. As not only this pilot research but also the overall research is of exploratory nature, the unstructured interview has advantages for this case approach. However, there is an alternative to unstructured interviews, the so-called semi-structured interviews (Ghauri, 2005), which have the benefit of reducing bias compared to the unstructured approach. As this study follows a postpositivist paradigm, and postpositivists always need to be cautious around bias (Phillips et al., 2001), this is a big advantage of this approach. Another advantage of semi-structured interviews is the fact that they can be more easily replicated. As replication is, in general, often questioned in case approaches (Yin, 2009), this adds to the preference over unstructured interviews. Talking about the second data source, participant observation, the author's research diary is used as evidence, as suggested by (Nadin & Cassell, 2006; Yin, 2009). As a third data source, profiles and company information from LinkedIn are used as this is shown to be a good source to add data to academic research (Kreiss & Jasinski, 2016; Norris-Tirrell, Rinella, & Pham, 2017).

3.3 The Interviews

3.3.1 Selection of the Questions

The interview questions of the semi-structured interviews are selected to provide answers to the research questions. For each research question, there is a main question to ask, and then additional questions dependent on the answers to drive more details. The main interview question asked per research question can be found in Table 7. The table shows in each of the three columns in line two one research question and in line four the

matching interview question. The additional questions can be found in Appendix A1.

Table 7 Interview Questions

Interview Questions

Research Question I	Research Question II	Research Question III
Why and how are clients applying eLearning today?	How can eLearning be used most efficiently to drive organisational product adoption?	How could the industry alter eLearning to increase product adoption?
Main Interview Question I	**Main Interview Question II**	**Main Interview Question III**
If you think back to the time of the projects: When did you use eLearning to train the project team?	At which point throughout all phases was eLearning most efficient to drive product adoption?	What do you think would be the best point of time and the best way to use eLearning to drive product adoption?

Note. The whole interview guide can be found in the Appendix A1

3.3.2 Virtual Interviews

For the execution of the interviews of the current global case approach, the question is how the interviews can be executed. Although there is relatively recent critical research around using web conferencing software for qualitative research (Seitz, 2015; Weller, 2017) there is also new research suggesting that there can also be advantages (Archibald, Ambagtsheer, Casey, & Lawless, 2019; Lo Iacono, Symonds, & Brown, 2016). The advantages are especially around the reach into a global audience and flexibility, as needed in the current work (Archibald et al., 2019). Especially regarding statements from critical research, Weller (2017) concluded that 'if the audio and video quality are good and the researcher and participant are comfortable with the mode then they offer a degree of flexibility and informality that physical co-present interviews can lack'. Given the current audience in large companies, the quality of the internet connection and the experience with web conferencing, there is no question. Therefore, all interviews were conducted using the Edinburgh Napier University approved web conferencing software WebEx, and all participants agreed to the recording of all interviews, resulting in seamless documentation of the work. The quality of all internet connections and recordings was excellent, except for one expert interview at the beginning. In this case, the expert was initially in his car on a mobile phone, which explained the lower quality. This changed once he arrived in his office.

The positive experience around the interviews could be a subject for future research around the usage of virtual interviews in global studies with a contribution to practice.

3.3.3 Transcription

After the interviews, the next step is the transcription of the recorded interviews text using a professional transcription service (CGBizCorporation, 2020) and anonymisation. All data are available in a case database for review on request from the author (Ziegler, 2020). For non-English speaking interviews, a service based on certified simultaneous translators doing the transcribing was used (Proofers, 2021) . Before deciding to use a professional transcription service, the consideration was made to do a manual transcoding, as this is considered to create a better understanding of the subject. As, in the final data analysis, every word will be important, the decision was done to rely on professional services guaranteeing 99.9% accuracy to increase the rigour of the research. Besides the transcripts of the interviews, the research database also contains the video material, which adds to the rigour of the case approach.

3.3.4 The Case Approach and Theoretical Sampling

The first question following the general decision for case approaches and the to be collected data is the question of how many cases need to be evaluated. It is important to understand that, as Yin (2009) clearly summarises, in case study research the purpose is not to find representative samples, but meaningful cases. Eisenhardt (1989) specifies this with the statement that bases are needed 'which are likely to replicate or extend the emergent theory'. This is often called "theoretical sampling" (Eisenhardt, 1989; Neuman, 2006). In this argumentation chain, the next question is whether one or multiple case studies are needed.

Swanborn (2010) categorised single-case studies that are based as the current research and on the approach of Yin and Eisenhardt into two categories. On the one hand, there are those laying the foundation for new concepts with just a single case, while, on the other, there are single-case studies that speak on their own and, for example, underline existing hypothesis or give examples that are replicable in practice. As the current research is exploratory, both typical reasons for single-case studies do not apply. This is supported by researchers stating that, in general, multi-case studies are a stronger base for building theory (Izak Benbasat, Goldstein, & Mead, 1987; Yin, 2009) and statements from Eisenhardt (1995) that propose, in general, a multiple case approach for decision-making in industries. Some researchers (Baba, 2018; Jr & Wilkins, 1991) are not in agreement with Eisenhardt, outlining, especially, that there are valuable case studies with

one or very few cases. But even they agree that, once the focus is not on a deep investigation of each case, but one of cross-case evaluation, Eisenhardt (1989) argument to use multi-case studies has validity.

3.3.5 Multi-case Approach

This leads to the question of how many cases to use for the current research. There are examples of research with only two cases (Hughes & McDonagh, 2017), but, conceptually,(Eisenhardt, 1989) states that a number between four and 12 is, in most cases, the right decision, while(Miles, 1994) argues the maximum making sense is 15. There is an agreement that the maximum is also limited by the time available for the research. This may or may not be seen in contrast to the statements that cases should be added until saturation is reached (Eisenhardt, 1989; Yin, 2009). Ultimately, however, the right number needs to be chosen based on the research question. For the current research, deciding for a minimum based on the research question means also having to be sensitive around cultural differences, as research (Poon & Yu, 2006; Warner, 2003) indicates that adoption decisions in general, and including the Cloud, are influenced by cultural differences from Asia as compared to Western cultures. For the current research, this results in the decision to limit the research to Western cultures. Using a minimum of three cases, as per the US and EMEA, suggests a minimum of six cases in total. This also matches the above statement from Eisenhardt (1989) suggesting four cases as a minimum and not below.

As the research is exploratory and there is no knowledge around any case structure, like polar cases, the decision is to go, in addition, back to the basic recommendations around case study research (Eisenhardt, 1989; Yin, 2009) and to go for an iteration until saturation is reached if this is needed beyond the six cases. While scheduling the interviews, it was random that the EU cases were executed prior to the US cases. After the interviews of the first six cases, there were clear keywords and themes emerging, so that there was no need to increase the number of planned cases. However, as getting to the right people was complex and took more time than expected, both in the pilot and subsequently in the final case approach, there was one additional interview already scheduled for the US region, although it was uncertain whether it would happen. Finally, the interviewee showed up and this case is documented as the seventh case. This case did not add additional cross-case keywords or themes, but still added an additional industry with the same themes and, with this, it strengthens the research by increasing the variety of the case selection (Patton, 2002). On the other hand, the case also confirms that the right number of cases was selected as no new themes came up in the seventh case,

suggesting that a certain saturation had been reached (Eisenhardt, 1989; Yin, 2009).

3.3.6 Holistic vs. Embedded Case Approaches

Having decided on a minimum of four cases, the number of cases, there is, following (Yin, 2009), additionally a differentiation that needs to be made between holistic and embedded case studies. The latter one is used if, inside a case, subunits exist that might influence the larger case. As the current research is investigating the global nature of organisations, the holistic approach is used. Yin (2009) recommends being careful in a holistic approach as there is a risk of missing phenomenon in operational details. The current research mitigates this challenge by adding a network sampling in the data collection inside each case.

3.4 Selection of Cases

3.4.1 Network Sampling

When it comes to the selection of the cases in a multi-case approach, Yin (2009) advises to treat multiple cases as multiple experiments; therefore, replication is key in the selection, and not sampling. Eisenhardt (1989) clarifies this by saying 'random selection of cases is neither necessary, nor even preferable'. Regarding the possibilities of selection, Patton (2002) summarised the existing approaches in literature and came up with a table of 15 different types of purposeful sampling. From the 15 sampling methods, the described snowball or network sampling has an interesting advantage, as it is almost always used for purposeful sampling where there are no lists of the population available, and alternatives like screening are not possible (Given & Knowledge, 2008; Lavrakas, 2008). This makes it a good fit for the current exploratory case approach. The drawback of this sampling approach is the risk of bias introduced by the starting points that the researcher chooses (Given & Knowledge, 2008). The current research mitigates the risk by using three different groups of people to start the network sampling. This assures minimum bias from the researcher in choosing the cases intentionally. To further reduce the bias, the criterion was put in place that none of the interview partners were part of the researcher's network prior to the interviews. So, having investigated the challenges of the network sampling and its mitigation in this section, the decision for the current research is to use network sampling.

3.4.2 Three Starting Points for the Network Sampling

This sub-section describes how the network sampling was executed. The researcher uses three networks as starting points for the sampling. First, his network to the top training

companies ("2019 Top IT Training Companies," 2019) to ask them for their interesting clients and links to HR leaders responsible for the training strategy. Second, his network inside IBM. The approach is again the same as with the training partners, which means asking colleagues for clients they are working with and contacts into HR, and thirdly LinkedIn. The limitation was set to use Fortune 500 companies or at least large companies, where large was defined as more than 20,000 employees. Furthermore, the limitation was added that the researcher had never worked in any of the companies nor knew any of the interviewees before and, based on the LinkedIn information of all interviewees, none ever worked at IBM. So, the above approach results in a random selection of cases, without any influence of the researcher to select the cases. The research diary also confirms that all suggested companies were contacted and all people that volunteered were interviewed. As outlined in Section 3.3.5, the plan was to run six interviews, three in the US and three in the EU, but, finally, one additional interview was scheduled and documented as case C7. This underlines the rigour used in the random selection and rigorous documentation of the case selection.

3.4.3 Maximum Variety

After starting to receive names to run interviews and build cases, the researcher realised, after the third interview, that the executed interviews covered already three different industries. As the pilot study showed that finding interview partners is not easy and, based on the exploratory character of the research, there was no plan to select a specific industry and not to spread internationally across industries, especially as, in a multi-case approach, the replication is key and not the sampling (Yin, 2009). However, as the first cases showed that multiple industries were covered by accident, the selection criteria were revisited. Patton (2002) outlined a selection of "maximum variety" to drive the data; therefore, an additional criteria "each case must come from a different industry" was added for the future case selection. Independent of the results, there will be additional research needed in each of the industries to verify the industry specific findings, but the maximum variety will again increase the value of the research as the results will 'cut across cases and derive their significance from having emerged out of heterogeneity' (Patton, 2002). The work around the first three cases was not influenced as they were already from three different industries.

Table 8 and Table 9 give an overview of each case and interviewee. Table 8 focuses on outlining the details of each case. Each line shows one of the cases; column one contains a code for each case sequentially coded C1-C7. The cases and interviews are numbered in the sequence they were executed between January and October 2020. In addition,

column one also shows an indicator of the region as either "EU" or "US", as Europe (EU) and US were chosen as the two target regions with similar adoption approaches. The second column shows the industry sector as well as an indication of the size of the company, followed by the third column describing the case. Each case overview describes the general case, followed by the expectation to this case.

Table 8

Overview of Cases

Case / Interview / Region	Sector / Size	Overview Case
C1 / I1 / EU	Distribution / Fortune 100	The company earns revenue out of distribution of hardware and software. With this mix, the company is an interesting example with a history of more than 50 years and business covering a more heritage area as well as modern software up to Cloud solutions. The interview partner was the director, responsible for the HR graduate programme on the software side of the company, who also has extensive experience in various roles inside the company. **The expectation** is to get insights into a company with both an old heritage business (>70 years) and new modern units. There is deep experience in the company around learning. How is the experience internally? Insights should be of interest for all Fortune 100 companies.
C2 / I2 / EU	Service >$7B	They work together with one of the Fortune 100 companies when their clients need consulting. With this, Case C2 adds the services sector to the chosen cases. The interviewee I2 has a deep background in learning and did considerable eLearning development in former roles. The expectation as to this case was, on the one hand, to add a view from the professional services industry in general, but also to understand what this industry is suggesting to their clients. **The expectation** is to see what consulting companies are recommending their clients and what they do internally.
C3 / I3 / EU	Medical Care / Fortune 500	The interviewee I3 was one of the youngest leaders in the cases, but obviously had the trust of the company to lead their learning. This makes sense as he had, in his relatively short career, ownership of his own company in the eLearning area as well as additional roles. Obviously, the company was interested to move their learning forward into the modern age. I3 mentioned that he was surprised how slow progress is happening in a large company. **The expectation** is to see if a sector dealing with extensive data security adds insights to the research.
C4 / I4 / US	Medical Equipment / Fortune 500	As expected, data security and confidentiality are important in this sector. I4 stressed multiple times that his statements were his personal statements and not reflecting any official statement of his company, nor did he want to have his or his company name displayed. Compared to all other interviewees, I4 is not in a dedicated role taking care of learning. He is the VP HR, and learning is part of his role. There is no other HR role in the company taking care of learning in a more dedicated way. **The expectation** is how an industry using a great deal of modern technology treats eLearning.
C5 / I5 /	Hospitality /	This is a case in an industry with many employees and many of them changing roles and locations. I5 has much experience from roles in

US	Fortune 500	learning in his early career and experience as VP and SVP in various companies in HR as well as in HR Learning and Development. The expectation of the case is the experience of large enablement reflected based on the employees changing roles and locations. **The expectation** is to gain insights into an industry with many changes in employees and how they use eLearning to drive adoption.
C6 / I6 / US	Learning / >$1B	The company is one of the pure eLearning platform companies and declares that they are one of the leading eLearning companies. I6 had already, prior to joining this company, 20 years of experience in the HR area with HR in general and training employees. It is, in general, interesting that a very modern eLearning and young company is recruiting for this position a senior manager with extensive existing training experience. **The expectation** is to see how an eLearning company uses eLearning differently than a Fortune 100.
C7 / I7 / US	Automotive / Fortune 500 (Until some years ago)	C7 is expected to add value from another industry point of view. I7 is not a VP inside the HR team, but on a director level. However, his role is still responsible for the implementation of learning. He has a deep background in learning. **The expectation** is to gain some additional insights into eLearning in automotive and to see if the cross-case findings of the other industries apply.

Table 9 shows additional details for each of the interviewees. Column one shows a sequential number of the interviewees, following the numbering of the cases, which means I1 is the interviewee from case C1, I2 from C2 and so on. Compared to Table 8 there are three additional lines, labelled E1 to E3. representing the background information of the experts who were interviewed for triangulation. The second column shows an overview of the key career milestones of the interviewees. The career data are extracted from LinkedIn and anonymised.

Table 9

Details of Interviewees

Interviewee	Expertise
I1	• Director, HR Graduate Programme, Fortune 500, Distribution Sector, two years • Director, Sales, Fortune 500, Distribution Sector, four years • Director, Global Education, Fortune 500, Distribution Sector, four years • Manager, Strategic Alliances, Fortune 500, Distribution Sector, two years
I2	• VP, Learning & Development, Consulting Company, four years • Director, Learning, Fortune 500, two years • Manager Consulting, four years
I3	• Manager Training, HR, Fortune 500, Medical Care, two years • CEO and Co-Founder, eLearning Company, two years • Global Learning Development Manager, Consulting, two years • Learning Manager, HR, Banking, two years
I4	• Senior Director, Global HR, Medical Products, Fortune 500, four years • Senior Director, HR Research, Medical Products, Fortune 500, four years

	• HR Strategic Business Partner, two years • HR Director, Mergers and Acquisitions, one year
I5	• VP, Learning & Development, Fortune 100, Hospitality, two years • SVP, Culture & Talent, Fortune 100, Hospitality, two years • VP, Human Resources, Fortune 500, Hospitality, two years • Training Manager & Learning Coach, four years
I6	• SVP, Chief People Officer, eLearning company, six years • Chief People Officer, Security Software, >$300M, six years • VP, HR, various areas, Software, Fortune 500, six years • Sr Director, HR, Software, Fortune 500, three years
I7	• Learning Manager and Quality Auditor, Automotive, Fortune 500, five years • Associate Director, Learning Company, $4.4M, Automotive-related, seven years • Manager, Learning and Development, Engineering, $4.5B, four years
E1	• Director at Learning Institute, Large University in US, three years to date • EVP, Sales and Marketing, eLearning Company, three years • VP, Strategic Partnerships, Project Management Company, three years
E2	• Ed. D., Executive Director, Talent Strategy, Large University, US, four years • Executive Professor of Education Policy, Large University, four years • Chief Strategy Officer, University Global Network, Large University, seven years • Senior Strategist & Market Development Officer, Large University, four years
E3	• CEO, Founder, eLearning Company, 26 years • Learning and Performance Consultant, five years

Note. Summary of key properties of interview partners.

3.5 Data Analysis

3.5.1 Pilot Study

After the design of the research approach, a pilot study was executed having three objectives (van Teijlingen & Hundley, 2002): verifying that the right contacts at clients were chosen, verifying if the general data collection approach was working and verifying if the interview questions resulted in answers to the research questions.

The key finding from the pilot is the fact that, at clients, the right contact is a HR leader who owns the responsibility for learning, and not the usual buyers of IT training today, as those do not execute any strategic decisions, but only buy what exists. This emerged in three independent discussions based on the used partner network when trying to reach the first interview contact, as outlined in Section 3.4.2 . As documented in the researcher's research diary, all three contacted training partners gave the same information, and this was that their typical contacts usually never discuss strategy but have an interest as they are solving tactical short-term training problems. Based on those discussions, the pilot used a HR contact responsible for learning who, after the interview, confirmed that he

was the right choice inside his company.

The first topic to solve in the pilot was to find the right role to be interviewed in each company. To reach large clients of SaaS providers to get their feedback around eLearning, it is important to understand how SaaS providers are training their worldwide clients. Very often, software vendors are using training partners to train their clients. From a client point of view, working with a training company instead of a vendor directly has the advantage that they get training for most of their products out of one hand. When looking for cases and the right contact inside the cases, it sounds logical to work with those partners already established during the pilot. Asking the partners for contacts at their clients was the first idea to find the right contacts. As such, something very surprising emerged. As documented in the researchers' research diary, all contacted training partners gave the same information, and this was that their typical contacts usually never discuss strategy but have an interest, as they are solving tactical short-term training problems. During the discussions, two of the partners suggested to speak to HR Development Executives at clients. Based on these discussions, the current research used a HR Development Lead for the pilot study. He confirmed, after the interview, he was the right choice inside his company. The final study, therefore, uses the same contacts. Most of them confirmed in the interview that they were the right contact. This result is a surprising outcome from the pilot from two aspects. On the one hand, it means that the partners used by software and hardware vendors are reaching clients after the buying decision by clients has already happened. Thinking of the phases of organisational adoption from Ettlie (1980), those only reach phases 4-6. And, for this research, it means a first contribution to practice driving product adoption by using training. Companies need to focus on HR departments in the future to increase the value.

Besides this, the pilot study confirmed that the asked questions were leading to answers to the research questions. The third outcome of the pilot was that there is hesitance of executives in HR to speak in research interviews. This raised the question as whether to also include the pilot interviews into the final study. Some researchers see challenges in doing this based on data contamination (Peat, 2002). On the other hand, there is also the discussion in the literature that, if the data collection does not change between pilot and final study, there can be valuable data in the pilot studies, especially in qualitative research (van Teijlingen & Hundley, 2002). Since the data collection is the same in both the pilot and final research, the data will be included.

3.5.2 Overview of Analysis

The overall approach to the data analysis follows a four-step approach, with the first step

focusing on a within-case analysis, and steps two to four giving input for the cross-case analysis, as outlined in *Figure 4*. All steps of the data analysis are supported using NVivo 12.
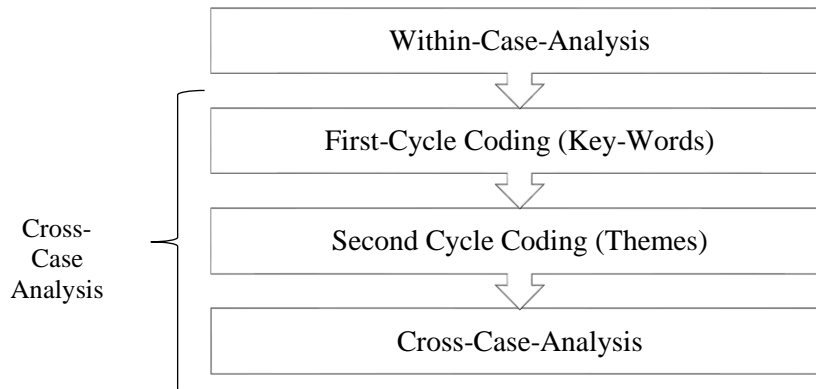
Figure 4. Overview Analysis

3.5.3 Triangulation

Further to the described rigour to stay neutral from the researcher's point of view in selecting the cases, this research uses the concept of triangulation to increase the value of the findings. Jick (1979) states that triangulation adds a 'more complete, holistic and contextual portrayal of the units under study'. Especially from a postpositivist paradigm, triangulation increases validity (Eisenhardt, 1989; Yin, 2009), and it is important to keep in mind that the current research follows the postpositivist approach, as, for example, constructivists do not see triangulation in the same way as helpful to increase validity. The foundational work around triangulation from Patton, Denzin and Lincoln (2000) describes four types of triangulation: investigator triangulation, theory triangulation, methodological triangulation and data triangulation. There is recent research splitting those categories on a more granular level (Farquhar, Michels, & Robson, 2020). They also validate that this is very recent research and, again, the value that triangulation can bring to qualitative research. For the current exploratory research which follows the overall approach of (Eisenhardt, 1989; Yin, 2009), expert interviews are executed in the sense of data triangulation as used by Smith and Kleine (1986) and others to increase validity (Aarikka-Stenroos, Jaakkola, Harrison, & Mäkitalo-Keinonen, 2017; Smith & Kleine, 1986). As outlined by the research, the purpose in data triangulation is not to verify the existing data (Denzin & Lincoln, 2000; Patton, 2002; Smith & Kleine, 1986), but to add a new perspective, which is typical for a postpositivist point of view. It is then up to the analysis to point out where the triangulation supports the existing data and to

understand why this may not be the case and to ultimately build a research that has a stronger validity.

In the current research, the additional data point is experts from the learning industry. Similar to the example from Smith and Kleine (1986), they add a different perspective, especially by selecting experts who have deep insights into the learning industry, but have never worked in any of the sectors of the used cases. The decision as to which interviews partners to use, the number and the interview, mirrors the methodology of the case approach. Furthermore, to achieve a maximum variety during the selection, the interviewees had never worked in IBM, did not have a prior relationship to the researcher, nor had they worked in any of the companies of the cases nor their general industries covered by the cases. Table 9 shows the key career information extracted from LinkedIn in the last three rows. It may stand out that all experts are based out of the US. This was not intentionally so, but, during the search for the experts, the criteria was set that they all needed to be experts globally and not either US or EU. It would need further research to see if there are more experts in the US than in the EU in the subject of this research, but the network used by the researcher happened to result in three contacts in the US. All three are in global roles and with global experience, so that they are a fit to the criteria set for the experts for the triangulation.

3.6 Limitations and Ethics

3.6.1 Limitations based on point of time of research

All interviews, including the pilot study, were executed during the beginning of the COVID19 pandemic in 2020 from April to September. This means in the current study there is no limitation, as the questions were exclusively dealing with the status prior to the pandemic. None of the interviews discussed in any relation the COVID19 pandemic nor did any of the interview participants mention the pandemic.

3.6.2 Case Approach Methodology Limitations

There is much criticism around case approach research and its validity as a research method, but, following Justel, Kidder, and et al. (1985), there is an agreement that, if rigour is applied in the research, then case approaches can be a strong method. To verify the validity of the research design, the commonly applied four criteria for judging quality of research design are used. Table 10 from Yin (2009), based on Justel et al. (1985), outlines the tests' criteria. The table shows for each of the test criteria mentioned in column one multiple possible tactics in column two, and adds in which phase of the research this tactic typically appears. Yin (2009) points out that, in exploratory studies

such as the current one, "internal validity" does not play a role. So, "construct validity" first needs to be verified. As outlined above, multiple sources of evidence are used in each case by using interviews, observations and documentation. Furthermore the case will be documented in a case database (Ziegler, 2020) to establish a chain of evidence. The database is accessible on request. The planned industry experts are used as key informants to give additional weight to the analysis. They will not review the draft study, but their interviews will be used as triangulation during the analysis. Moving forward in Table 10 to "external validity", the detailed approach on how to select interview partners and how to collect data will be documented in detail for a replication possibility. Last but not least, in order to verify "reliability", the case approach protocol will be stored together with all other data in the established case database (Ziegler, 2020).

Table 10

Method choice based on research question

Tests	**Case approach tactic**	**Phase of research in which tactic occurs**
construct validity	Use multiple sources of evidence Establish chain of evidence Have key informants review draft case approach	Data collection Data collection Data collection
internal validity	Do pattern-matching Do explanation-building Do time-series analysis	Data analysis Data analysis Data analysis
external validity	Use replication logic in multi case approaches	Research design
reliability	Use case approach protocol Develop case approach database	Data collection Data collection

Note. Four tests of validity adopted from Justel et al. (1985)

3.6.3 Ethics

To discuss the ethical component of the current research, the overview of Matthew (2014) is used. He summarises seven key principles to pay attention to as: respect for persons, beneficence, justice, privacy, confidentiality, anonymity, honesty and transparency, and declaration of interests. Conducting the semi-structured interview and having the participant sign the participant consent form covers most of the topics that are applicable. For the case approach, the principle of anonymity needs to be highlighted, as this was stressed already in early discussions of finding participants as the key topic. Participants

made this the most important prerequisite. To avoid any risks, all data of all cases are completely anonymised, and in addition, to ensure anonymity, all interview partners are assumed to be masculine, and are referred to as "he", even when the interlocutor is a female. The use of "his" in the thesis is defined as a gender neutral. In addition to the above outline of the ethical discussion, the case approach was approved by the university's research ethics committee prior to its execution in the field.

4 FINDINGS

This chapter presents the findings of the collected data. The chapter is a pure presentation of the facts found in the interview, without any interpretation nor any reference to literature. The analysis is supported by the verbatim quotes from the interviewees (Tracy, 2010). The reasons for doing this is the fact that qualitative research is often questioned and the same facts can be interpreted in different ways (Mårtensson, Fors, Wallin, Zander, & Nilsson, 2016), so the findings need to be linked in a sufficient way to the collected data.

This analysis consists of two parts. The first part is a within-case analysis, and highlights interesting findings of each case, following by a deep dive into two cases. One of them is a special case based on the industry and the second one based on the experience of the interviewee. The second part follows the research questions and cross-case themes and concludes in the final cross-case analysis. The literature review showed that there are three key research questions. The first one asks where eLearning is used today, the second what is important in that it is working well to drive product adoption, and the third to figure out what clients think about how the ideal eLearning solution could look like to drive maximum product adoption. The cross-case findings are presented with their relationship to those three research questions.

4.1 Within-Case Findings

4.1.1 Details of all Cases

The first step in the analysis is a case-by-case analysis looking for interesting themes inside each case based on the strategy proposed by Eisenhardt and Graebner (2007). Table 11 shows interesting findings that were unique in some cases, but also including the results from the keywords as well as themes search. Eisenhardt (1995) highlights that the display of findings in case approaches in a table stresses the used rigour of the work, but is also not necessarily what the reader expects, and showing strict rigour is important.

From a structure point of view, Table 11 has one line per case. Besides the case number in column one, the table contains four columns for each of the identified keywords (ad-hoc, platform, artificial intelligence, personalised), followed by five columns for the themes identified in the analysis (run upfront training, immediate, move while learning, AI personal assistant, compliance training) and right besides this a column indicating what the key perception around eLearning was from this interviewee, which may give some additional insights for future research, which will be further elaborated on in more

detail in Table 12. The last column contains quotes with additional special findings that were unique to single cases that are worth mentioning.

Table 11

Cases, Keywords, Cross-Case Findings

Case	Keywords				Finding					B/C	Special unique findings of this case
	Ad-hoc	Platform	Artificial Intelligence	Personalised	Run upfront Training	immediate	Move while learning	AI Personal Assistant	Compliance Training	Benefit (B) – Challenge (C)	
1		✓	✓	✓	✓	✓		✓	✓	C	Details of what is "immediate" or the "right moment": 'right moment in terms of availability, in your mind, and in time of course and the right moment for in terms of the skills' (Director, HR Graduate Programme)
2	✓	✓	✓		✓	✓		✓	✓	B	'I look at learning, that people themselves know best what they have to learn, should, need and what not' (VP, Learning & Development)
3		✓	✓		✓	✓		✓	✓	C	
4	✓	✓		✓		✓	✓	✓	✓	C	'We are going to have […] learners across [...] five different generational [...] there's a complexity of the way that generational needs are impacted' 'Less activity on this where people are proactively using it as part of their development to grow a new skill' (Senior Director, Global HR)
5		✓		✓			✓	✓	✓	B	'Designing "Artificial Intelligence" gives us the opportunity to influence them when we want people to learn new skills' (VP, Learning & Development)
6		✓	✓		✓	✓		✓	✓	B	'It's probably as soon as possible. It's as early in the relationship as possible' 'Learning individual into the design team, and they are thinking about... That's how much it has to be integrated' (SVP, Chief People Officer)
7		✓	✓					✓	✓	B	'And in the first year, we saved $380,000 on paper'. '3D glasses that allow to simulate any movement' (Learning Manager and Quality Auditor)

Note. Keywords, themes and quotes outlining unique findings during the within-case analysis.

Going deeper into the perceived benefits and challenges Table 12 shows some key quotes from each interviewee leading to the judgement as to whether the interviewees saw more benefits or challenges around eLearning today. In this table, I3 is especially to be mentioned, as there was no clear position. He saw the benefits and challenges in a similar way today. One explanation could be that he had more experience in the practical implementation of eLearning, but it could also be just his personality to be more neutral. This table was added to the discussion to give the full picture of the interviewees as well as to motivate additional research around the benefits and challenges of eLearning as it is implemented today.

Table 12

Details of perceived benefits and challenges around eLearning

Interview	Benefits (B) Challenges (C)	Quotes
I1	C	[eLearning] 'Very intense. And I can tell you that doesn't work'; 'But if there's too much of e-learning …they get bored very, very quickly and they get bored in details'
I2	B	'If we think that way, we of course automatically come to topics such as e-learning, platforms, other things, because that's the only way I have quick access to learning'. 'Typical topics, things that repeat themselves over and over again'
I3	B/C	'In any case, a time when it makes sense'; 'What we are now implementing in the IT training are really screen recordings, i.e. classic screencasts from software. Really videos, video recordings, screencasts, from softwares'; 'I'm also a big fan of microlearning, away from this one-hour, two-hour e-learning and then with a test at the end'
I4	C	'…and I'm ready to vomit by the end of it. And I would tell you that type of feedback is impacting things, which is why I think ad hoc is more pragmatic right now'. 'And so how do we enable learning that way or how do we enable progressing work that way as well is a challenge that I'm thinking about'
I5	B	'…but now we have software like Articulate. It's really easy to put things in an e-learning, share them around the globe'; 'we've really used it a lot for compliance and e-learning for those type of subjects, which the information doesn't change very quickly'

I6	B	'…delivering a very consistent message of the things people need to learn before they can actually work here'., 'So this short form learning is, I think, is the short-term skill building capability'
I7	B	'And in the first year, we saved $380,000 on paper';'3D glasses that allow to simulate any movement'

Besides the case details shown in the table, the current research had two interesting cases which stuck out from the remaining ones. Those are case C5 from the hospitality industry and case C7 from the automotive industry. It makes sense to have a deeper look into the case-specific findings as they will add insights that contribute to practice as well as to knowledge of the current research to help build further research based on the current work.

4.1.2 Case C5, Hospitality Industry

There is first the special case C5 from the hospitality industry. Two interesting situations come together in this case. On the one hand, I5 has a huge experience in the industry. He has spent all his career of more than 20 years in this industry, changed between hotel chains, but stayed in the area of human resources, talent and learning and development. Today, he is in one of the Fortune 100 responsible as VP for the Learning and Development of North and South America. With the experience, he not only has a very good view into his own company, but also, 'in my industry', has a serious value as probably not many senior executives in Fortune 100 companies can really speak out of experience across their industry. The second very special property of this case is the fact that the whole hospitality industry 'has not been great at using eLearning' and is still in a very early phase, having started using eLearning 'maybe a year, two years ago', as I5 states. The fact that the industry is in a starting phase around eLearning, together with the experience of I5, is building a case that could be a starting point for any other industry being in an early phase, but also gives insights for future research around how to start using eLearning. The case gives also deeper insights into the research questions of this research from their very special point of view. In the later cross-case analysis, it will be obvious where there is an overlap with other cases, and, in the following, the insights specific to being early in the evolution will be highlighted.

Looking into the first research question, I5 mentioned, as with many other cases, the usage of eLearning for compliance training, but then an interesting statement came up. Not only

solving the problem of having fast and consistent compliance training, but he also stated 'they can do it when they're traveling on the bus or to and from work. They can do it in the evenings. They can do it on their breaks, so that's working out much better for us'. This means I5 solved, on the one hand, a practice problem to drive knowledge, and, on the other, used the mobile aspect to drive additional savings for the company and probably increased acceptance by giving flexibility. None of the other cases mentioned this idea, and this may not be surprising, as industries using eLearning for a longer time were used to doing so on computers in the office or laptops, as this was always the case. In this new starting industry, exploiting new features while introducing eLearning could set a signal also for other industries and for interesting research. When talking about research question two and the most efficient usage of eLearning, I5 describes the centralised rollout of processes via centralised eLearning and their lessons learnt. The interesting statements are around how it works well with eLearning to 'share it around the world, adapt it for anything regional and implement it in all of our hotels within a couple of weeks. So, it was fantastic'. But then he also covers important details around adaption to country rules during the rollout to 'make sure that it meets the country guidelines for the countries in which my hotels are. And then we adapt it, and we push it out quickly'. None of the other cases mentioned the needed adaption. Maybe because it already is an automated process for them, or maybe not all industries are facing local rules. But, in general, even with the need of adaption, the strength of fast rollout of eLearning is obvious. He then further highlights lessons learnt and challenges around the fact that 'sub-countries started the translations before the final product was done'. It seems logical to do the things in the right order, but maybe it is also a reminder that rolling out eLearning is not as simple a project as it sometimes looks. From those practical thoughts, moving forward to the third research question around the vision for eLearning, I5 again has interesting insights, which once more seem to come up only based on the HR and industry experience. He states, on the one hand, the same vision as most other cases around Artificial Intelligence to drive personalised learning. This is in line with all other cases. But then he elaborates on the strengths of this solution beyond just being able to do the job. He sees the development aspect from a HR point of view as 'they're continuously learning with suggestions that are made for them through some type of system of eLearning'. This gives additional ideas for the future vision. He then takes this even a step further: 'And that means that we can influence them when we want people to learn new skills […] It would help our talent development pipeline because we could see where people are, we could measure where they are and make recommendations or recommend them for certain roles based on that. It would be amazing to be able to have something

like that'. Those statements open a completely new approach for a future AI solution far beyond product adoption. The eLearning solution would not only drive value from a productivity aspect and be positive for software providers, but this idea would also drive a completely new vision for innovation for HR.

4.1.3 Case C7, Automotive Industry

The second special case is C7 from the automotive industry. C7 is special from two aspects. On the one hand, the company is differently structured from the responsibility of the learning and development leader. This may or may not be representative for the industry and does not play a role for other companies in the same sector, but it puts I7 in the position of having a different insight in general into the topic of eLearning. In all other cases, there is a VP in HR responsible for this task, but in Case C7 a director level executive with more technology learning focus is responsible. With this setup, this case adds a more detailed insight into each of the themes that came across in all cases. Those insights, in general, confirm and then add details to the cross-case findings of all cases, but in other aspects they give special insights from this case that could be helpful for the automotive industry and future research or even for other similar producing industries with future work.

Starting to investigate the details of C7, it is important to keep in mind, as already mentioned, the background that I7 describes as their experience with eLearning being 'from a technical side'. One of the big examples he mentions where he used e-Learning is a large transfer of a 'nine-month hourly program, 900 hours, nine-month total […] and I took that curriculum and put it online' His statement is that this was 'scary at first', but then he elaborates on user feedback with 'they saw how, this created consistency, standardisation and users then, they really got in line with the whole approach'. It is interesting that consistency and standardisation are mentioned in this case as an important outcome of the usage of eLearning, to be summarised with "uniformity". He states that they even had, prior to the introduction of eLearning, negative feedback from users, that 'they received something different being in the third shift class than a first shift class. It is a consequence from using eLearning that this gets solved'. He makes an impressive example that shows why this is really important in automotive and maybe similar industries where uniformity is key, as he explains the history in automotive: 'Judy's method of changing a tyre might be different than Mike's or Joe's. But the tyre still needs to hold there, it still needs to not go flat, it still needs to be put on the vehicle the right way, everything torqued, all the processes need to be the same'. eLearning created a new standard, that, in the end, significantly increased uniformity because processes and hand

movements of users became standardised and, with this, increased the quality of work. He even further investigated results of teaching of the instructors and realised that, in general, instructors are not reaching the whole class as, according to his opinion, 'there's ten users, there might be ten different ways to touch them, and you have to figure out the common ground', and most instructors ultimately reach six to eight. But worse, he states that, based on age, one method may work today but not tomorrow, which begs the question as to what the instructor is really changing based on the audience. eLearning seems to be, from his view, much stronger as it can be developed taking lots of user needs into consideration.

When talking about the second research question around where eLearning was used most efficiently, he came with an example that does not fit to the overall research, but it is still an interesting factor. His example is impressive, considering that $400k is a lot of money when he describes 'we'd have about close to 200, 180 something users a year in the college I worked in, we graduated about 129 of them a year, okay? And in the first year, we saved $380,000 on paper'. But, returning to the more interesting examples from him, he was focusing already here on testing users, and the efficiency they achieved with a test and then having users learn what they really need. The topic of personalisation, and even AI on a broader scale, comes up in the cross-case analysis, but it sticks out that he already has, on a small scale, experience with this and it seems to work as he used the approach of 'you believe you're proficient at this, prove it to me, and you could test out of the course'.

Around the last research question, he stresses that the personalisation makes sense, as also highlighted in the cross-case analysis, but he also mentions something very specific to automotive or any similar industry. His example was from the military, where obviously pilots exist that use simulations and 3D glasses that allow to simulate any movement or repair, and people do not need to know anything at all as they are guided by the tool. But, besides the strength of this approach, he said 'I'll never forget it, because I've never seen it again. It was a green line that walked me right to the path where this bolt resided'. But much more important from his point of view was the fact that the military had all manuals and all information stored in one platform in one place. The topic platform also came up in the cross-case analysis, but he elaborated on the central storage. According to him, the fact that all is in one place is a big strength at the military, as everything is easy to find. But he also states, 'My gut instinct is, first off, in most corporations, we are worried about our jobs, so we don't share information well enough. That is starters, what I see in corporations. And that is for the two large corporations I've been in, […], both of them

have over 10,000 employees'. When asked for additional topics at the end, he even stressed 'I think standardisation of tools is very important, that things look similar for people'. It is important to keep in mind that this is just one case, but the examples and experience in combination make this a strong statement and it is probably a good starting point for future research or for pilot projects in the automotive or similar industries.

4.2 Cross-Case Findings

This section is the start of the second part of the analysis chapter. In the second part, the cross-case analysis is covered, structured following the research questions.

4.2.1 Findings: Platforms and Compliance Training

With the findings around platforms and compliance training, the first research question is explored: Why and how are clients applying eLearning today?

In all cases, the first topic discussed in the interviews is the current usage of eLearning. This part in the interview is put in place to obtain general insights for research question one, which means understanding the general usage of eLearning today, prior to moving to the question of where eLearning works well. There are, in total, two themes that came up in this part of the interviews, which were "platforms" and "compliance training".

The keyword "platform" is used in six of the seven cases. In general, in the context of eLearning, this is not surprising, but the questions were not around technology, so this needs attention. In addition, the question is why the topic did not come up in the interview of I5. Scanning the transcript of I5 shows that he uses the word "solution". From a purely semantic e point of view, "solution" is not a synonym for "platform". From a context point of view, both words are used together, sometimes even as a synonym, even if this is wrong from a pure etymological point of view. From a pure cross-case analysis, Case 5 is the only case where eLearning does not have a history but has only been used since 'maybe a year, two years ago'. With this background, it could be one explanation that I5 is treating eLearning as a "solution" to problems and is using this word based on this background. From the impression in the interview and the usage of the terms, this also makes sense. As there is no proof from a language point of view that I5 meant really the same as the others, this research assumes that "platform" is a strong keyword and a theme showing up in five of the cases. So, it is a fact that, in all cases, an eLearning platform exists, and the discussion of the platform comes up as a central topic. I7 is the only one who mentions the value of 'keeping all of the things in the appropriate location where you can find it, in one location' during the question of when does eLearning work well. This may give indications for later conclusions around how software vendors could

penetrate their clients' learning environment, as you need to get your content into the key platforms, and they will get visibility. An interesting variation of this was mentioned in Case C4 and C6. In Case C4, the platform LinkedIn was actively provided as an additional platform for the employees. The purpose was threefold as, within the 'area that they're interested in learning about, they can either use it for their own development, or they can apply it to a team that they're working on'. In Case 6, LinkedIn Learning was mentioned as a universal solution, where everybody has access to learning. This supports the idea that Cloud vendors could use this platform to create skills around their platform. Looking into the triangulation with the experts, a similar picture shows up as in the cases, which means two of the experts are using the keyword "platform", and the third expert is again speaking about solutions. Also, in the case of E3, who is not using the keyword "platform" but the term "solutions", there is no real proof that, when using the word "solutions", he meant the same as the others. But the context is again the same. E3 is not in the same situation as I5, meaning he has spent more than 30 years dealing with learning. In summary, the triangulation with the experts underlines the suggestion from the cases that there is a theme around "platforms" that needs further investigation.

The second theme around "compliance training" is a non-expected additional finding for typical usage of eLearning. The term "compliance training" was used by the interviewees as a summary for any mandatory training that employees must attend on a regular basis, for example "export regulations", "sexual harassment" or "security at the workplace". This means the word itself did not get mentioned directly in each interview; the keywords used were "mandatory" (I1), "necessary" (I2), "compliance" (I3, I7), "integrity training" (I4), "hygiene requirement" (I5) and 'around the world […] collect information' (I6). And, in the context, everybody meant the same, which means basic eLearning with content that needs to get rolled out for compliance purposes. The surprising statement is not the fact that eLearning is used for this, but the details around it. Two of the interviewees stated that the first thing companies are doing when starting to use eLearning is the compliance area. I6 says 'we actually started doing eLearning there […] eLearning module together to help collect information'. And even more clear is the statement from the hotel industry case, where I5 says they 'used it a lot for compliance and eLearning for those type of subjects, which the information doesn't change very quickly […] My industry has not been great at using eLearning that much'. It would need further investigation as to whether this kind of compliance training is really the entry area everywhere, but the statements seem logical. When reading the statement 'subjects in which the information doesn't change very much' it looks as if eLearning is focused on

topics, that are not changing fast, which is the opposite of the context of this research. But I5 mentions later 'now we have software like Articulate', outlining that this is supporting a fast and easy creation of eLearning. This suggests that there is a change in the usage of eLearning. It seems from the comments that, in the past, non-fast changing areas were a good usage, but that this has changed since there are now tools that allow fast creation. This underlines the fact that the current research is happening in a time of change in the usage of eLearning.

Besides the current analysis results across the cases around the compliance training, there is a seventh case adding additional information. All those findings are specific for Case C7. The company Case C7 was differently structured around the learning responsibilities. The interviewee had a position description of "manager" instead of "vice president", but was, according to the interview and his LinkedIn profile, in a similar responsibility. The company is just differently structured. It looks as if, because of this, many more details were shared by I7 around certain topics that were surprising to him. This is underlined by comments like 'in the beginning it was scary' and 'as I stood back and watched what was taking place' that show how involved he was in the progress of learning implementation.

There is an additional insight from Case C7 that needs highlighting; it is related to differences between eLearning and instructor learning. This research does not focus on the differences between instructor lead and eLearning, but the insight gives much more weight to the finding around compliance training. The finding is related to the automotive industry, but it looks likely that it can be transferred to any similar examples, such as the one mentioned below. So, the finding from I7 is that eLearning, independent of the point of time of usage, can be more effective as instructor-led training, and consequently more efficient. His impression is that instructors are often using examples to reach their users that are not necessarily well thought through, and those examples are used to 'figure out the common, the common ground' to teach, which is not necessarily really working. His example is 'I used to use, "Where were you when John Lennon died?" But today, that does not hold true any longer. Younger users would look at me like I had three heads'" Looking at this from the outside, it feels as if the same could happen if an eLearning is not well-structured and designed, but it is an interesting finding that relates to the second surprising finding from I7. The key finding from I7 from the automotive industry is from a project where I7 not only used eLearning for common "compliance training" like security or financial integrity and similar. He was running a project to use an eLearning platform to train service technicians instead of using instructors. His key learning was that, especially in important tasks, an eLearning always shows the same movement of the

hands or process compared to an instructor. They introduced eLearning to improve efficiency and remove manuals. But he then was surprised that eLearning was increasing safety. He explained this with a stand-alone example by telling the story referred to above: 'Judy's method of changing a tire might be different than Mike's or Joe's. But the tire still needs to hold there, it still needs to not go flat, it still needs to be put on the vehicle the right way, everything torqued, all the process needs to be the same. So, what I'm trying to say is, in the beginning it was scary. As we transitioned in, as I stood back and watched what was taking place, I was overwhelmed, and it gave me a lot of vigour to move this project forward'. As the purpose of the current research is not to discuss differences of eLearning and instructor learning, this is certainly not a key finding, but it is a finding that is related to the surprising theme of "compliance training". It also stresses that tasks and processes that are typically involving manual tasks may also be strong future candidates for usage of eLearning to achieve compliancy. The statements by I7 are not a representative academic research, but, based on the broad example, which is still in place according to I7, it is a strong indication that this finding has a certain validity. It even questions if there should not be broad research to investigate this further.

Going back to the themes of "personalisation" and "compliance training", a verifying discussion based on the triangulation with the expert interviews is needed. It results in an additional interesting confirmation. E2 reflects upon the 'late 1990s, and even today, because eLearning was so static, and it was like clicking through on a CD or a compliance training that you have to do for a new regulation or for sexual harassment' and the resulting negative experience causing a bad reputation of eLearning. This not only supports the cross-case finding that "compliance training" is widely taught by eLearning, it also confirms the statement of the hospitality case that this kind of eLearning is a starting point, but it is not a good example of eLearning. Furthermore, his statement adds a strong additional insight as the finding from the current case approach around "compliance training" seems to have been the same already in the 'late 1990s', as he states. This is adding significant weight to the current finding. On the other hand, the other two experts did not elaborate about this topic. Once reason could be based on the fact where this topic was mentioned in the interviews; I1 – I6 all mentioned it in the part around the first research question, where E2 used it to underline his statement for the third research question. So, it really came up by accident, and not as a purposeful topic as in the other cases. This could explain why the other experts did not mention the topic. But it still underlines how strong this finding is across the cases.

4.2.2 Findings: Immediate and Short eLearning

With the findings around immediate and short eLearning the second research question is explored: How can eLearning be used most efficiently to drive organisational product adoption?

During the interviews, the notion around immediate and short eLearning was the second big topic. The question was asked to the interviewees in a way that they could relate to the topics they mentioned as answer to research question one, but the question was open enough to get any information also beyond research question one. Across all cases there are, in total, two themes that came up in this part of the interviews, which were "immediate" and "short eLearning".

The topic of "immediate" was usually the first big topic that came up. Throughout each of the cases, it appears with different words, but it is visible in all cases. The first appearance is obvious in Case C2 and C4 as the word "ad-hoc" came up in both cases during the search for keywords. My research notes reminded me during the analysis of the keywords that were already found during the interviews. I was surprised around the word "ad-hoc" and this caused investigation as to if there was a further theme. So, Case C1 uses the terminology 'right moment […] in time', Case C3 uses the words 'on demand' and 'I need the solution now for my problem'. Case C5 is an interesting exception, missing any mentioning of "immediate" usage. I expected that the hotel industry with many people and roles changing uses extensive eLearning in all areas and has libraries to help employees with ad-hoc questions. The statement from I5 with 'My industry has not been great at using eLearning that much' explains why this is the case. But I5 also confirmed that, for two years, they had been investing into modern eLearning authoring tools to increase the availability of the right learnings. He furthermore mentions that he believes 'most people have a smartphone these days […] We need to do better as an industry of learning professions debunking that it's difficult to access eLearning because it's really not'. He also adds an interesting fact to the discussion around generations by stating 'Even our elderly room attendants who clean the rooms, they all have smartphones because they want to see their grandkids'. Case C6 uses the words 'short-term skill building capability', which is, on one hand, stressing the theme "immediate", but I6 weight that this is one of the best usages today for eLearning from his point of view. And, finally, Case C7 also mentions this theme with the keyword "quick". He is referring to the fast-changing market when speaking about the need for fast and quick access to learning when he says 'Things change so quickly, you need to be able to'. There is a small difference to the other cases, as this theme came up with I7

during the discussion of potential additional topics and not in the main discussion. I was not surprised during the analysis and related this back to the fact that there is a difference in the position. On the other hand, it is interesting that I7 still brought this topic up when being asked for topics that had not yet been discussed in this interview. It also stresses that, for his slightly different view compared to the other interviewees, this is an important theme, even in this case. So, all cases show this theme.

Furthermore, thinking of the verification of this finding from the interviews with the experts for triangulation, two of the experts also state that "immediate" is important. The third expert is compared to the interviewers inside the companies and the other experts in using the term "loose" and confirms that he prefers to use this term instead of "ad-hoc". He states that, according to his theory of focusing on "learning journeys", "loose" is used in the sense of "ad-hoc", but he still thinks even this kind of training has a certain point of time in the long "learning journey" of somebody. Interestingly, in addition, E3 stresses what he calls 'just-in-time training, and the way we define it' has many advantages compared to normal training, as 'the closer you can put the training to how you actually use it, the more likely you'll only have to train it once'. So, from his point of view, the theme "immediate" is not only working well, but also even strategically better than training at any other point of time.

The second theme that came up in six of the seven cases during the interview around the research question of existing well-working items is the theme that I summarised as the need for "short eLearning". The term "very short" did not come up explicitly in all interviews, but one of the synonyms, "bite-sized", "two minutes", "15 minutes", "20 minutes", or "30 minutes", did show up in all cases. It is interesting that, in four cases, there are numbers, but probably it is just a question of language that makes a difference. In any case, the eLearning needs to be short. I5 elaborates in depth 'obviously, short-form learning is one of the best ways that adults learn. It is something that has been an on-going issue with eLearning in general is they are just really long modules for people to take and people don't feel like they have... […] I want to learn it in 15 minutes'. The same is confirmed in depth by I1 stressing that it is a requirement, as otherwise 'They get bored very, very quickly and they get bored in details, details are not interesting, they go direct to the point'. It needs to be highlighted that I1 in this context is speaking about new hires, and his assumption is to hire young people. The only case where the topic did not come up is Case C7. On the one hand, this could be a signal that, from his point of view, it was lower on the priority in the automotive industry, but there is a second explanation. The largest project and most "scary", as he called it, was transitioning a month-long instructor-

led training into eLearning using tablets. I asked for verification as to whether the users are still using the tablet and he was sure that this is the case and he even added additional thoughts, saying 'I still have contact with users that are still using their tablet, or have updated their tablet. So, I would say, I think they used them every day in the classroom, yes, because it was required, but I think they understand that this is a new tool that we need to start feeling comfortable with'. This is not explicitly using the word short, or any other indication of the eLearning and I did not ask the specific question as to how the eLearning is structured, but it sounds logical that people only use an eLearning tool if they can easily access the learning, which requires short snippets. But to be sure around this statement for the automotive industry, further research is needed.

Looking into this theme from an expert feedback for triangulation, it becomes evident that all experts confirm this finding, with all three experts adding some additional thoughts. E1 adds the experience that shorter learnings are more efficient: 'if you built an eLearning course that was 20 hours of video that I had to watch, it would be a far inferior experience to one where I have short videos'. E2 is not comparing the short to the long eLearning, but adds the experience that learners can get right to the point with 'micro learning, where people are just getting short videos and by learning at their desk, everything is structured around little mini lessons rather than long curriculum, and I can just get right into what it is I need'. Expert E3 states that '"shorten up" training is possible, if you do things intentionally and do things right the first time'. This underlines not only the fact that he thinks short learnings are possible, but he is adding to E1 and E2 the fact that, when creating short eLearning, as with long curricula, the intentional approach and planning of the curriculum are important. When summarising the facts around the theme, it is important to stress that it is a strong theme as it came up in six out of seven cases, and everybody spoke about their own experience, not a wish for the future. It is important to understand that the interviewees state that this is their existing experience and facts from their own current work.

Additional research will have to figure out what "short" really means, but, for the cases here, it is somewhere between two to 30 minutes. This result fits to the finding of "immediate", as nobody who wants to learn "immediate" is expecting hour-long courses.

4.2.3 Findings: The Sooner the Better and AI

With the findings around the sooner the better and AI, the third research question is explored: How could the industry alter eLearning to increase product adoption?

There were two themes that came up during the interviews. The first is the statement that

eLearning is needed "the sooner the better" and the second one is requesting "AI".

Starting with the first topic of "the sooner the better", I1 states in a very clear way that basic mentioning of a topic would be best, 'The sooner the better', and speaks about 'universities and schools, the sooner they see it, the sooner they think it's great'. I1 is, with this statement around the third research question, coming back to a topic he already mentioned in the items that are working well in general. As mentioned above, this is special about this theme, as it comes up not only in existing good usage, but also in the future. I2 does not mention this theme in the vision, but, based on a project where his team created a basic training for everybody prior to using additional learning platforms, he states 'We have to create a common language in the organisation'. I2 highlights the aspect of getting a common understanding in the organisation. Further research could investigate how this is even a prerequisite to this theme or similar. In Case C3, the usage of eLearning early is already a topic that they are using in general. I3 states the advantage that 'you can experience the product beforehand in order to gain an impression' and also how detailed this should be to 'raise awareness or say "Hey, something is coming", a little preview'. I4 is not explicitly covering the topic as an important item, but is still mentioning the big importance and advantages of an early exposure in the context of how people could be, in general, more open to use eLearning by saying 'people that are growing up in the virtual space are going to be much more accommodating'. This is not as strong as the statement of the other C5. The fact is that, as I5 stated, his industry 'has not been great at using eLearning that much […] up until maybe a year, two years ago'. It is a straightforward conclusion that, if an industry has only been using eLearning for two years, there is not yet a lot of visibility of early exposure. Furthermore, I5 spent his whole career in the hospitality industry in various companies and was always directly exposed or at least linked to learning and development, meaning he is qualified to use the words "my industry", as he worked in multiple large Fortune 100 hospitality chains. It can be assumed that other interviewees in the hospitality industry would state the same. Maybe it could be an interesting research field to find out if early exposure to eLearning could influence future usage and adoption. I6 mentions this theme with the statements 'It's probably as soon as possible' and' "as early in the relationship as possible […] it could be used even in the recruiting process'. Like I1 he mentions this as part of his answer to the third research question. But, in this case, it is one of the first statements around the vision, even before the theme of AI. On the other hand, I6 does not mention this earlier, like I1 with the earlier interview questions. This does not change anything as the fact is that it is seen as important for the future. I7 does not mention the theme in any

dedicated way, but he elaborates around testing and sees certain differences in when and what you learn when he states: 'You would still need to learn something, because I think there's a difference between training and development'.

Moving forward to the triangulation with the experts, E1 states that people need to 'get the basic idea' as early as possible, for example, in school or university. And this can be as short as needed. Expert E2 goes into a more in-depth discussion, mentioning even "K-12" in the context that learning, and eLearning, starts in school. He states that the perception on any learning is that 'that becomes their perception So, according to E2, creating the right eLearning experience early can influence considerably. He also states clearly that a negative experience can cause certain damage. E3 is not speaking about the value of eLearning early and in addition to other learning. The reason could be that he is aware of the opposite statements around PhD degrees as he states: 'In fact, you know, in the consulting world, there are people who want you to have a PhD, and there are people who won't deal with you because you have a PhD'. But he also is clear around the fact that an early learning is important, using the example that 'playing piano, if you don't get your grip or your hands in the right positions to start with, you will never get good at it, and you'll be fighting it your whole life'. This can be analysed as being different to the theme of early exposure helps, as he is raising the fact it needs to be done correctly. On the other hand, this statement can also be analysed in the way that early exposure helps if it is done right. And this is matching the other experts, who all state that the right early exposure helps with the learning.

Having finished the discussion around the theme "the sooner the better" the second and most interesting finding around research question three are the statements around AI across the cases. It looked initially as if there were two themes: AI and personalisation, but, through a deeper look into the context, it became clear that personalisation was used in a context of AI. Starting by looking into the theme of "artificial intelligence", the start is the keyword analysis. The keyword "artificial intelligence" comes up in I1, I3, I6 and I7. It is interesting, that all of them are using a similar context around the keyword "artificial intelligence". I1 explains the keyword further by stating 'artificial intelligence […] that could create some kind of interaction with the candidate […] To be more personalised so that people can skip easily and say and go directly to what they need'. So, AI is used by I1 in a context of creating personalised recommendations to the learners. This leads back to the theme of "immediate" learning and suggests a need for guidance to the right content. I3 uses the keyword AI in a similar context by stating 'this artificial intelligence also learns, depending on what you feed it or how you deal with it' and I3

then uses an example of "Excel" where he just asks the question and, based on his knowledge, he will receive the needed help. It needs to be highlighted that I3 then continues to elaborate around AI, and he realises on his own that, if the AI would really be intelligent, it would probably even do the things on its own. That means that instead of getting help in how to create a chart in Excel, the learning program would do the work, by saying 'Hey Excel, create a pie chart for me and evaluate the data that I have sent you here'. So, this could be a step after having AI implemented. Looking to I6, he already stated the usage of AI, in the review of what is working well already today whereas '20 years ago, there was no way I had to use AI and think about that'. In the suggestion for the future, even without mentioning the word AI, he states that he would expect training to be included into products such as 'Thinking around something new technology and we need to design in training, like how is the learning piece going to be a part of this'. In this context, he also states 'the idea is to then push it to be as intuitive as possible'. Without the keyword AI or "personalisation" being mentioned, the word "context" stresses this need to match the tool and the user. But again, as in I1, the themes of AI and "personalisation" came up together. In the other three cases, the keyword AI was not directly mentioned, but I2 speaks about the need to 'create a framework where people can then quickly access books, access eLearning, access cool podcasts'. I4 also describes the same with 'type in my stuff and my questions and my engagement is defined by what I text or type in'. I5 uses the same descriptive approach. but is crisper: 'learning with suggestions that are made for them through some type of system of eLearning'. I7 goes a step further than the others in answering the question around the vision with two items, one of them is AI and the other is tools for simulations. But, from his point of view 'AI is here' and with 'Interactive Electronic Technical Manuals […] leg work has already been done' and he sees the biggest challenge in 'changing your culture' and thinks that it is necessary to find an answer to the question 'Why are human beings afraid that automation is coming?' But even with this thought looking into the challenges of AI, he is still a big promoter of its implementation.

Looking into the triangulation with the feedback of the experts, E1 is very clear around the need for AI. From his point of view, there must be a big focus on the theme of "personalisation" when speaking about AI. He summarises this by answering the question around the ideal future with 'an AI that works for me, not for my employer and it measures my personal state. It knows my mental wellbeing, my physical wellbeing, my motivation, it knows my learning history […] it would be aware of the things that I'm not aware of and point them out to me'. In a similar way, E2 also mentions the 'future of this is AI

algorithms doing a lot', but the focus is even broader than just the guidance. E2 even takes it to the level of the AI also taking care of the teaching. Expert E3 did not mention AI nor "personalisation", nor anything in this area. Looking in detail into his answer to the questions around the future, his first statement was to investigate an existing and old YouTube clip: '"Well, first, that's a YouTube clip. So, feel free to use it in your classes'. The clip stresses that the approach of how to learn is more important than the medium. This statement makes sense knowing that E3 spent a long time in the education industry and his answers are probably built more on historical aspects of his life than current trends. My personal notes mentioned that, even with some of his statements helping to add interesting insights for this research, he did not really answer the forward-looking question. I could feel that, where all other interviewees did think for a moment and then reflected upon what could be visionary, he just repeated the answer around the YouTube video as a standard answer.

Summarising the comments around AI and personalisation, all interviewees see in their vision a need for a technology that allows personalisation based on experience of the user and based on their current usage of software. The fact is that three of the interviewees mentioned not only the need for personalisation and automation, but directly that AI could be related to the fact that there are already existing AI systems and analysts dealing with the influence of AI in lots of process-driven areas (Bridgeman, 2020), and, as outlined in the literature review, knowledge representation is one of the applications of AI. The approaches can all be summarised in the manner I1 is requesting, with it being 'personalised so that people can skip easily and say and go directly to what they need' and I2's 'create a framework where people can then quickly access books, access eLearning, access cool podcasts'.

4.2.4 Summary of Cross-Case-Findings

Relating the findings back to the research question, Table 13 summarises the relationship between the cases and the themes. It shows in each of the lines a case, and, in the column, the relationship to the cross-case findings. The two themes around compliance training and platform relate back to research question one around why clients are applying eLearning. Both themes came up across all cases. The cross-case findings "immediate" and "short eLearning" refer back to research question two around how eLearning can be used most efficiently. The only case that did not mention "immediate" is C7, most likely on account of the major focus of the interviewee around "simulations", and their slightly more technical focus (Section 4.1.3). Finally, the findings around "early eLearning" and "personalisation and AI" refer back to research question three. As the comment around

"early eLearning" did not show up in C4, C5 and C7, the question as to differences between the EU and the US could be raised; however, this is not likely as all interviewees act globally and were in global leading roles. As C4, C5 and C5 still indirectly mentioned "early eLearning", as outlined in Section 4.2.3, this finding may be somewhat weaker than the others. On the other hand, during the expert triangulation, E1 and E2 elaborated with great focus about the high importance of early learning (Section 4.2.3), which again gives this topic additional weight. In total, this theme may have a slightly lower weight than the other findings, but, based on the expert triangulation, it seems to be a valid finding of this research.

Table 13

Overview of findings, cases and research questions

Case / Region	Sector	Research Question I		Research Question II		Research Question III	
		Platform	Compliance	Immediate / Ubiquitous	Short	The earlier the better	AI / Personalisation
C1 / EU	Distribution	✔	✔	✔	✔	✔	✔
C2 / EU	Service	✔	✔	✔	✔	✔	✔
C3 / EU	Medical Care	✔	✔	✔	✔	✔	✔
C4 / US	Medical Equipment	✔	✔	✔	✔		✔
C5 / US	Hospitality	✔	✔	✔	✔		✔
C6 / US	Learning	✔	✔	✔	✔	✔	✔
C7 / US	Automotive	✔	✔		✔		✔

Note. Summary of the cross-case findings

5   DISCUSSION

After having analysed the outcome of the case approach in the last chapter, this chapter relates these findings back to the aim of this research. As outlined in Chapter 2, the aim is to answer the question as to how eLearning drives organisational product adoption. This aim is supported by three objectives, and, during the literature review, research gaps were identified that led to research questions for each of the objectives. Table 14 summarises the objectives and research questions. Besides relating the findings back to the research gaps, this chapter furthermore argues that all three objectives of this research are met. The structure of the argumentation follows each of the three objectives. After the discussion of each of the objectives, a new empirical framework will be presented in a separate sub-chapter as a direct contribution to the aim from a practice point of view

Table 14

Overview of Objectives and Research Questions

Objective I	Objective II	Objective III
Examine how eLearning is used in organisations	Explore the barriers and challenges for the usage of eLearning in organisations	Provide recommendations on how eLearning can be used to drive product adoption
Research Question I	**Research Question II**	**Research Question III**
Why and how are clients applying eLearning today?	How can eLearning be used most efficiently to drive organisational product adoption?	How could the industry alter eLearning to increase product adoption?

5.1   Research Question I

The first research question of this work is to answer the question "Why and how are clients applying eLearning today?" In the analysis, two themes came up, which will be covered separately in two subsections, and afterwards summarised in a third subsection.

5.1.1   Platform

As the analysis showed, nearly all cases highlighted the topic of the usage of platforms. In this subsection, the subject of platforms is discussed, building on the definition of learning platforms used in Section 2.1.6. Additionally, the general term "platform" gets linked to digital learning platforms. The subsection then concludes with the discussion of how the findings fit to current research around platforms and suggests what this means in

the context of organisational product adoption.

The definition of a learning platform as introduced in the literature review (Section 2.1.6) is interesting for this research from two perspectives. On the one hand, companies are even using multiple learning platforms to provide training to their employees. This indicates that they understand the benefit for their employees, as they would otherwise not pay, and platform providers want, in general, to make a profit. On the other hand, there is an interesting finding regarding organisational product adoption based on the value platforms are bringing to users, and this is the fact that individuals in organisations are exposed to what is part of a platform. As mentioned in the interviews, companies are not necessarily guiding their employees to use specific training of a platform, but they are providing platforms for employees to learn in general. Taking the research from Pisano (1996) into consideration, this then means the technologies that are available in learning platforms will cause an exposure to employees. Or, in other words, this means that, if a company wants an early exposure (Pisano, 1996) to their technology, then they either need to make their content available on learning platforms, or provide their own platform to employees. Both could be direct recommendations from this research for product providers. Looking into the first idea for companies to put their content into existing learning platforms, there is an additional small suggestion arising from the current analysis. Amongst the existing MOOC platforms (Zawacki-Richter, Bozkurt, Alturki, & Alaiweesh, 2018), the only mentioned platform is LinkedIn Learning, which is used in two of the cases. This is not a strong evidence, and future research is needed as to which are the most important platforms, but it still suggests that this platform is used in large companies to enable people and could be a good suggestion for companies to expose people to products (Pisano, 1996). Additionally, it is needed to highlight that the interviewees also recommended very early exposure to products to increase product adoption, as discussed in Section 5.3.1, and it seems that a learning platform like LinkedIn could be exactly one of those places to learn, besides school or university, as mentioned by the experts.

5.1.2 Compliance Training

The second topic around typical usage of eLearning is the topic of "compliance training". The fact that many industries have needs for compliance training (Haney & Lutters, 2020) may explain this common theme in the interviews on one hand, but it is more likely that the skills gap and subsequent high turnover are reasons for this topic to be mentioned in most interviews, as the topic of compliance training gets an even bigger importance in a high turnover environment. Adding to the fact that industry analysists expect the market

of compliance training to grow by more than 7% until 2024, (Maida, 2020) this suggests that it is not a surprise that, across the industry, the topic of compliance training comes up when HR development leads are asked the question how they are using eLearning.

Literature furthermore suggests that the area of usage of eLearning for compliance training is one where eLearning in its format today is accepted by the participants in general (Rossett & Marshall, 2010) and that there is a dependency on the usability (Beck, 2017). This is in line with general findings that quality and time to complete eLearning can be inhibitors (Becker, Newton, & Sawang, 2013). Rossett and Marshall (2010) focused on the participant view and they summarised the participant view by saying that 'eLearning is useful in capturing and sharing best practices'. This also suggests that the finding from case C7, who in his area had the experience that eLearning, compared to instructor-led training, 'created consistency, standardisation', is not only a finding from the automotive industry, but has a broader validity.

5.1.3 Summary

The preceding two subsections discussed existing literature regarding the two themes of compliance training and platforms. Both themes give answers to the research question of why and how clients are applying eLearning today. The discussion shows that "compliance training" is named in most cases as one of the reasons for the usage of eLearning and literature as well as the findings suggest that today's usability and quality of eLearning are reasons for the usage in process-dominated subjects like compliance. This finding is interesting, as it confirms existing research around the need to further develop the usability and quality of eLearning to be accepted beyond a process-driven context. Besides this contribution to knowledge, this finding also contributes to practice, as it describes an interesting sales point for eLearning by using discussions around compliance training as an entry point. This is true for any eLearning provider or platform, but it could be even of interest for any soft- or hardware company, as they could provide to their clients or potential clients compliance training and use the used platform to also provide information about their products.

The discussion around the theme "platforms" gives especially additional answers to the "how" in the first research question. The results suggest that, from a HR development perspective, a key reason to buy eLearning is not a skill gap in a certain area, but the need to satisfy the employees to learn in general, and this need is fulfilled by MOOC platforms.

5.2 Research Question II

The second research question of this work is to answer the question "How can eLearning

be used most efficiently to drive organisational product adoption". This section discusses how the findings from the interviews as described in Chapter4.1relate back to this question and how the findings fit to the current literature. The section is divided into five subsections, following the two identified cross-case themes "immediate" and "short" eLearning. After those subsections, two additional subsections discuss "uniformity" and "simulations", which are findings from the automotive case. These are specific findings just from one case, but existing research in other industries with the same findings suggest that they are probably of interest beyond the automotive industry. At the end, a summary closes the section.

5.2.1 Immediate

The first cross-case finding to discuss is the request for "immediate" access to eLearning that came up in most cases. Looking into existing research, there are various research papers mentioning as comment that learners benefit from immediate access (David R Levesque; Jaclyn, Pamela, John, & Kyle, 2013). Jaclyn et al. (2013) even see already a trend that the evolution from normal learning to eLearning caused a general expectation, that learning is immediately available. So, request for immediate eLearning while using a product is not new and confirms existing research. Jaclyn et al. (2013) stated that there is a trend of immediate learning, without going into details in their research. Looking back they probably already saw a trend that started in 2010 with the so called ubiquitous computing arising and with it also ubiquitous learning, and one of its properties is "immediate" access to learning (Saadiah et al., 2010). Ubiquitous learning was already introduced in Section 2.1.7 with its definition and its positioning inside the broader eLearning definition. With the understanding of ubiquitous learning, the theme of "immediate" learning can be embedded into the existing research.

Using the agreed definition of ubiquitous learning and understanding its properties (Section 2.1.7), they need to be applied to the findings of the current research. In the context of the interviewees, they did not ask for ubiquitous technology, but the analysis showed that interviewees demanded to always have access to eLearning when they have a question. This means the trigger of "immediate" is not technology, but a problem an employee has with a product, and he now wants to have access to eLearning. This means the interpretations could be that the finding of "immediate" eLearning suggests a request for uLearning in the context of "anywhere and anytime learning". But the fact of nobody mentioning ubiquitous technology does not, on the other hand, exclude its usage. The interviewees were not asked around technical implementation of their recommendations; this means statements of the need for immediate eLearning leaves it open as to how this

should get implemented. And in the context of the current research, it is not important how implementations are done of the recommendations. This means immediate eLearning can also be understood as "eLearning using ubiquitous computing".

This means, the findings around "immediate" eLearning are not new and do not close a research gap, but it confirms that the trend of "always available eLearning" is continuing and there is probably an even bigger focus in the future.

Summarising the discussion, the request for "immediate" learning confirms an existing trend towards uLearning in the context of "anywhere and anytime learning", and gives a first answer to the research question around how eLearning can be used most efficiently to drive organisational product adoption.

5.2.2 Short

The second cross-case identified finding is the suggestion to move to short eLearning. Short is suggested, based on the interviews, to be between 15 minutes and two hours. From an academic literature point of view, there is research indicating that the general experience of eLearning plays a role (Heather & Jennifer, 2008) and that for effectiveness it is important 'how it is designed, delivered' (Derouin et al. (2005) and the perceived usefulness (Yi-Hsuan Lee 2013). Those researchers indirectly confirm the request for short eLearning, as obviously short means, from the interviewees' point of view, that the learning is efficient, well-designed, and useful. Even more explicit is research around the length of eLearning, indicating that too long is not good (Mayer, 2014); the length must be the right one (Costley, Fanguy, Lange, & Baldwin, 2021) and research also suggests it should be split into modules (Mayer & Chandler, 2001). But just splitting eLearning into modules does not seem to be the right approach, as it is already questioned by Tauber (2013) as to whether the simple splitting into modules is correct. This also questionable thinking of the already mentioned findings that the overall design is important (Derouin et al., 2005), and a split of an existing learning cannot be considered as a good designed learning. Looking into very recent research statements like the need for small chunks (Lynn & Zane, 2018), research states that shorter eLearning is more effective (Boring, 2020) and that shorter eLearning is more rewarding (Peterson, 2017), which indicates that the current findings confirm a trend. Furthermore, Boring (2020) is even already taking it as a fact that shorter eLearning is the better choice, but in practice longer modules are still used.

The open question in this context is still around what the ideal length is, as the findings in the current interviews mention numbers from 15 minutes to two hours. An interesting

fact is the interview analysis from Peterson (2017), who quotes also lengths of '15, 20 minutes' or '15, 20, some 30 minutes to an hour' and interviewees are very critical of everything that is longer than two hours. But there is also no clear trend in her research of what is now the right length.

For the current research, this means this finding contributes to the answer to the second research question around how eLearning can be used more efficiently. The findings on one hand confirm general research of the past years as well very recent findings that the industry still offers too long training, even with existing research that states that this is wrong.

5.2.3 Uniformity

Following up the two identified cross-case themes, this subsection discusses the first key finding of the advantage of "uniformity" from the automotive case. This theme came up only in the automotive case, but a very likely interpretation is that the interviewee in was one executive level below the very senior people in all other cases. This subsection relates this finding back to existing literature and shows that it is one of the answers to research question two.

It seems that "uniformity" is a key finding not only for the automotive industry. The experience is that eLearning helps in increasing process uniformity and, consequently security, as one instructor never explains a process and details exactly in the same way as another. Human experience and other factors play a role in how things are explained. But, in the current example, the uniformity significantly increased. Most impressive is probably that the users appreciated the fact that the explanations were uniform compared to explanations from multiple instructors across a long timeframe. The interviewee did could not quote quality measurement like NPS (Ziegler & Peisl, 2020), but had statements available from students attending training with instructors as well as the eLearning version.

Uniformity is not a new topic in academic research. Firstly, there is research that 'In everyday language "standardized" and "uniform" are often treated as synonyms' (Brunsson & Jacobsson, 2002), but this is not true from a detailed research point of view. The correct statement is that 'Standardization is expected to result in uniformity: that many will resemble each other in both appearance and behaviour' (Brunsson & Jacobsson, 2002). Research around uniformity exists in various areas, for example service areas like nursing (Ellingsen, Monteiro, & Munkvold, 2007), kinematic (G. Wu & Cavanagh, 1968), and marketing (Walters, 1970), but also already in organisational

product adoption (March, 1981). Researchers highlight the positive side of uniformity, for example, it is perceived to save costs (Walters, 1970) and even amongst researchers in some areas standardisation of research results is discussed as uniformity makes exchange amongst researchers easier (G. Wu & Cavanagh, 1968). But there is also research highlighting the negative sides as standardisation and uniformity of products are discussed as negative between global markets (Madar & Neacşu, 2010) and also between cultures (Walters, 1970). Research evaluating how much standardisation and adaption is the right balance comes to the conclusion that there must be realistic performance measures in place to judge (Cloninger & Swaidan, 1987).

The current findings around the positive aspect of uniformity are from the service areas, and confirm research that uniformity helps in people working in the same area (Ellingsen et al., 2007; G. Wu & Cavanagh, 1968). The findings from the people working in the automotive serve area furthermore state that challenges that exist in organisational product adoption without eLearning are solved. So Brunsson and Jacobsson (2002) state that 'Individuals and organizations have limited opportunities to observe what their counterparts are doing in practice; they are thus often in a poor position to imitate each other's actions. They are somewhat more likely to imitate what others are saying about themselves'; which is exactly what the interviewee stated. And, in this case, eLearning builds a kind of a bridge, solving the fact that people do not see each other but the eLearning creates the invisible link and helps uniformity. This is similar to what March (1981) says when he states 'Organizations rarely do exactly what they are told to do', and the statement around "uniformity" in the current research suggests that eLearning can help with this challenge. Additionally, March (1981) describes the spreading of information between organisations as a process of "contagion", which works faster if the involved organisations see the value. And this was the case with the students in the automotive industry, who appreciated the better work and so the eLearning helped spread the right procedures faster than before, creating even a direct link from "uniformity" to the aim of this research.

5.2.4 Simulations

Besides the findings around "uniformity", the automotive case had another theme that was stressed to be a big benefit of the usage of eLearning, and this is the usage of "simulation". This subsection relates this finding back to existing literature and shows that it is one of the answers to research question two.

The interviewee in the automotive industry had considerable experience also beyond automotive, and mentioned that there are other industries, using as example the military,

that are already using simulations a great deal, and he was surprised that the automotive and other similar industries are not using simulations in a broad way.

From an academic point of view, the usage of simulations in eLearning is not new and simulations are used already in multiple industries. Very early research goes back to the time of the first computers and it was suggested already in the Sixties that simulations and games could help to especially understand policies better (Raia, 1966). So-called simulation-based learning (SBL) and its effectiveness now has its place in research, and there are also cross-industry summaries (Bell, Kanar, & Kozlowski, 2008) suggesting that simulations are efficient dependent on various to be further researched conditions. However, Bell et al. (2008) assumed that simulations will play a significant role overall in the area of eLearning in the future. Since then, many industries have adapted the approach of simulations. An example to mention is the widely accepted value of simulations for surgical training (Madani et al., 2016), but there is also general research that eLearning in the medicine sector is efficient (Cook et al., 2008). On the other hand, research suggests that interaction and how eLearning is organised influences its efficiency (Prichard, Bizo, & Stratford, 2006) which contradicts in a certain way the usage of simulations. In the manufacturing sector as well research suggests to use simulations as an alternative to normal learning (Chua, 2006), and even puts it on the same effectiveness level. In the education sector, research also already exists suggesting the use of simulations for undergraduate students (Tunstall & Lynch, 2010) and even K-12 studies exist suggesting that simulations are helpful (Zoellner, 2019). Additionally, pharmacy cleanroom simulations are working successfully in the pharma industry. There is also already some cross-industry research suggesting Management Learning can benefit or be replaced by simulations (Jiafang, Hallinger, & Showanasai, 2014),

Based on the existing research in the area of SBL, the current suggestion of the usage of simulations confirms existing research, that simulations can be very effective (Bell et al., 2008), and even be a replacement for instructor-led learning (Cook et al., 2008), probably dependent on various conditions (Prichard et al., 2006). As summary, the finding around "simulations" provides an additional answer to research question two.

5.2.5 Summary

As outlined, each of the cross-case findings, "immediate eLearning" and "short eLearning", provide an answer to the second research question "How can eLearning be used most efficiently to drive organisational product adoption?" Additionally, the findings from the automotive case add to the fact that industries or product areas where uniformity is important could benefit from eLearning, as achieving uniformity is a big

advantage of eLearning according to the case from the automotive industry. Furthermore, the automotive case also highlights that the usage of "simulations" could drive the efficiency of eLearning.

5.3 Research Question III

The third research question of this work is to answer the question "How could the industry alter eLearning to increase product adoption?" This section discusses how the findings from the interviews as described in Section 4.3 relate back to this question and how the findings fit to the current literature. The section is divided into three subsections, following the two identified cross-case themes, "early eLearning" and "personalisation and AI". At the end, a summary closes the section.

5.3.1 The Earlier the Better

The first cross-case finding to discuss is the request for "the earlier the better" access to eLearning around important topics that came up in most cases.

From the point of existing literature, much research around organisational product adoption starts with the awareness phase and usually ends with adaption, for example Ettlie (1980). And the first phase is usually the phase where people are becoming aware of a product and then moving forward to the real decision to buy and then to adoption. In the current research, most interviewees suggested that a small piece of eLearning should be positioned much earlier, for example, during the hiring process was mentioned, but even earlier, such as university or school. This statement, in general, is supported by the research of Pisano (1996), who saw indication in the production process that early exposure to new technologies could increase the adoption speed later on. Besides the early work on Pisano (1996), there is also more recent research (Szulanski et al., 2016) indicating that additional points in time besides the traditional findings are helpful. The fact that this topic comes up in research around eLearning can lead to the conclusion that it is currently dramatically changing the product adoption process. The interviewees who suggested the exposure to early learning knew that their request of teaching concepts early is now possible, as short eLearning is now available.

From a theoretical point of view, cognitive load theory has dealt with those aspects since the 1980s. Chandler and Sweller (1991) created a vast amount of research, and they especially brought technical areas and the way people learn together and were able to provide details: 'In technical areas, complete instructional packages consist normally of three parts. The first part consists of introductory explanatory instructions, like those used in the current series of experiments. The second part usually includes one or two worked

examples designed to demonstrate the new material. The third part normally consists of many problems or exercises'. This means the current suggestion of very early exposure to facts using eLearning confirms this research and adds to the first phase mentioned by (Chandler & Sweller, 1991). Since the early research in the 1980s and 1990s, additional researchers have continued the work from Chandler and Sweller (1991). Sweller, van Merriënboer, and Paas (2019) recently summarised the findings of the last 20 years, and "the borrowing and reorganising principle" is an interesting finding for the current research. It explains that humans usually store various facts that they hear from other humans, without purpose, and then start to reorganise once they learn additional details. 'Cognitive load theory deals with issues associated with cognitive processes and instructional design and may assist in answering these questions', and an extracted simple overview has proven to be a success (Pollock, Chandler, & Sweller, 2002). The current finding suggests that eLearning can take the place of providing an extracted simple overview, and, as this was confirmed by the industry experts, it seems there are already discussions ongoing around early eLearning. As some of the interviewees of the current research did not mention this topic, future research still needs to validate if this topic can be generalised across all industries, as suggested by the experts and literature around cognitive load theory (Pollock et al., 2002), or if there are industries with less benefit of early eLearning.

Maybe also the exploratory research from Pisano (1996) could have already been explained with cognitive load theory, but it was probably too early at that point of time to discover the relationship between them. Additional to the general idea of early learning, the research from cognitive load theory assumes that the input comes from humans. The analysis of the current research now suggests that short eLearning can be used in a similar way as human interaction. For the current research, this means that organisational product adoption can be driven by using the right eLearning early. But additional research is needed to specify how this eLearning needs to be structured besides the fact that it needs to be short.

Summarising this finding it can be stated that eLearning "the earlier the better" provides an answer to research question three.

5.3.2 AI

The second topic to discuss around the third research question is the finding that AI was discussed in all cases. The discussion uses the definition and overview around AI from Section 2.1.5.

Based on the findings from the cases, the research fields of AI expert systems and knowledge bases are relevant for the current research from two points of view. In all cases, it was highlighted that people expect AI in the case of personalisation; that means there is the expectation that products know the skills of the user, and then give the needed guidance around the learning in relationship to the challenge while using a product. Mapping this to the existing literature, this describes the need for knowledge bases describing the skills of product users and the skills that are needed to use a product or a process of a product. Additional to the need for knowledge bases, from the findings an expert system is needed that can provide recommendations based on the knowledge bases.

It is interesting to know that there are already knowledge bases that are used, amongst other purposes, also to support which eLearning is needed in a specific situation (Khamparia & Pandey, 2015). Second, there are existing expert systems using knowledge representations to support career decisions even with research suggesting that the current status is far away from a general usage readiness (Bright, 2015). Career decisions are not part of the current research, but the research in detail is dealing with the question of how somebody with a certain skillset can get reskilled to another skillset, which is an analogy to the question of how somebody can be trained to use a product. So, the current research highlighting the need for AI in the context of personalisation is not a new contribution to knowledge, but the current research highlights reinforce the need for the implementation of knowledge bases representing skills of employees and skill needs to use a product, and, on the other hand, the need for expert systems giving advice based on the knowledge bases.

5.3.3 Summary

As outlined, each of the cross-case findings, "The earlier the better" and "AI" itself, provide an answer to the third research question "How could the industry alter eLearning to increase product adoption?" Both the concept around providing early learning and the usage of AI influenced learning are not new. It was more than 20 years ago that there was the first research indicating that an early exposure to a topic can help learning (Pisano, 1996), and also the topic around personalisation is not a new suggestion, especially in eLearning research (Sunkara & Rajasekhara Rao, 2017). But, in both cases, the evolution of eLearning caused the change in the mindset. In the past, eLearning was a technology that helped learning, whereas today some of the new technologies used in eLearning are providing learning that was not possible in the past.

These findings can be combined to a new empirical framework for organisational product adoption. The key is to take the suggestions and answers of the research questions all

together, and relate them back to Rogers (2003) diffusion of innovation model which, as outlined in *Figure 3*, needs to get extended in two ways. First, the current research stresses the need of early eLearning, meaning the phase on knowledge in *Figure 3* needs to be extended by adding a phase of very early conceptual eLearning, for example in school, university or whenever possible and also afterwards. Additional research needs to figure out priorities (Section 5.3.1). The second change that is needed compared to Rogers' model is the representation of ubiquitous access to eLearning.
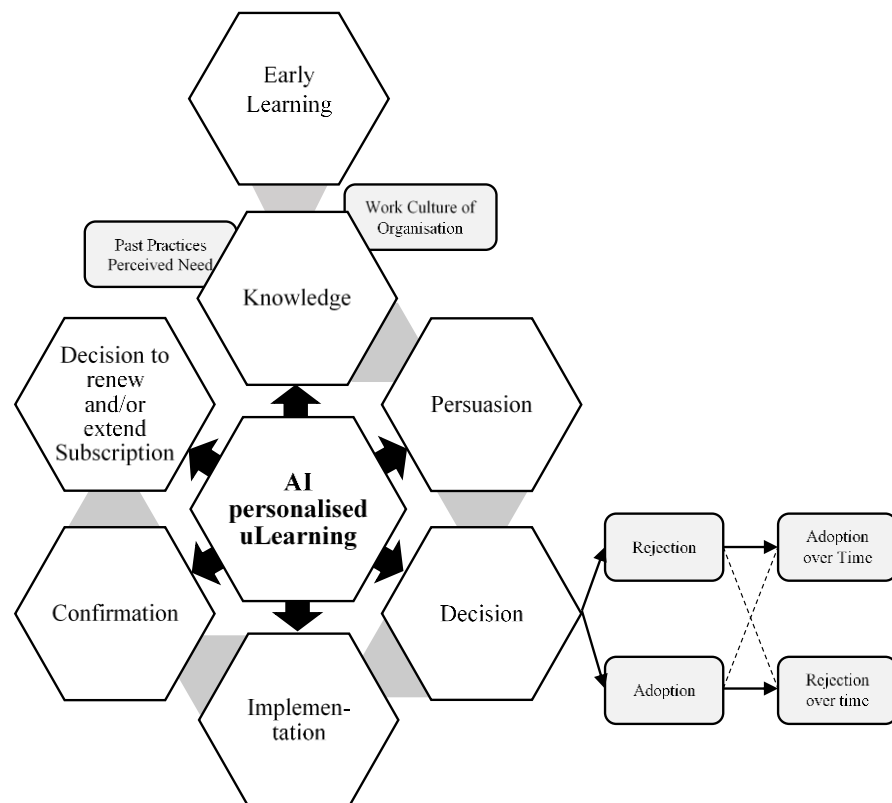
Figure 5. Adapted Process of Diffusion

Based on this, the current research suggests that the communication channels from Rogers' model should be replaced by ubiquitous access to AI influenced personalised eLearning. *Figure 5* shows a diagram summarising the recommendation from the current research to Rogers' model of diffusion of innovation. The figure is an adaption of *Figure 3*, modified by the two key findings of this research, which are the need for early learning and the availability of AI-personalised uLearning. In addition, another shape was used matching the change of the industry towards subscription licenses, which no longer fits to Rogers' linear model. The final resulting question to ask is: which will be the next technology innovation that will again influence Rogers' model?

6 CONCLUSION

6.1 Introduction

This chapter outlines if the research aim and its objectives are met. It furthermore describes how the findings matching to each of the objectives contribute to knowledge and practice and presents an overall summary of the work. The chapter concludes with a discussion of the limitations and an outlook into further research suggestions.

6.2 Objective I

In this section, the research findings leading to the answer of Objective I will be reviewed and the contribution to practice and knowledge evaluated. The first objective of this research is to examine how eLearning is used in organisations today. The literature gap identified led to the research question "Why and how are clients applying eLearning today?" which will support answering Objective I. There are two main findings, and these are the usage for "Platforms" and "Compliance Training" as outlined in Section 5.1.1 and Section 5.1.2. Both are direct answers to Objective I, as they explain how and why clients are applying eLearning today.

The finding around the usage of platforms represents the first contribution to practice of this research. It recommends to all large business who want to increase product adoption that they need to be visible with their content on all widely used MOOC platforms, as this exposes users to their products. With this contribution to practice, this theme around platforms not only provides an answer to the first research question, and consequently to the first objective, but it is directly related to the aim of this research, which will play a role in the final discussion. Furthermore, the finding, that one platform (LinkedIn) was mentioned multiple times suggests not only to practise using platforms, but that there seems to be a high visibility of LinkedIn. The findings around platforms do not create a new contribution to knowledge, but confirm existing research indicating that platforms can be effective (Kuleshova et al., 2020) and the visibility of LinkedIn (Lin, 2021). In addition, the theme itself suggests that platforms are evolving to become IT infrastructure. To date, there is research outlining that this could happen in the future, but so far there are not yet indications that this process has started. The current finding could suggest revisiting this topic around platforms as IT infrastructure for future research.

The second finding around the usage of "Compliance Training" contributes to practice, as it gives indication to the learning industry overall, which area has a significant importance independent on the industry of usage. The case C5 underlines this

contribution to practice, as I5 stresses that the first usage of eLearning was compliance training, and then all other usage was introduced. But the main contribution of the finding of compliance training is the area of knowledge. This finding confirms various research that eLearning for compliance is accepted (Rossett & Marshall, 2010) and that there is a dependency on the usability, quality and time playing a role for success (Beck, 2017; Becker et al., 2013; Rossett & Marshall, 2010).

In summary, the findings of this research give an answer to Objective I and contribute to practice and knowledge.

6.3 Objective II

In this section, the research findings leading to the answer of Objective II will be reviewed and the contribution to practice and knowledge evaluated. The second objective of this research is to explore the barriers and challenges for the usage of eLearning in organisations. The literature gap identified led to the research question "How can eLearning be used most efficiently to drive organisational product adoption?" which will support answering Objective II. The findings around this objective are two-fold. On one hand, there are two findings that are recurring themes across most cases, and these are the findings of the need for "immediate" and "short" learnings, as described in detail in Section 5.2.1 and Section 5.2.2. On the other hand, there are two findings that are each specific to one case, but the circumstances in each of those two cases stand out in this research so that, for this exploratory research, there are indicators that suggest that those case-specific findings are worth mention in the answer to Objective II. Those two findings suggest using eLearning to drive "uniformity" as well as to use "simulations", as outlined in Section 5.2.3 and Section 5.2.4.

6.3.1 Immediate

Starting with the findings of the need for "immediate" eLearning as the first of the cross-case findings, the request across the cases for the provisioning of immediate learning is a first answer to the second objective. This finding is not a new contribution to knowledge, but it confirms the existing trend around ubiquitous learning in academic literature. On the other hand, it contributes directly to practice, as it is a suggestion that, to drive organisational product adoption, eLearning should be provided in the sense of uLearning. The findings do not give a direct indication if the usage of ubiquitous technology is suggested or if uLearning without ubiquitous technology is needed. This leads to the statement that this finding contributes to practice as it suggests the usage of uLearning in general, without the requirement of ubiquitous technology or not. Maybe the right

approach is to use at the beginning the easiest approach, meaning to provide uLearning in the definition of "anytime and everywhere eLearning". This would mean the requirement to transfer existing eLearning to any device that makes sense for a given product. A second step could be to introduce ubiquitous technology, especially in product adoption where hardware plays a role, as it could be important to also use ubiquitous technology. As the usage of ubiquitous technology to trigger eLearning could be seen as personalisation, the findings from Objective III around personalisation would underline that this is important. So, this is, in any case, an interesting additional area for future research.

6.3.2 Short

The next finding that is part of the answer to the second research question, and as such providing a part of the answer to the second objective, is a finding that eLearning needs to be "short". This finding is, from a knowledge point of view, does not add a new contribution, but it does confirm the recent research, that eLearning is more appreciated if it is short. Furthermore, the current research suggests an interval for the definition of what is short; the interviewees mentioned five minutes to 2 hours. This is a valuable contribution to knowledge, as it provides a very up to date estimation to the research of Boring (2020) of how to quantify short. Knowing that lots of research confirms that the acceptance of eLearning depends on the subject and situation, an interval of less than two hours is a concrete value. For the contribution to practice, this finding is a strong request to practice overall, to finally stop rolling out long eLearning that is neither appreciated, as this research shows, nor as effective as possible, as existing research indicates (Boring, 2020; Lynn & Zane, 2018; Mayer, 2014). Together with the mentioned interval size that quantifies "short", this research gives a very good guidance on how to implement the finding. Even with the exploratory character of the current research, the combination of the current findings together with the research of Boring (2020) is strong, as he already suggested the implementation of short eLearning

There are two areas of future research that can be identified around this topic. The first is that, for future researchers, it could be interesting to investigate if there is a number that can be put to the question of how much is "short"; maybe there is a number per industry or per role for certain people inside certain industries. On the other hand, a longitudinal study could also try to get a deeper insight into how the average length of eLearning is changing every year. This could give an interesting indicator of how long it will take to achieve in general "short" eLearning, and ultimately result in higher acceptance of eLearning overall.

6.3.3 Uniformity

After the discussion of the two findings of "immediate" and "short" that appear across all cases and represent answers to Objective II of this research, the next two sub-sections describe findings that are each specific to one case, but also contribute to answering Objective II. Of course, future research is needed to investigate if their statements are not only one-time findings, but, as the current work is exploratory, and both findings confirm existing research, they are part of the results of this work and contribute to answering Objective II.

The first of the two findings is the topic of "uniformity". As outlined in Section 5.2.3 uniformity is not a new topic in research. Uniformity is known to help in organisational product adoption, so the current work is confirming current knowledge. New in this context is that eLearning is seen to increase uniformity, and that uniformity is seen even as an advantage over instructor-led learning. The comparison of instructor-led learning to eLearning is not part of this research, but the current work adds to existing research that already stated that eLearning can have advantages of instructor-led training. So, from a contribution to knowledge, the current research confirms existing findings, that standardisation drives uniformity, and it even suggests that uniformity can help in the current context to drive better organisational product adoption. From a contribution to practice, the findings suggest that, especially in service areas, eLearning can be a means to drive standardisation and ultimately uniformity. Combining with the statements (March, 1981) around "contagion", the finding around uniformity and eLearning and the appreciation of the learners in the current case even suggests that the achieved uniformity helps in driving contagion across organisational boundaries.

6.3.4 Simulations

The second of the two findings is the topic of "simulations". As outlined in Section 5.2.4, "simulation" is not a new topic in research as literature indicates that simulations are already used in multiple industries, for example, medicine, manufacturing, education, pharmacy, and management to just name just a few. Especially mentioning manufacturing as an industry already using simulations gives additional weight to the current research stating that the automotive industry should investigate simulations. Taking into consideration, that simulations are covered widely in literature, the current research does not contribute a new idea from a knowledge point of view, but it still contributes to knowledge, as the research suggests investigating across all industries if simulations could be a valuable factor for the future of driving organisational product adoptions. At the same time, the finding around simulations contributes to Objective II, not only from

a contribution to knowledge, but the request to use simulations across industries is a contribution to practice. It recommends the usage of simulations overall when using eLearning and, based on the factor that the interviewee compared airlines with automotive, he suggests looking in each industry to similar industries or areas and investigate if simulations are probably already used and its usage could be also of value. The suggestion for practice could even go further, as the finding suggests that any producer of products could deliver the needed simulations for the usage directly together with the product. As the current research suggests, this could not only improve the adoption of the products, but it could also increase uniformity.

In summary, the findings of this research around "simulations" give an additional answer to Objective II and contribute to practice to knowledge.

6.3.5 Summary

The last four subsections outlined that the findings around "immediate" and "short learning" as well as "uniformity" and "simulations" provide an answer to the second research question "How can eLearning be used most efficiently to drive organisational product adoption?" This means that, from a contribution to practice, the current research requests to finally implement short eLearning, as already identified in the past, but still overdue (Boring, 2020), and to provide it immediately when the learning is needed, which leads to the request to practice to invest more into ubiquitous eLearning. From a knowledge point of view, both topics confirm existing research.

But the current research also shows a strong case and contribution to practice in that a strength of eLearning is that it helps in driving uniformity, which can be a big positive effect of eLearning. The current research even suggests that it can be an advantage over instructor-led learning, and future research could investigate this topic further. The finding around the usage of simulations is, on one hand, an answer to the objective, and a recommendation to practice in using more simulations, but it is also a contribution to knowledge, as it recommends doing more exploratory research to see which additional industries could benefit of simulations, as obviously the benefits of using simulations in one industry are not easily spread to other industries.

6.4 Objective III

In this section, the research findings leading to the answer of Objective III will be reviewed and the contribution to practice and knowledge evaluated. The third objective of this research is to provide recommendations on how eLearning can be used to drive product adoption. The literature gap identified led to the research question "How could

the industry alter eLearning to increase product adoption?" which will support answering Objective III. There are two main findings answering this objective. The first one can be summarised by "the earlier the better" and the second by the request for "personalisation and AI".

6.4.1 The Earlier the Better

The first of the two findings around the third research objective is the topic of providing eLearning "the earlier the better". As outlined in Section 5.3.1, "the earlier the better" is not a new topic in the literature. Cognitive load theory researchers created a solid theory around how to avoid too much cognitive load, and early overviews are known to contribute in a positive way. So, the finding of "the earlier the better" is not a new contribution to knowledge as a statement itself. But the fact that a short eLearning is now a mean, that can easily be used in an early project, during recruitment, at universities or even in school, is new. Using instructor-led delivery methods, it would have been impossible to just use short, for example five-minute snippets, to speak about a topic. With eLearning, this kind of introduction and giving an overview is possible. This means this finding contributes to knowledge, as it suggests that eLearning could be a future standard mean to split a certain load away from the main learning, and the current research provides guidance how to do this by using eLearning. But certainly, the larger contribution of this finding is to practice. This finding suggests that the increase of organisational product adoption is possible by creating short eLearning and to make sure possible future users and decision-makers are getting exposed as early as possible.

In summary, the findings of this research around "the earlier the better" provide a first answer to Objective III and contribute to practice and knowledge.

6.4.2 AI

The second of the two findings related to Objective III is the topic of "AI". As outlined in Section 5.3.2, the findings around "AI" do not represent a totally new contribution to knowledge. The finding describes the request for the usage of knowledge bases and expert systems to identify the skills needs of a user at a certain point of time while using a product. Similar systems already exist on a higher level when career advice is created for employees. So, from a contribution to knowledge, this finding means to adapt existing findings from research around the usage of AI in careers and learning from this macro learning to the micro learning level of the skills of a product user and the needed skills in how to use a product. From a contribution to practice, this finding gives recommendations for the future design of applications, which do not only need to provide knowledge bases

with the needed skills throughout the usage of the product, but, ideally, the product includes an expert system that is able to give eLearning suggestions during the usage based on the knowledge of the user. In an ideal world, the system would probably already know everything about the users, but a system that is building its knowledge base in an intelligent way could also be a recommendation, or maybe users need to describe their experience prior to a first usage.

In summary, the findings of this research around the need for "AI" in the usage of eLearning provide answers to Objective III and contribute to practice and knowledge.

6.4.3 Summary

In summary, the findings of this research around "the earlier the better" and |"AI" give an answer to Objective III and contribute to practice and knowledge. With this third objective being answered, in addition to Objective I and II already being answered in Section 5.1and Section 5.2, all objectives of this research were covered in this conclusion section, and it was shown that all objectives were answered. In the next section, a summary conclusion presents how the aim of the current research was reached.

6.5 Conclusion

The aim of this thesis is to investigate how eLearning drives organisational product adoption, and Sections 6.2, 6.3 and 6.4 related the answers to the identified research questions back to the objectives.

In the following two subsections, a summary is presented that uses the answers to the objectives and summarises them to demonstrate that the current research gives an answer to the overall aim, and how the overall research contributes to knowledge and practice. This section is, therefore, split into three subsections; the first one describes the contribution to knowledge, the second the contribution to practice, and the final subsection outlines the limitation of the work and gives recommendations for future research.

6.5.1 Adaption of Rogers' Model of "Diffusion of Innovation"

This subsection focuses on the contribution to knowledge of the current research. As outlined in the detailed description of how this research answers its objectives from a knowledge point of view, there are some findings confirming existing research. The key items are the need for ubiquitous or immediate access to eLearning (Section 6.3.1), the requirement for short eLearning (Section 6.3.2), the suggestion to have very early

eLearning (Section 6.4.1) and last but not least the suggestion to provide AI support to achieve personalisation (Section 6.4.2) when suggesting eLearning. Each of those findings is interesting in itself, as they confirm existing research or provide additional focus on research areas that were already known but needed more focus. From this point of view, the current research contributes to knowledge on a detailed level.

The key contribution to knowledge is the new empirical framework as outlined in Section 5.3.3). This framework has multiple implications from a knowledge point of view.

First, it suggests that AI could be an answer to some open research questions, as mentioned in context around the question of what the next technology revolution will be in the area of eLearning (Section 1.1.2). Validation of this with future research is needed, but as AI came up in all researched industries it is a strong suggestion. Second, the new framework puts the suggestion forward as to whether this new Ziegler Framework could be the next big evolution of Rogers' model of diffusion of innovation as it takes AI into consideration, which did not exist when Roger suggested his model. And, last but not least, it provides a new framework for the researched industries. Even with the suggestion being of a theoretical nature, weak AI can today be implemented relatively easy, so that additional research could create direct guidance for practice based on the framework to use weak AI for recommendations to learners on how to optimise their time.

6.5.2 The Ideal eLearning Model

This subsection focuses on the contribution to practice of the current research. From a very high-level point of view, the contribution could be summarised as the need to implement the modified model as shown in *Figure 5*. But the current research contributed much more detail and hands-on advice from a contribution to practice point of view than the findings that led to *Figure 5*.

Starting with the two recommendations of "immediate" or "ubiquitous" and "short", the suggestion to practice is straightforward: developers need to listen to this and other research results and shorten eLearning in an intelligent way so that it is consumable and make it available on any platform. Especially, the used triangulation with industry experts of the current research stresses have now been backed up by research across multiple industries. As everybody has access to mobile phones, this platform should be probably taken much more into focus, but maybe some industries need to focus on those platforms that make sense for them and their employees. Assuming, that most learning exists already in a format of eLearning, this recommendation should not be difficult to implement, especially as it follows the idea of ubiquitous computing, which is not new

(Saadiah et al., 2010). The current work gives a lot of weight to existing research as the input comes directly from the HR development VPs of large companies.

The second recommendation is not as straightforward and fast to be executed, but it is a strategic important recommendation, and these are the suggestions of "simulations" and "eLearning to drive uniformity". The current research is not investigating if instructor-led training or eLearning have advantages, but the discussion around how eLearning could be used better took a lot of space in the results. So, the current research suggests practising to review existing learning methods and, wherever uniformity is needed, to rethink the existing method and probably replace it by eLearning. The current research also provides execution details for those implementations, as "simulations" are a strong suggestion based on their very successful usage in other industries. Continuing the already good success of "simulations" in the industry, the current research stresses to go the next step in the industry around "simulations" and think about corporate venturing (Tunstall, Jordain, Pittaway, & Thomas, 2000) in the area of simulations to finally motivate entrepreneurship in this area, which should be promising based on the current research.

The third contribution to practice is the guidance to provide eLearning as early as possible, which means making conceptual eLearning available to schools and universities, provide it free of charge at whatever events will be an important factor. The current research recommends that this investment makes a lot of sense. This not only confirm existing research, but it stresses that the eLearning technology is well-enough developed and can create skills early, which was not possible before eLearning. Based on the current research, which showed an indication of this contribution from most but not all interviewees, additional research is needed to investigate if indeed all industries could benefit, or if a focus on certain industries could make more sense. In this case the industries from Table 13 could be a starting point to be implemented immediately.

Focus on schools and universities to create overall research could be the best strategic approach for a final implementation of the suggestion of the current research around eLearning. A short-term solution implemented outside the investigated 13 industries could be that each interested additional industry provides their own industry-focused research around early eLearning and its benefit.

And, finally, the current research recommends practising to use AI to drive personalisation. The current research does not recommend in detail how this needs to happen, but weak AI, using existing knowledge bases and existing usage data could be a starting point. As users will be positively surprised by any progress in this area, it can be

suggested to start small with any kind of personalisation that is possible. On the other hand, the research suggests that, if AI would really know exactly what is missing around skills, then this could increase product adoption a great deal as users are waiting for products that explain themselves.

6.6 Research Reflections

The aim of this research is to investigate how eLearning supports organisational product adoption. From a methodology point of view, a case approach was used. A case approach is always of an exploratory nature. This means the findings of this research are neither generalisable nor representative. This leads to the first recommendation for future research, and this is the need for additional representative studies to verify the recommendations inside the seven industries. It could be also interesting to extend this research directly to additional industries.

But validating and generalising the current research for large companies is only one of the possibilities for future research. The current research is limited to large companies to reduce the scope of the research, but the contribution to knowledge suggests changes to Rogers (2003) diffusion model and this model is not limited to organisational sizes. So, future research could also focus on extending the current work to any other company size. This could be of major interest not only from a contribution to knowledge, but it could be an interesting contribution to practice as small or medium-size fast growing companies would know that they can use the same eLearning strategy to drive product adoption independent of the size of their company and set a clear guidance.

As mentioned during the definition of the scope of the geographical validity, an additional limitation of this research is the focus on the EU and NA. As research exists that organisational product adoption is working differently in Asia based on cultural differences (Poon & Yu, 2006; Warner, 2003), two additional research suggestions arise based on this. Firstly, additional exploratory research in the Asia region could be of interest to investigate how the findings in the current work are also helping to drive organisational product adoption there. Thinking of the large companies that are the subject of the current research, the assumption can be made, that the Asian market is of interest to them, and research indicating that they can use the same eLearning approach also in the Asian market could be a very interesting contribution to practice. It could even add interesting facts to knowledge as, in the heritage world, organisational product adoption in Asia works differently than in the rest of the world. If eLearning could contribute to remove those differences, this could be a strong signal to practice and

knowledge.

An additional limitation of the current research arises out of the fact that it focuses on organisational product adoption from a whole organisation point of view, as the interviewees were the HR leads responsible for organisational learning. Based on the discussions during the pilot, this approach makes sense for the current exploratory research, but it still limited the results, as it does not investigate whether the current results would also hold if the interviewees were, for example, projects leads or project architects responsible for a technical implementation inside a company. In small and medium-sized businesses, those roles may not exist or work closely together with the HR development leads, but, in large organisations, the pilot showed that those people act completely independent on the HR development leads. So, an additional opportunity for future research could be to investigate how the enablement that is dedicated to one project could be influenced by the right eLearning to create organisational-wide product adoption based on a single project.

And finally, this whole case approach focused on eLearning and produced extensive qualitative contribution to practice and knowledge. On the quantitative side, questions could be asked if organisational product adoption could be increased by adding live virtual classroom training. As, during the last year, automated simultaneous translation has made progress, there are, during the next years, at a certain point of time, no longer limitations in language and reach of live instructor-led training, even if this approach would never scale as eLearning. But, for future researchers, the question could still be of interest to investigate from a quantitative point of view whether it makes sense for companies to invest into live virtual instructor-led training at all, or of there are only limited differences in the organisational product adoption.

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APPENDIX

A1 Interview Guide

First: Do you agree to record the Call?

Q1 Introduction to Research Topic by me – so that participant understands what we're doing (… creating ideas for BMI for SaaS Providers – expectation is that eLearning can help to drive value for Clients and ultimately for the SaaS Providers…)

    a. The Interview will have three parts.
        i. Understanding of experience of Interviewer/Projects
        ii. Looking back to understand when eLearning worked well for you.
        iii. Forward vision: what would be the idea state – going beyond what exists today and expecting open discussion.

Q2 If you think back to the time of the projects: When did you use eLearning to train the project team?

    b. Can you explain this further?
    c. Any other point of time you missed so far?
    d. Have you also used Instructor Lead training?

Q3 At which point throughout all phases was eLearning most efficient to drive product adoption? Think of all the project phases from prior to starting the project until thoughts to increase product usage.

    e. What made eLearning successful at that point of time?
    f. Why do you think this was the case?
    g. What did not work at all?

Q4 Think of all your experience with eLearning all your projects and experience. Forget existing technologies and ways how and when eLearning is offered today:

    What do you think would be the best point of time and the best way to use eLearning to drive product adoption?
    h. Why do you think this is the case?
    i. Why do you think this is not happening today?
    j. Limitations?
    k. Tell me more?

Q5 Any additional comments for our topic?

Q6 Is there somebody inside your company whom you could recommend running an additional interview with me to give me more insights?

    l. Or probably somebody outside your company?

Thank you for the interview!

A2 Participant Consent Form

Edinburgh Napier
UNIVERSITY

Edinburgh Napier University Research Consent Form for study:

"Exploration how software companies can use eLearning to generate value for their clients and capture value at the same time"

Edinburgh Napier University requires that all persons who participate in research studies give their written consent to do so. Please read the following and sign it if you agree with what it says (you can also agree by replying to the email you received with the form with your agreement)

1. I freely and voluntarily consent to be a participant in the research project on the topic of "Exploration how companies can use eLearning to generate value for their clients and capture value at the same time" to be conducted by Alexander Ziegler, who is an postgraduate student at Edinburgh Napier University.

2. The broad goal of this research study is to explore at which point of the buying and adoption process of software products eLearning has the biggest influence on product adoption and to develop new business models for software providers based on the findings. Specifically, I have been asked to participate in an interview, which should take no longer than 60 minutes to complete.

3. I have been told that my responses will be anonymised. My name will not be linked with the research materials, and I will not be identified or identifiable in any report subsequently produced by the researcher.

4. I also understand that if at any time during the interview I feel unable or unwilling to continue, I am free to leave. That is, my participation in this study is completely voluntary, and I may withdraw from it without negative consequences. However, after data has been anonymised or after publication of results it will not be possible for my data to be removed as it would be untraceable at this point.

5. In addition, should I not wish to answer any particular question or questions, I am free to decline.

6. I have been given the opportunity to ask questions regarding the interview and my questions have been answered to my satisfaction.

7. I have read and understand the above and consent to participate in this study. My signature is not a waiver of any legal rights. Furthermore, I understand that I will be able to keep a copy of the informed consent form for my records.

_____   _____
Participant's Signature   Date

I have explained and defined in detail the research procedure in which the respondent has consented to participate. Furthermore, I will retain one copy of the informed consent form for my records.

_____   02.02.2020   _____
Researcher's Signature   Date