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Development of a business model for the internationalisation of a Finnish corporate training service for the European data centre industry

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Abstract Internationalisation is one of the key forces driving the most rapid transformation of Higher Education ever witnessed, with corporate training services in high demand, as identified by the recent TechNavio report (2016). An associated business opportunity has been identified that may significantly develop education export activities at Kajaani University of Applied Sciences (KAMK) and the Adult and Continuing Education AIKOPA. Therefore the main objective of this research is to develop a commercially viable business model for the internationalisation of a Finnish corporate training service for the European data centre industry. The research, which adopts a Design Research strategy, uses Osterwalder's and Pigneur's (2010) Business Model Canvas as a theoretical framework to guide the empirical study utilising qualitative research methods. Based on the analysis of the primary data, which was collected through in-depth stakeholder interviews and participative observation, the final business model is presented at the end of the study, followed by reflection in light of internationalisation and business models literature. The study is an applied literary contribution to the relatively new phenomenon of education export in Finland, especially in the field of professional training services export. From the perspective of the data centre industry the study brings an academic perspective to a recognised phenomenon, drawing theoretical analysis together with data gathered directly from key industry representatives to propose a practical and entirely feasible solution. It is recognised that the scope of this research is limited, so additional detailed design is required to practically implement the service. A cost-benefit analysis and competitor analysis should be conducted, and the initial market for piloting the service internationally should be limited according to available budget. Additionally, this research may be used as the basis for designing business models for other niche industries that require professional training services.

Keywords/tags (subjects) education export, internationalisation, business models, business model canvas, corporate training
Miscellaneous

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1 Introduction

1.1 Transformation in Higher Education

Globally education is going through the biggest transformation ever witnessed and the pace of this transformation is tremendous. Disruptions in Higher Education are changing the landscape of the education market place as the gates to accessibility and affordability are being unlocked through disruptive innovations (Christensen, Aaron, & Clark 2003, 28–29). Technology is becoming increasingly important to the learning and teaching process in Higher Education and is responsible for improving access to education and training in some countries. Modern societies are increasingly developing into "knowledge-based information economies", with the result that economic and social development are being driven by information technology. (University of Oxford 2015, 15.)

Internationalisation is another key force that is impacting and shaping Higher Education transformation, and during the past 10 years many countries have increased their focus on generating income that is connected to the cross-border delivery of education (Knight 2008, 19-26). The economic potential of importing and exporting educational services is further reinforced by the fact that education was listed as one of the service sectors in the General Agreement on Trade in Services (Knight 2002; World Trade Organization 2017). Currently education export and competence services are one of the fastest growing export sectors globally (Ministry of Education and Culture 2017, 24).

In Finland internationalisation is recognised as a core essence of research and education (Piiroinen 2015, 24). In 2015 Prime Minister Juha Sipilä's Government Programme highlighted the need to increase the internationalisation of education and research, as well as strengthen cooperation between higher education institutions and business life to foster innovation (Strategic Programme of Prime Minister Juha Sipilä's Government 2015, 18-20). The programme stated that by 2025 the Finnish system of higher education will be of higher quality, more international, effective and efficient, as well as more internationally competitive (Piiroinen 2015, 24). In response to one of the principle objectives of the Government Programme the

Minister of Education and Culture, Sanni Grahn-Laasonen, launched "vision work" with the aim of producing a "future scenario which will enable a high-quality, effective and international competitive development of the Finnish higher education system" (Ministry of Education and Culture 2017).

According to the results of the Tekes survey (2015) the volume of education export in Finland was comprised of approximately 260 million euros in 2014. The Prime Minister's Government Programme set a target of increasing education export to 380 million euros by 2018 (Action plan for the implementation of the key project and reforms defined in the Strategic Government Programme 2016, 47). The Education and Culture Minister, Sanni Grahn-Laasonen, has continuously highlighted that legal obstacles must be overcome in order to realise the full potential of education export and achieve competitiveness on an international level (Finland Times 2015).

Since 2009, a number of projects have been run in Finland to prepare export strategies for Finnish education, and several business areas have been developed using multi-mode learning methods including virtual learning (Myklebust & Dobson 2015). In line with measure 4 of the Government Programme action plan - "remove barriers to education exports at all levels"- and based on the results of a survey conducted amongst higher education institutions and private companies, a road map with key strategic steps was produced in order to remove the obstacles and boost the export of education in the next 3 years (Ministry of Education and Culture 2016). The road map document (2016, 3) defines education export as

> *"All business activities based on education, the education system and the transfer of knowledge that create products or services that a foreign party pays for."*

Road map activities are set to be supported through the Education Export Finland growth programme and Team Finland network. To strengthen support for education export activities even further, the Ministry for Foreign Affairs has appointed Marianne Huusko as an official Ambassador for Education Export (Ministry of Education and Culture 2016). One of the most recent developments in the internationalisation of education, and education export in Finland, is the set of policies on promoting internationality in higher education and research 2017-2025,

proposing seven packages of action. One of the objectives is to gain momentum for the export of Finnish competence by establishing an enterprise with the role of investor and partner in large and otherwise interesting education export initiatives. (Ministry of Education and Culture 2017, 24-25.)

1.2   International potential of corporate training

> *"Corporate training programs are those training programs designed by the organizations to impart the requisite skills and competencies required to do the job" (Singh 2016)*

Already in 2002 it had been observed that due to the growth of the knowledge economy and movement to lifelong learning, the demand for professionally related courses and non-traditional delivery modes was on the increase in most countries (Knight 2002, 2). Christensen et al. (2003) observed plenty of evidence that globally companies were encouraging and supporting their staff to undertake training while employed, rather than undertake advanced Business degree programs or advanced technical degrees. That was because it was considered that employees derived more value from these professional programs, which related directly to challenges they faced in their jobs. The academics saw corporate training services as one of the disruptors in education. (30-31.)

According to a recent article by Vyshnyk (2016) the main drivers of corporate training in Europe are:

- Engagement. Through the means of corporate training the organizations ensure their employees' involvement in the working process by giving opportunities to develop their skills and utilise obtained knowledge. (ibid.)

- Digitalisation. E-learning courses reduce costs and offer flexibility of completing the training at preferred time and place settings. Gamification as a delivery method is gaining more popularity because of the engagement feature. (ibid.)

- Vendor competition. Technical skills are amongst those in highest demand, especially in the growing IT sector. There is a particular focus on skills relating to job roles, which have the potential to increase working efficiency. Vendors

who are creating such tailored training services have achieved significant market presence in the learning and development industry. (ibid.)

- Growth of Small and Medium Businesses. The increasing growth of new small and medium size businesses opened a new business opportunity for corporate training providers because they in turn fueled demand for tailored, industry-specific corporate training services. "Experienced, qualified vendors understand the importance of leveraging technologies to provide effective learning solutions". (ibid.)

TechNavio research consultancy highlighted in their recent "Corporate training market in Europe 2016-2020" report (2016) that there is a huge demand for corporate training products and services across all industries. Their analysts forecast that the corporate training market in Europe will grow 9% yearly during the period 2016 to 2020, with the technical segment dominating the market. Due to the presence of several training solution providers and training professionals, the European corporate training services market is considered to be one of the most dynamic and rapidly developing markets. The analysts also observed the emergence of niche corporate training companies that cater only to specific industries. (Technavio 2016.)

1.3 Motivation for the research

The primary motivation behind this research originates from an identified business opportunity that can potentially have a significant effect on the development of education export activities, specifically corporate training services, at Kajaani University of Applied Sciences (KAMK) and Adult and Continuing Education AIKOPA. The business opportunity is connected to a corporate data centre training service that was initially offered to Finnish IT professionals through a publicly funded project. The training was recognised internationally as being unique and important to the growing and evolving data centre industry (AIKOPA news 2014). This led to the start of the research and development work in order to internationalise the training to make it commercially viable. Next, the motivation and relevance of this research topic is presented on international, national, organisational and personal levels.

International level

The changing nature of global business has necessitated the evolution of data centres, resulting in rapid changes to their management and operation. Data centre operational costs and technical performance are therefore critical to the operation of businesses of all sizes across the world.

According to the 2014 CompTIA IT Skills Gap survey, there is a significant shortfall of data centre talent globally and 72% of companies plan to address this issue with staff training (Riccio 2017). Between 2015 and 2020 in Europe it is predicted that there will be an annual spending increase of 6% on data centre services, which could lead to up to 340,000 new European jobs (see Figure 1). However, it is possible that up to half of those jobs could be unfilled, due to a combination of retiring existing staff and skills gaps. Additionally, as data centre technologies change this will result in significant changes to job profiles and skill requirements. One impact of automation and virtualisation technology changes will be that fewer staff will be required exclusively for facilities monitoring and management. (Eul & Menke 2015, 1-4.) According to the consultants Eul and Menke (2015, 4) "without a concerted effort by enterprises, governments, and educational institutions to close these gaps, Europe may miss a significant opportunity."
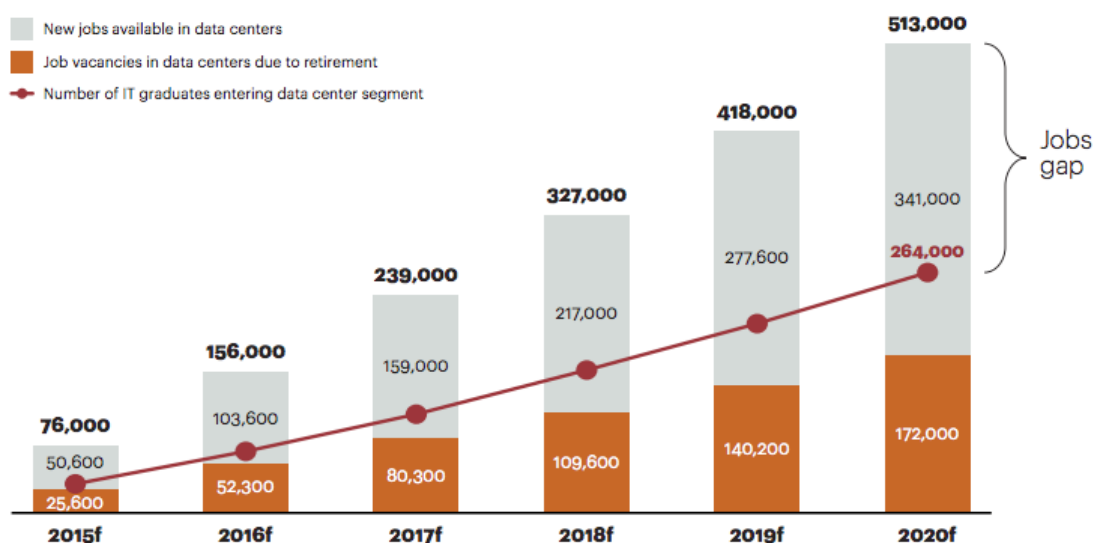
Figure 1. Data centre jobs available in Europe 2015–2020 (Eul & Menke 2015, 3)

The skills gap is especially prevalent in individuals with minimal employment experience, and furthermore in the facilities teams of those data centres that outsource some of their utilities functions. This outsourcing is a common practice that further exacerbates the skills gap issue since that expertise is isolated outside the ecosystem. Demand for a professional training program that would address this issue has been raised by a range of small to large data centre operators, such as Google. (Kemppainen 2014.)

National level

One of the Finnish industries that has significant potential for "going international" is corporate training (Finpro 2016). Finnish education providers are encouraged to develop offerings in digital solutions and platforms, at-work training and industry specific trainings (ibid.). The Finnish Education Export road map (2016) includes actions with regards to exporting corporate (competence) training, highlighting the significance of this service amongst other educational products and services (Ministry of Education and Culture 2016).

Most of the identified published research in Finland on the topic of education export relates to degree programmes or vocational education, with a significant volume of research concentrated on market research in specific countries. This thesis contributes to the education export phenomenon by looking at a concrete case of professional corporate training services and applying a business model perspective/view. This approach can benefit Higher Education Institutions across Finland in developing their education export activities, especially in connection with the export of corporate training services.

Regional level

The development of existing data centre business within the Kainuu region of Finland, and the attraction of new data centre investments, is considered as of paramount importance at a regional level (Kainuu Regional Council 2015, 48). The decline of the paper industry as a major local employer (both directly and as a customer of local services) has resulted in the need for a core growth industry in line

with the modern world. For the Kainuu region to truly be considered as a credible European data centre hotspot the area must be able to demonstrate expertise in modern data centre build and operation.

By undertaking this thesis it is intended that the research and outcome will provide the basis for a professional data centre training course to be created and exported internationally for commercial gain and to further increase international and national recognition of the Kainuu region as a location of data centre expertise.

Organisational level

Kajaani University of Applied Sciences' (KAMK) renewed its strategy in 2015, aiming to transform the university into the smartest University of Applied Sciences in Finland by 2024. As part of this strategy, internationalisation is a core focus of all future activities; therefore this thesis supports the strategic objectives of the university. (KAMK strategy 2015 – 2024.) In addition, KAMK has a current objective to commercialise a variety of its products and services for general sale. By undertaking this thesis a business model framework will be created that may be applied to other cases of corporate training so that they may also be exported.

KAMK offers a dedicated degree program for data centre specialists, with graduates being highly regarded within the Finnish data centre industry. Stemming from this local expertise, a pilot "Eco-efficient data centre training" course was managed and delivered by KAMK and Adult and Continuing Education AIKOPA, indicating that there is specific local expertise in the field of data centre education. Internationalising the data centre training service would generate additional expertise for KAMK, and would also develop significantly more international contacts that would strengthen the overall data centre educational offering locally.

Personal level

The researcher holds a position within KAMK's R&D department, where she is part of a team that is focused on developing and exporting educational and business services. By adopting a business model perspective for the export of a professional educational service she believes she has an opportunity to shape this aspect of education export at a local and national level. By recognising a prominent service gap

in the European data centre industry, the researcher believes that the positive reputation of Finnish education, along with the positive recognition of the pilot data centre training service previously offered, together represent a significant opportunity to create a viable business model.

1.4 Research objective and question

As described in the previous chapter, there is a significant business opportunity to address the knowledge gap in the data centre industry and growing demand for qualified data centre professionals. In addition, Finnish education providers are encouraged by the Finnish government to develop at-work training services and industry-specific training services. This research and development work stems from the problem that KAMK and AIKOPA do not have a suitable business model to internationalise a corporate training service for data centre professionals that was initially piloted in Finland through a publicly funded project. Therefore, the main research question is: **What suitable business model would enable the successful internationalisation of a Finnish corporate training service for the European data centre industry?**

The scope of the research is limited to the European market for pragmatic reasons. Firstly, due to EU industry regulations the content of the training service is likely to be applicable to all EU participants. Secondly, the training may include contact classes in Finland, so travel within Europe is deemed as feasible.

In conducting the research the researcher has adopted a position of pragmatism, because the creation of a business model for a real life education service means that every decision has a variety of associated "knock-on" business implications. Therefore, the highlighted ideas, theories and decisions need to be considered in relation to practical limitations and not a purely in theoretical manner. Pragmatism is especially relevant to the development of an educational service since it considers activity and individual differences to be key enablers to educational development (Kaloho 2015, 160).

Since the nature of the research topic is highly practical and aimed at the development of a process in organization, the research question is answered utilising

design research strategy. This strategy enables the researcher to choose a number of methods from quantitative and qualitative research methodologies in accordance with the situation or an objective for development (Kananen 2013, 20). Design research strategy strongly emphasises the innovation and flexible approach in integrating the benefits of "learning from experience" and doesn't purely aim to produce the "artefacts" (Eisenschmidt & Niglas 2014, 224). In terms of relationship between theory and practice, this study is following abductive reasoning, where the researcher oscillates between theory, empirical data and analysis (Dubois & Gadde 2002).

The final objective of this study is to **develop a business model for the internationalisation of a Finnish corporate training service for the European data centre industry** in order to make it commercially viable. Utilising the resulting data from the empirical study and the business model concept identified through the theoretical framework, the researcher will draw conclusions to enable the design of a suitable business model for the training service.

1.5   Structure of the thesis

The structure of the thesis and content of each chapter are presented on the next page in Table 1.

Table 1. Structure of the thesis

Chapter	Description
1. Introduction	The introduction presents background information on education export and the international potential of the professional corporate training service. The chapter also includes the motivation behind the research and research contribution on an international, national, regional and personal level. The research objective and the main research question are presented at the end of the chapter.
2. Literature review	The chapter includes a critical review of literature and previous research on two key topics: internationalisation and business models. At the end of the chapter the theoretical framework for empirical study is presented.
3. Methodology	The Methodology chapter defines the research philosophy and presents justifications regarding the chosen research approach and strategy. The chapter also includes the research context, data collection and data analysis methods. Lastly, the chapter describes the methods used in ensuring the trustworthiness of the research.
4. Results	The chapter presents the results derived from the data gathered in the empirical study. The results are presented in accordance with the theoretical framework used. The process of creating the business model is described and the final business model is presented.
5. Discussion	The last chapter of the thesis includes discussion of the results in the light of the reviewed literature, followed by practical implications and recommendations to the management. Limitations of the research are acknowledged. The chapter concludes with recommendations for future research.

2   Literature review

The objective of this research is to develop a business model for the internationalisation of a Finnish corporate training service. In order to achieve the objective, relevant literature and previous research was studied and analysed, concentrating on two key topics that lie at the heart of the research phenomenon:

internationalisation and business models (Figure 2). The first part of the literature review briefly introduces internationalisation from an educational perspective and subsequently focuses on internationalisation from a business perspective. After conducting a wide literature review on the topic of internationalisation of education it was concluded that a business perspective is more relevant and essential to achieving the main objective of this study. The reviewed internationalisation literature was used to broaden the researcher's understanding of the internationalisation process and was kept in mind throughout the research process. The second part of the literature review is devoted to business model concepts and serves as the basis for the theoretical framework, which was used to guide the empirical study and answer the main research question.
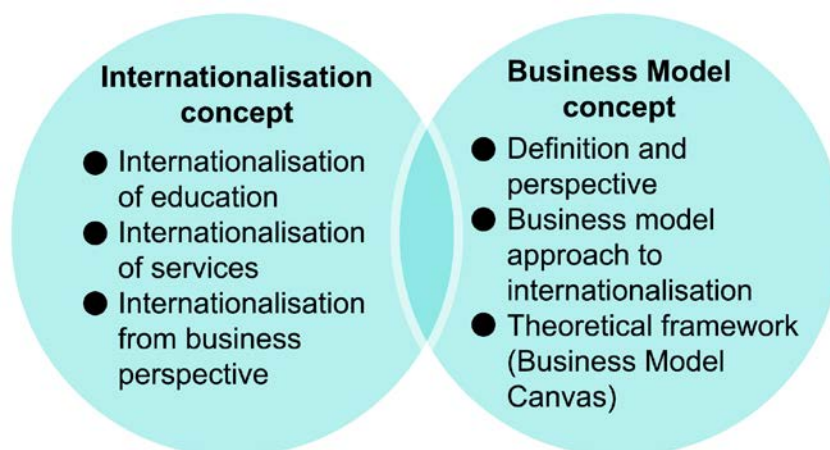
Figure 2. Key concepts presented in the literature review

The literature review mostly includes peer-reviewed journal articles from Ebsco (Academic and Business Search Elite), ResearchGate, Google Scholar and ScienceDirect online research databases. Additionally, articles from respected publications (e.g. Harvard Business Review, the Finnish Ministry of Education and Culture) and Higher Education Institutions' publications were included, reflecting views based on experiences and observations.

2.1 Internationalisation of education

Countries and regions that wish to remain competitive in international markets and fully participate in international political and social currents recognise internationalisation of education as a proxy for quality (Klemenčič 2015, 3). Globalisation and the significantly increased importance of knowledge greatly influenced the internationalisation of Higher Education in the past decade (de Wit, Hunter, Howard, & Egron-Polak 2015, 27).

Over the years there have been many different definitions and terms formed in relation to the internationalisation of education (De Witt 2010, 8). Wächter (2004, 8-9) divided the concept into "old internationalisation" that used to only involve mobility, and "new internationalisation" that involves collaborative international issues that are relevant to structural and regulatory higher education issues. In other words, "new internationalisation" concerns core issues of education policy.

One of the most featured definitions is of Knight's that was originally proposed in 2004 and thereafter updated in 2015 to reflect current changes and challenges:

> *The intentional process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society (Knight 2015, 2; de Wit et al. 2015, 29).*

This definition signifies that internationalisation should not be seen as a peripheral element but should play a central role when shaping educational programmes (Knight 2004, 7). In addition, it incorporates "international, intercultural and global dimension", that together reflect the breadth of internationalisation and hence are used as a triad (Knight 2015, 2). Greblikaitė, Barynienė, and Paužaitė (2015, 74) observed that just recently higher education institutions started to recognise internationalisation not as a final goal, but as a "process of development, a way of new thinking and understanding" and perceive it as a new tool for competitiveness in a global market.

Kehm and Techler (2007, 233) noted the following shift in themes discussed in the literature on internationalisation of education:

- from internationalisation to globalisation,

- from the information society to the knowledge society and modes of
  knowledge transfer (e.g. ICT, mobility, export of programmes),

- from structural variety to homogeneity,

- from administration of mobility to strategic action and systems steering of
  internationalisation.

Internationalisation of education is driven by a combination of rationales that dictate the benefits or expected outcomes from internationalisation efforts (Knight 2008, 25). In addition to that, it is shaped and guided by the strategies and policies on European, national and institutional levels (Pyykkö 2015, 37). Therefore, each university or country approach to internationalisation might be different (de Wit 2015, 27). Traditionally the rationales driving internationalisation have been grouped into four categories: *political*, *economic*, *socio-cultural* and *academic rationales* as presented in the Figure 3 (Knight & de Wit 1999; Knight 2008, 25).

- New knowledge
- Profiling
- Quality enhancement
- International dimension to research and teaching

- Peace & security
- Global positioning
- Workforce development

Political rationales

Academic rationales

Economic rationales

Socio-cultural rationales

- Intercultural understanding
- Equality
- Justice

- Global competition
- Labour market
- Income generation
- Branding and profile

Figure 3. Main rationales of internationalisation of education (summarised based on Knight & de Wit 1999; Knight 2008, 25)

In the last decade there have been some significant shifts in rationales driving internationalisation that cannot be neatly placed into any one of the four categories. To mention a few, these include: *Human Resources Development*, where nations place more importance on developing and recruiting human capital through international education activities; *Strategic Alliances*, where collaborative efforts are being seen as a boost to productivity and development of economic relationships; *Commercial Trade*, that represents a more commercial approach to internationalisation with emphasis placed on economic and income-generating opportunities. (Knight 2015, 3-4.)

Martin and Peim (2011) observed two main interconnected trends in terms of internationalisation as the result of the growing demand for higher education. Compared to leading OECD nations, a number of countries reported under-provision of education. At the same time, the trend in the west showed a significant decrease in public funding for Higher Education institutions, which created a need for raising money from alternative sources such as export of education. (129.) Knight (2008) also highlights diversification of funding sources and support for higher education as a key new challenge for internationalisation, the results of which include the commercialisation and diversification of higher education and research. (8.)

Wächter (2004, 10) noted that there has been a shift in motivation for organisations engaging in international activies, where a model of cooperation has changed to one of competition. This is often explained by the fact that increasing national and international competition for resources and best talent influenced the careful choice of partners. It was observed that "strong competitiveness is usually accompanied by strategic alliances with selected partners". Kehm and Techler (2007, 235.) Increased education commercialisation and competition raised a debate on whether higher education institutions are losing their social, cultural and intellectual objectives and shifting their focus towards production of "commodities" for an international market (Naidoo & Jamieson 2005, 54).

Information technology, openness, analytics, assessment, and public-private partnerships have been real game changers in the delivering education value, especially internationally (Oblinger 2012). De Wit et al. (2015, 30) highlighted in their

study "Internationalisation of Higher Education" that more focus must be applied to digital and blended learning "as instruments to complement the internationalisation of higher education". Dunn and Marinetti (2002) conducted extensive anthropological and cross-cultural research related to online learning and identified that lack of cultural adaptation is the main reason online learning fails to work on a global scale. As a result of Edmundson's "Cross-Cultural Dimensions of Globalized E-Learning" study (2004), the author introduced the Cultural Adaptation Process (CAP Model) for adapting e-materials in cross-cultural settings. Based on the original work of Marinetti and Dunn (2002), Edmundson (2004, 2005, 2009) then recommends four levels of adaptation based on the type of content, instructional methods, and media used. The types of cultural adaptation include: translation (using globalized English), localisation (addressing obvious visual and textual differences), modularisation (plugging 'reusable learning objects' into the programme) and origination (start from scratch but with the full participation of the learners in the targeted culture).

2.2 Internationalisation of services and Education-as-a-Service concept

Education can be categorised as a service since the "consumers" are transformed or changed through gaining a new knowledge and skills (Simmering 2016). In addition to that, education was listed as one of the service sectors in the General Agreement on Trade in Services (World Trade Organization 2017). According to Lämsä and Uusitalo (2012, 19) any service is unique; it cannot be stored, returned or sold again as a physical good.

Organisation for Economic Co-operation and Development (OECD) interprets internationalisation of services as "the internationalisation of services markets including an increased mobility of capital, people, know-how and other resources which have the effect of increasing the interdependency of economies" (Cave 2006). It was noted in the OECD report on services internationalisation that digitally delivered services are more likely to become increasingly internationalised (ibid.).

A vast amount of articles on services internationalisation include a discussion on whether internationalisation of services differs from internationalisation of goods. In

this respect literature on the internationalisation of services reflects three main points of view (Grönroos 1999, 290). Boddewyn, Halbrich, and Perry (1986), Terpstra and Yu (1988), Agarwal and Ramaswami (1992), Katrishen and Scordis (1998), Javalgi, Cutler, and Winans (2001), Elango and Abel (2004) to mention a few, put an argument across that there is no difference between internationalisation of services and goods. A number of authors, for example, Erramilli and Rao (1993), Ekeledo and Sivakumar (2003), Brouthers and Brouthers (2003), concluded that internationalisation theories developed based on the manufacturing firms cannot be directly transferred to the services. Sharma and Johanson (1987) and Dunning (1993), amongst a few, argued that basic process of entering foreign market is the same for products and services, however the actual implementation of the internationalisation process is different for services.

Craig (2014) of University Ventures, a premier investment firm focused on the global higher education sector, compares higher education to enterprise software. He believes that just as software companies transformed their offering to Software-as-a-Service (SaaS), education providers will eventually transition to "Education-as-a-Service" (EaaS). This will allow a more flexible delivery model to cater to future students who will begin their higher education with awareness of both their existing competences and also those competences required for the job positions that they are aiming for. This model will also cater to the professionals who need to re-train or develop their competences further. Based on the success of SaaS market leader Salesforce.com Craig (2014) puts forward some valuable suggestions to universities in order to prepare for the transition to EaaS:

1. That organisations should decide on a business model (or models) before doing anything else. He believes that, just like in any other business, it is important to identify who your customers are, what value you are providing them with and who is paying for your service. (ibid.)

2. That a "customer for life" mindset should be instilled in sales and support staff, because right from the start sales (promotion of a programme/training) should concentrate on value, with the aim of providing ongoing education based on the current needs of the customer. (ibid.)

3. That product development must be agile, meaning that the same course cannot be taught the same way over the years. He claims that EaaS has to be up-to-date with cases and examples taken from current headlines and that this product development at universities can be efficiently achieved in the future through partnerships with service providers, especially when these operations will become more central to the core value proposition. (ibid.)

4. That customer service should focus on outcomes, which for universities means helping their customers to optimize their return on investment (course fee) by, for example, making obtained skills more visible to employers (e.g. digital portfolios, direct contact with employees). (ibid.)

5. That governance and leadership structures should be rethought to make better, faster decisions. He believes that for universities who are already struggling with digital reality, moving to EaaS will be even more challenging unless they streamline today's governance for more effective and faster decision-making. (ibid.)

2.3 Internationalisation of education from a business perspective

Since the export of a corporate training course can be viewed as a business transaction, it was considered essential to look at the internationalisation of education from a business perspective. Dunning (1995) stated that no single theory of internationalisation can fully explain all forms of cross-border activities in goods and services. In support of this view, Crick and Spence (2005) recommend to adopt a multidimensional approach due to the iterative nature of internationalisation.

As mentioned in chapter 2.2. there is an argument that the majority of internationalisation theories have been developed from the point of view of manufacturing firms and are not always directly applicable to service industries, such as education (Pla-Barber & Ghauri 2012, 1007). However, based on the reviewed academic research related to the internationalisation of education, the internationalisation theories covered in the sub-chapters below have been previously connected to Higher Education internationalisation, especially in the context of education export.

2.3.1 Uppsala Model

Johanson & Wiedersheim-Paul (1975) put an argument forward that decision to internationalise is affected by two challenges: lack of knowledge as well as psychological (e.g. language, education, culture, business practices and industrial development) and geographical distance. The researchers introduced the Uppsala internationalisation stages model, according to which a company utilizes high control modes when its knowledge of overseas markets is low and when it accomplishes more experience and maturity. The theory, that was further developed by Johanson and Vahlne (1977), is based on four central concepts: market commitment (i.e. number of resources committed to foreign market or size of investment), market knowledge (i.e. company's knowledge of overseas market and operations), current activities (i.e. activities that help company to gain experience and achieve knowledge of overseas markets opportunities) and lastly, commitment decisions (i.e. decision made to commit resources to overseas operations in response to market opportunities and threats) (Johanson & Vahlne 1977; Andersen 1993).

According to Uppsala model the internationalisation stages commence with irregular export activity, moving to exporting via an independent agent, thereafter the use of foreign sales subsidiary to, finally, full production in foreign market (Johanson & Wiedersheim-Paul 1975; Johanson & Vahlne 1977; Cavusgil 1984). During each stage the company gradually gains more knowledge, skill and confidence, in effect adopts new modes that utilise the past experience the most (Edwards & Edwards 2001).

Since the model was developed and mainly tested in manufacturing industries, Johanson and Vahlne (1990) argued that it may not be directly applicable to service industry (e.g. education export) and suggested a context specific approach in understanding internationalisation processes of services (Carneiro et al. 2008). Ahmed (2010) studied applicability of Uppsala model to Higher Education Institutions through the example of 3 Australian universities. The researcher concluded that in the studies cases internationalisation strategy and implementation were driven by more than just knowledge about the market but also regulatory factors, market potential, business opportunities and comparative market condition. (65.) Edwards & Edwards (2001) added that even though the universities could follow the incremental

internationalisation path according to Uppsala model, this approach may not necessarily accommodate market expectations and might make them vulnerable to competition of bigger and more experienced universities.

2.3.2 Transaction Cost Theory/Transaction Cost Analysis

The transaction cost theory or transaction cost analysis provides a model that assists decision makers in evaluating different entry modes of entering a foreign market (Erramilli & Rao 1993). In this model transaction cost is used as a unit of analysis, and forming any agreements or contracts is dependent on the cost of market transactions (Cumberland 2006; Seggie 2012). Based on the comparison of transaction costs with the costs of integrating activities associated with internalization of operations, the company chooses the most efficient governance structure (Brouthers 2002; Malhotra, Agarwal, & Ulgado 2003). In the transaction cost analysis, achieving efficiency is the main reasoning for the choice of entry mode (Gannon 1993).

Erramilli and Rao (1993) and Murray and Kotabe (1999) studied the transaction cost theory from a service industry perspective and argued that it had to be modified for service companies due to labour-intensive nature and inseparability of production and consumption, therefore requiring less financial investment compared to the manufacturing companies.

Transaction cost theory is considered to be closely related to internalisation theory (Rugman 1985), since cost minimisation of cross-border transactions is a result of companies internalising in both. They both argue that the internalisation of markets across borders is more efficient because the transaction costs of activities coordinated jointly in different countries may be less than using market mechanisms across countries. (Welch, Benito, & Petersen 2007, 24-28.)

For the context of this research transaction cost theory could be considered when making a cost/benefit analysis of entering the international market, negotiating prices, drawing up contracts and enforcing contracts. International sourcing or outsourcing of data centre training experts can also be analysed from the transaction cost perspective. The ability and skill to keep transaction costs low when

internationalising the training, could create additional value from these transactions (Butter 2011, 29).

2.3.3 Network theory of internationalisation

The ubiquity of networks and networking at different levels (e.g. industry, firm, group, individual) has attracted considerable research attention and led to conceptualisation of the network approach to internationalisation (Parkhe, Wasserman, & Ralston 2006; Malhotra et al. 2003). According to this approach, network relationships enable companies to enter new markets, speed up international expansion and traditional internationalisation models may no longer be applicable (Johanson & Mattsson 1988; Laanti, Gabrielsson, & Gabrielsson 2007). A number of case study research (Axelsson & Johanson 1992; Johanson & Vahlne 1990; Coviello & Munro 1997) demonstrated that networks can affect company's particular market selection as well as the choice of the entry mode.

The focus of the network approach to the internationalisation is on the context of a network of interorganizational and interpersonal relationships (Coviello & McAuley 1999). Identifying a network orientation as well as the roles and capabilities of the actors within it provides the company with an understanding of possible limitations and opportunities for its operations. Moreover, once the company is positioned within an international network it can lead to the development of further linkages with other actors. (Axelsson & Johanson 1992; Johanson & Vahlne 1990.)

Unlike in Uppsala model, internationalisation through networks and networking is more complex and less structured (Malhotra et al. 2003). In line with the theory, competitive advantage is gained not only by company's internal resources but also through engagement and partnerships with other companies (Coviello, Ghauri, & Martin 1998; Johanson & Mattsson 1988). Collaboration activities further internationalisation process by enabling organizations to access complementary assets, competences and capabilities of cooperation partners and provide the opportunity to turn these assets into organization's own resources (Pananond 2010; Leipras 2010, 11).

According to Cumberland (2006) the starting point of the internationalisation are the networks of the home country. Blomstermo, Eriksson, Lindstrand, and Sharma (2004) also stated that when a company enters the foreign market, it can benefit a lot from utilizing networks with home countries suppliers and business partners. Freeman, Cray, and Sandwell (2007) recommended that service companies should use a set of collaborative relationships as their main strategy, especially in the cases where services require simultaneous production and consumption of output.

Hosseini and Dadfar (2012, 182) highlighted in their research paper that there are two main approaches to applying networking in the context of internationalisation. According to the researchers' literature review on the topic, Elo (2005), Fletcher (2008), Fletcher and Barrett (2001), Sydow, Windeler, Wirth, and Staber (2010) studied networks from the framework theory perspective. Amongst others, Covello and Munro (1997), Kontinen and Ojala (2011), Zain and Ng (2006) considered network relationship as a variable that effects internationalisation in different ways.

de Wit, Hunter, Howard, and Egron-Polak (2015, 53) noted that "partnerships have become a defining feature of higher education and an essential part of internationalisation". It has been observed that universities take on a strategic approach to identifying partners with the goal of gaining a competitive edge (Knight 2008, 26). Policy document "Finnish Education Export Strategy: Summary of the Strategic Lines and Measures" (2010, 8) highlights that networking brings added value to the education export and is a necessity considering the fact that majority of Finnish organizations involved in education export are small. A number of research papers and articles related to the education export identified networks as one of the enablers of education export (Education export investigation 2012, 27; Siikanen 2014, 21; Korhonen 2014, 32; El Cheikh 2015, 46; Suhonen & Wickström 2016, 137–138; Ministry of Education and Culture 2016; Kitinoja 2016).

2.3.4 Born Global

Due to trends in globalization as well as technological advances in information and communication technologies, the internationalisation pattern of many new firms has been changing (Knight & Cavusgil 2004). The concept of born global was originally

explored by Michael Rennie in 1993 and since then has been linked to international entrepreneurship, learning effects and network theory (Cavusgil & Knight 2015; Sepulveda & Gabrielsson 2013; Kuivalainen, Sundqvist, & Servais 2007). Born global firms are recognized for their early internationalisation and fast growth (Knight & Cavusgil 2004). Knight and Cavusgil (2004) define born globals as "business organizations that, from or near their founding, seek superior international business performance from the application of knowledge based resources to the sale of outputs in multiple countries" (Knight & Cavusgil 2004, 124). Exporting is the most common approach for born globals at the initial stage of internationalisation (Cavusgil & Knight 2009, 87).

The phenomenon is particularly evident in small and open economies such as Finland and Sweden (Gabrielsson & Pelkonen 2008). Most studies on born global firms are related to the manufacturing and technology sector. However, Halldin (2010) concluded in his study that firms belonging to the knowledge intensive business sector, such as consultancy or training providers, can also be categorised as born global. At the company level the following characteristics are unique to born globals:

- Leadership team possess an international entrepreneurial orientation and sees international markets not as a mere extension or expansion of the domestic one but as the prime focus of the firm's core business (Loane, Bell, & McNaughton 2007)

- Limited financial and tangible resources due to the small size of the business (Haar 2012)

- Strong focus on a differentiation strategy initially targeting niche markets with the potential to eventually roll out to wider audiences and become scalable (Cavusgil & Knight 2009, 84; Haar 2012)

- An emphasis on superior quality that has unique and difficultly inimitable characteristics (Cavusgil & Knight 2009, 81)

- Development and leveraging of international network relationships in order to draw on partners' capabilities and gain access to distribution channels (Cavusgil & Knight 2009, 84)

2.4   Business Models

The main objective of the thesis is **to develop a suitable business model for the internationalisation of a Finnish corporate training service.** In order to achive the objective of this research it is essential to understand the general concept of a business model. The following chapters present an analysis of the literature on business model definitions and perspectives as well as a business model approach to internationalisation. The last chapter introduces the theoretical framework that is used to design the interview questions for the empirical study, analyse the results and essentially answer the main research question: **What suitable business model would enable the successful internationalisation of a Finnish corporate training service for the European data centre industry?**

2.4.1   Business model perspectives

> *"A good business model begins with an insight into human motivations and ends in a rich stream of profit"* (Magretta 2002, 86)

Business model has been a buzzword since the dot.com boom (Margretta 2002, 86; Mahadevan 2000). However, despite its extensive use, there is still some obscurity regarding the exact definition of the concept (Tavlaki & Loukis 2005, 333; Onetti, Zucchella, Jones, & McDougall-Covin 2012). At the most fundamental level the business model addresses how profits are generated and sustained over time (Stewart & Zhao, 2000). Many of the definitions feature a value proposition and also value generation design (Tavlaki & Loukis 2005, 334; Frank de Langen 2011, 210).

Porter (1985, 1996) made several contributions to the shaping of the business model concept through a firm value chain concept, where he underlined the idea of linkages between the industry value chain and the company's value chain, as well as the inter-linkages within the activities of the company's value chain. According to Barney (1991) the business model approach shifts from a strategy's central focus on a firm's internal resources and capabilities, and assumes that value creation and capture drive business activities (McQuillan & Scott 2015). Margretta (2002) associates business models with stories that explain how the company works. A robust business model integrates the fundamental economic logic that explains how value is

delivered to customers at an appropriate cost. While doing so, it also answers questions, such us "who is the customer?" and "how do we make money?". (87.) Afuah and Tucci (2000, 4) view a business model as a "system made-up of components, linkages and dynamics", therefore highlighting an activity system perspective of the concept. Afuah (2004) makes a distinction between business models and revenue models. He views the revenue model as a framework for generating revenue and a business model as a framework for generating profit.

Osterwalder (2005) explained that the interest in business models comes from two opposite sides: established businesses are having to re-invent themselves or find new innovative ways to survive in growing competition; and entrepreneurs who are looking to find a niche for their business. Business models are therefore deemed to be a useful unit of strategic analysis, which can be used by companies of all sizes to help manage change, adapt to changing business environments and integrate new ideas (ibid.). In other words, a "business model represents a "sketch" of strategy which is planned to be implemented within structure, processes and systems of organization" (Osterwalder & Pigneur 2010, 15).

In their extensive review of over a thousand peer-reviewed articles published on the business model topic since 1995, Zott, Amit, and Massa (2011) made an observation that a business model is not just one concept, but rather a combination of many concepts (e.g. "e-business model archetype", "business model as cost/revenue architecture"). In their conclusions the authors highlighted that the business model is frequently used as a new unit of analysis, such as the firm or the network (or nested in between those two). Business model researchers apply integrated and systemic perspective on what businesses do ("e.g., what products and services they produce to serve needs in addressable market spaces") and also how they do it ("e.g. how they bridge factor and product markets in serving the needs of customers"). Thus the business model perspective simultaneously entails the content and the process of "doing business". (Zott et al. 2011.)

Linder and Cantrell (2000) pointed out that a "business model can be defined as a basic logic used by organization while creating value". Therefore the business model is viewed as a conceptual tool, which is made up of a set of elements and

interconnecting relationships. This tool is seen to communicate the logic of operations in a specific area within an enterprise. Creating value is one of the most important characteristics that relate to the importance of business model both in the dimension of value for customer and value for the enterprise. (Grabowska 2015, 1024.)

A number of academic articles highlight the importance of making a distinction between business strategy and business model concepts (Onetti et al. 2012; Seddon & Lewis 2003, 236–246), where "business model is an abstract representation of some aspect of a firm's strategy". Seddon and Lewis (2003, 246) suggest that "combinations of business models could be used for designing strategy", enabling the creation of new strategies for new or existing businesses. In other words, these concepts are interdependent and form a "system of coherent assumption and correlated activities that contribute to achievement of the goals set in organizations" (Grabowska, Krzywda, & Krzywda 2015, 239). Table 2 compares two concepts through questions that are usually addressed when designing a business strategy and a business model.

Table 2. Principal questions that characterize the strategy and business model (Grabowska et al. 2015, 238)

Business strategy	Business model
• What should and what should not be done in the enterprise?	• Which markets does the enterprise operate in?
• Where should value be created and how to improve the value?	• Who does the enterprise create value for and what are the most important customers?
• Which products and services should be provided to customers in order to make them different from competitors?	• Which value does the enterprise generate for customers?
• How to act and which resources should be used? Which resources does the enterprise have?	• How does the enterprise start contacts with customers?
• How to encourage and meet customer expectations?	• What are its relationships with individual market segments?
• How to react to turbulent conditions of the environment?	• What are the principle sources of incomes?
• How to implement effective competitive fighting?	• Which key resources are required to achieve proposition of value?
• How to manage each area of the organizational structure and form their potential?	• Which key actions are required for realization of the value?
	• Who should be regarded as key partners?
	• Which important costs are generated by business model?

2.4.2 Business model approach to internationalisation

A few scholars highlighted the relevance of location decisions in business model formation, connecting it to the importance of understanding local context in international business (Onetti et al. 2012; Meyer 2013). Onetti et al. (2012) argued that entrepteneurship, innovation and internationalisation are deeply interconnected and must be incorporated into practical business models. As a result of categorising and synthesising the main business model components from 70 definitions published from 1996 to 2009, and by extracting the main elements from internationalisation literature, the researchers proposed "focus", "modus" and "locus" as analytical building blocks of the business model concept (Onetti et al. 2012). Presented in Table 3, "Focus" represents the relevance of different activities, "Locus" represents the localisations of different activities and "Modus" represents the way different activities are executed.

Table 3. FOCUS, LOCUS, MODUS business model framework (adapted from Onetti et al. 2012)

	FOCUS	LOCUS	MODUS
Activity A	How to allocate resources to different activities? Where to invest resources? From where to invest?	Where to locate the different activities? Which countries? Which geographical areas?	Which activities to do in-house? Which ones to be outsourced? Which outsourced activities can be purchased and which implemented through partnerships?
Activity B			
Activity C			

The researchers are not proposing a new business model format or guidelines for business modelling, but highlight critical variables that are intertwined with internationalisation theories and should be considered in business model design. The main takeaway from Onetti et al.'s research in relation to education export cases is that emphasis must be put on the relevance of location decisions when designing a

business model for an organization or a particular case. These decisions can have a great impact on an organization's ability to "access resources, develop competences and create a network" and in effect boost profitability (Cortili & Menegotto 2010, 4).

McQuillan and Sharkey Scott (2015) analysed 144 internationalisation events of 10 professional service firms in order to understand how firms create and capture value when entering new markets. They emphasised that understanding how value is created and captured is critical when entering less familiar markets, especially in the case of service industry companies, where diversity is an integral feature of the company/customer experience. The researchers observed four different business model types that were adopted in the process of service firms' internationalisation. The summary of each business model type is presented in Table 4 below.

Table 4. Four different business model types identified in the process of service firms' internationalisation (summarized based on McQuillan & Sharkey Scott (2015) research results).

Multiple Local Business Model - "identifying market based international customer"	Global Business Model – "identifying global customers"
This tactic involves targeted reproduction of business model activities into a number of relevant host country or regional networks. Despite the fact that a company may enter these markets completely unknown, it might still be able to address customer needs as the 'first to market' in these markets or because they offer a more efficient solutions compared to competitors. It's been observed that companies adapting this business model increase their activities abroad in incremental stages by gradually increasing their resource commitment and possible even establishing in-country office.	This business model approach to internationalization is evident in the cases, when a company targets 'projects' or 'cases' rather than countries/locations and doesn't make much distinction between their local and international activities. The company could be located anywhere to deliver this service.
Niche Global Business Model– "identifying global customers within a specific industry sector"	Local to Global Business Model – "identifying initially domestic customers, and leapfrogging to regional or global customers thereafter"
In this approach the company gains expertise and internationalizes by providing specialized work or addressing the demand of niche industry. This model assumes gradual transition from local to global and assumes replication of locally or nationally provided specialized service to international customers.	This approach involves services that are outside 'core' activities of the company but through which the company can enter other markets. For example, designer firm doing design related teaching courses could be invited to teach internationally and through that network also expand their core activities to new markets.

McQuillan & Sharkey Scott (2015) observed that in their business model approaches to internationalisation firms replicated or innovated value and value capture activities in different markets, which led to a conclusion that internationalisation can be viewed as a cyclical process in which "the activities involved in value creation and capture are leveraged to support efficient and profitable growth in different markets". The researchers observed that the majority of the companies involved in the research had a tendency to adopt multiple business models and referred to it as a "business model portfolio" that combined primary and secondary business model approaches to internationalisation. (McQuillan & Sharkey Scott 2015.)

This view doesn't negate traditional internationalisation theories, especially since the research showed that many firms internationalised in incremental stages, however it adds a new perspective based on the business model approach and suggests that "internationalisation may require a portfolio of interrelated business models" that stimulates value creation and captures the activities that can be transferred to and upgraded as the firm expands internationally. (ibid.)

2.5 Theoretical framework – Business Model components

As highlighted in the "Business Model perspectives" chapter 2.4.1, business model innovation enables the development of new and unique concepts in delivering a company's value proposition to the customer segment. The challenge lies in defining what the process of business model development entails, as "without a framework for identifying opportunities it is difficult to be systematic about the process" (Girotra & Netessine 2014).

As a result of an extensive review of 70 business model definitions published between 1996 and 2009, Onetti et al. (2012) concluded that the most recurring components of business models (cited by over 50% of the authors) are: ''value proposition'', ''processes/activities/value chain'' and ''value network (partners/alliances)''. Osterwalder and Pigneur's (2010) Business Model Canvas includes all of these components and became the most established and widespread tool for developing and visualising business models (Golnam, Viswanathan, Moser, Ritala, & Wegmann 2014, 166).

The Business Model Canvas has been recommended in Finnish Higher Education Institutions' publications as a successful tool for the development of education export products and services, which reinforces the decision to use it as the main theoretical framework for the empirical study (Juntunen 2014; Juntunen 2016, 36; Auvinen, Juntunen, & Poikonen 2010). This choice is further supported by Chesbrough's (2010, 359) view, suggesting that the Business Model Canvas provides the opportunity for organisations to pro-actively simulate different business model possibilities before committing to real-world decisions. He also points out the benefit of representing the underlying processes of a business model in visual form, which can help to concretise theoretical considerations (ibid.). The Business Model Canvas building blocks are presented in Figure 4. Following that, each of the nine elements are described in more detail.
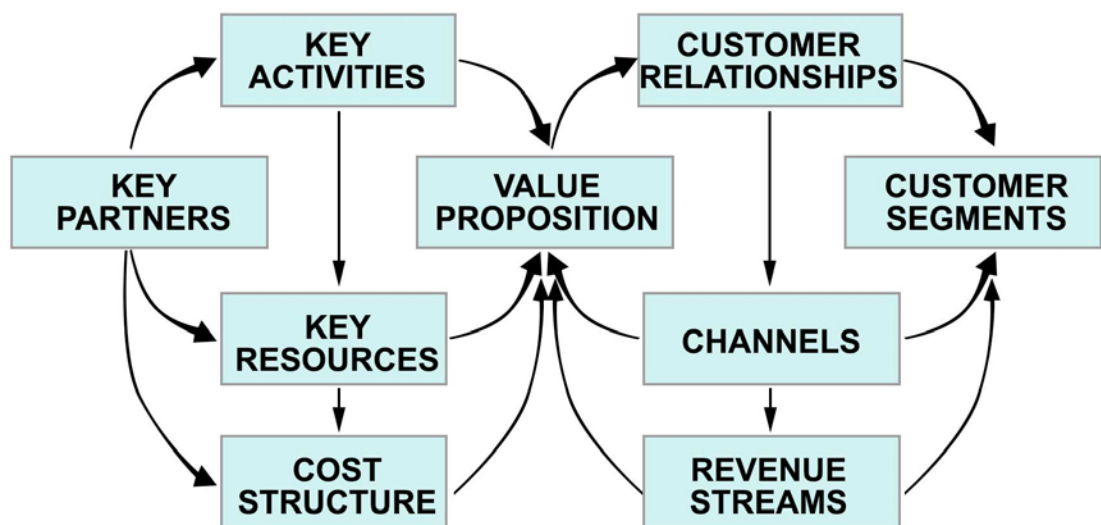
Figure 4. Osterwalder's and Pigneur's Business Model Canvas elements (adapted from Chesbrough 2010, 359)

Customer segments are at the heart of the business model and represent groups of people and organizations the firm aims to reach and wants to provide services for (Osterwalder & Pigneur 2010, 20). Customer segmentation can be defined as "dividing a market into distinct groups who might require separate products and/or marketing mixes" (Kotler, Bowen, & Makens 2005, 262). There are different types of

customer segments, such as mass market, niche market and multi-sided markets to mention a few (Osterwalder & Pigneur 2010, 21). Through intermarket (or cross-market) segmentation a company can target customers with similar needs even though they are located in different countries (Kotler, Armstrong, Harris, & Piercy 2013, 213). Once an organization makes a conscious decision about which segment to serve and which to ignore, a business model can be designed around a strong understanding of specific customer needs (Osterwalder & Pigneur 2010, 20).

Value proposition represents a distinct mix of elements within the product or service that address and satisfy customers' needs (Osterwalder & Pigneur 2010, 22). There are many typologies relevant to crafting a value proposition. However, according to Cespedes (2015) the key decision is whether the company competes on the basis of their cost structure or another basis that increases their customers' willingness-to-pay. Johnson et al. (2008, 54) point out that the most important attribute of a customer value proposition is its precision; in other words, how perfectly it gets the customer's job done. It is essential not to dilute the efforts and keep focus on one job (ibid., 54-56). In some recent studies the value proposition is viewed from a value-in-use perspective, where suppliers offer a value proposition that supports the customers' value creation process. In this view, value emerges rather than being delivered and the supplier company searchers for possibilities to understand and support the customers' value creation process. (Ojasalo & Ojasalo 2015, 311.)

The **Channels** building block of the Business Model Canvas represents methods of communicating and reaching the customer segment in order to deliver the value proposition. Channels can be categorized as marketing, sales or distribution and have five distinct phases: awareness, evaluation, purchase, delivery and after sales. The phases are presented in Table 5 on the next page. Finding the right mix of channels is crucial in delivering a value proposition to the customer segment and maximising company revenues. (Osterwalder & Pigneur 2010, 26-27.)

Table 5. Five Channel Phases (adapted from Osterwalder & Pigneur 2010, 27)

1. Awareness	2. Evaluation	3. Purchase	4. Delivery	5. After Sales
How do we raise awareness about our company's products & services?	How do we help customers evaluate our organisations's Value Proposition?	How do we allow customers to purchase specific products & services?	How do we deliver a Value Proposition to customers?	How do we provide post-purchase customer support?

The **Customer relationships** building block represents the characteristics of relationships between the company and a customer segment. Relationships can vary from personal to automated and may be driven by one or more of three motivators: customer acquisition, customer retention or boosting sales (Osterwalder & Pigneur 2010, 26-27). According to Peppers and Rogers (2004, 19) "relationships between customers and enterprises provide the framework for everything else connected to the customer-value business model". Osterwalder and Pigneur (2010, 29) distinguish several categories of customer relationships: personal assistance, self-service, automated service, communities and co-creation.

Customer engagement and co-creation have been increasingly used in connection with the customer relationships building block of the business model canvas, especially in the context of knowledge-intensive business services, such as education (Fernandes & Remelhe 2016; Dean, Griffin, & Kulczynski 2016, Díaz-Méndez & Gummesson 2012; Kukk & Leppiman 2016). This view follows the logic that the customer is an active participant of the value co-creation process and continuous engagement at various stages of the value chain can lead to new opportunities and improved value offering (Witell, Kristensson, Gustafsson, & Löfgren 2011, Vargo & Lusch 2004, 12).

Revenue streams represent a pricing mechanism or a combination of mechanisms that reflect what value customers are willing to pay for, and what ultimately generates the revenue. The scholars highlight that this building block represents the cash, rather than profit. Revenue streams need to be analysed in order to evaluate

whether the cost of providing the service is greater than the price the customer is willing to pay for it. Revenue streams can be divided into two categories: Transaction revenue, which results from a one-time payment for a service or product, or Recurring revenue, which results from on-going payments. (Osterwalder & Pigneur 2010, 30-31.)

Key resources represent physical, financial, intellectual or human resources that are necessary to deliver the value proposition to a customer segment. These resources can be found in-house, leased or acquired through partnerships. (Osterwalder & Pigneur 2010, 34-35.) It is essential to focus on key resources that are actually driving the business and the way those elements interact (Johnson et al. 2008, 53).

Key activities are the most important actions that are involved in executing the business model successfully and profitably. These activities are directly connected to the creation and delivery of the value proposition, reaching the markets, maintaining customer relations and earning revenues. The activities can be related to the "production" (i.e. designing, making and delivering a product in substantial qualities), "problem solving" (i.e. new solutions to solve specific customer problems) and "platform/networks" (i.e. networks, platforms, software). (Osterwalder & Pigneur 2010, 36-37.) Successful business models usually include key activities and processes on operational and managerial levels in order to deliver value that can be repeated and scaled (Johnson et al. 2008, 53).

The **Key partnerships** building block covers the essential partnerships and networks of suppliers needed to deliver value proposition profitably. Partnerships can be strategic alliances between non-competitors as well as competitors (coopetition), joint ventures to develop new businesses and buyer-supplier relationships to assure reliable suppliers. The main motivators behind partnerships are cost reduction, risk and uncertainty reduction and/or acquisition of particular resources and activities, such as niche skills, knowledge and customer access. (Osterwalder & Pigneur 2010, 38-39.) The rationale for a partnership can be defined by approaching each key activity and questioning how costs can be lowered or how top quality can be achieved through a partnership. In creating partnerships, it is also essential to make it transparent to the partner how the value will be captured in return; in other words

how this partnership would benefit the partner's business model (Doorneweert 2014).

Cost structure describes the most important costs that are involved in operating the business model. These costs are usually calculated after outlining the Key Resources, Key Activities and Key Partnerships. It is important to establish whether the business model is cost-driven, focusing on minimising costs wherever possible, or value-driven, focusing on value creation for the customer. (Osterwalder & Pigneur 2010, 40-41.)

Building a competitive and innovative business model requires an understanding of the organisation's environment. Continuous scanning of relevant external forces (e.g. industry forces, key trends, market forces and macro-economic forces) would enable an organisation to adapt the model to those changes (Osterwalder & Pigneur 2010, 200).

There are a number of techniques to design an innovative business model. The case in question (data centre training service) is from the service industry and according to service-dominant logic; value is always co-created with the customer (Vargo, Maglio, & Akaka 2008). Hence, this study adopts a customer perspective as a guiding principle for the business model design process (Osterwalder & Pigneur 2010, 128–129).

3 Methodology

This chapter demonstrates the progression through which methodological choices were made. It defines the research philosophy and presents justifications regarding the research strategy and approach. It contains the research context, data collection methods, means of data analysis and techniques used in verification of the results of the thesis.

The research onion, developed by Saunders, Lewis and Thornhill (2009) and presented in Figure 5 on the next page, describes the stages of the research process that the researcher undergoes in order to formulate an effective methodology.
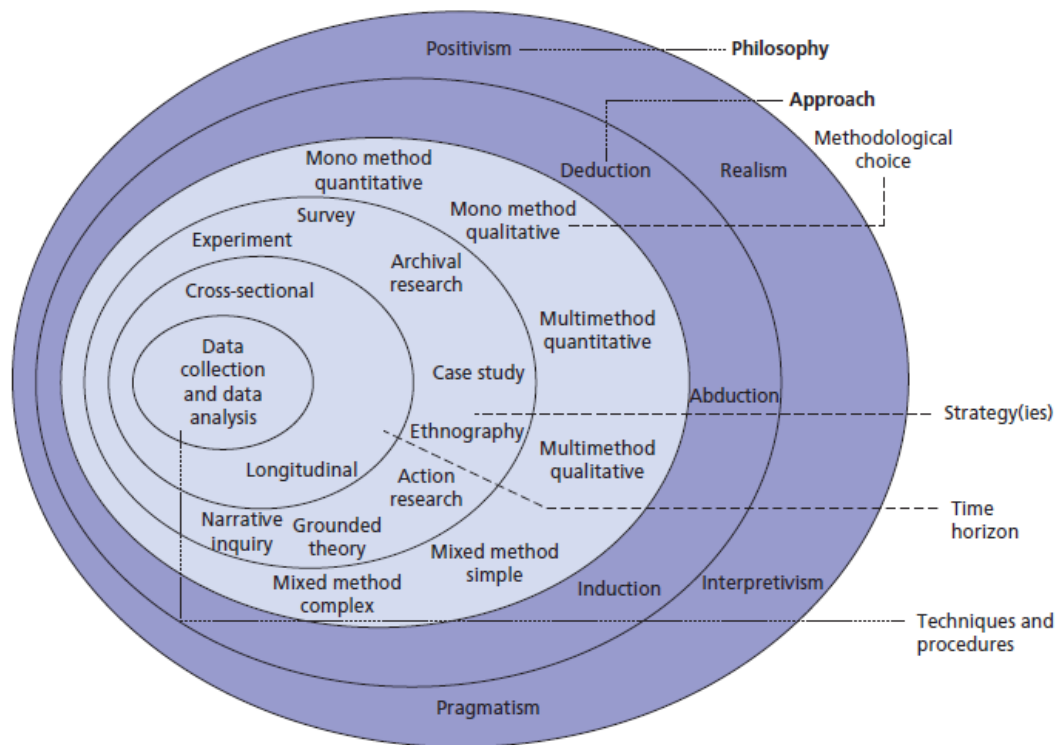
Figure 5. The research onion (Saunders et al. 2009, 108)

Firstly, the research philosophy is defined, which represents the researcher's own set of beliefs about the nature of reality and knowledge. The choice of philosophy influences how the research is conducted (i.e. the practical aspects) (Saunders et al. 2009, 108; Cameron et al. 2009, 54–60). Secondly, the research approach is chosen to reflect the type of research questions that were set (Saunders et al. 2009, 108). The selected research approach or design has a crucial influence on the choice of research methods as well as the research quality of the findings (Kananen 2013, 27). "A bird's eyeview of the different types of research" identifies the two basic approaches to the research: quantitative approach, based on the quantity or the amount, and qualitative approach, based on subjective assessment of behaviour, attitude, opinions etc. (Satyaprasad et al. 2010, 5-6.) Thirdly, the research strategy is chosen to reflect how the researcher intends to carry out the work in a systematic manner in order to answer the research question and objectives (Saunders et al. 2009).

According to Saunders et al. (2009, 155) independently from the chosen research strategy or method, there are two possible options in terms of time horizon (i.e. time

researcher to fully consider complex business situations without being tied by scientific rigour (Cameron et al. 2009, 57-60).

This choice of philosophy was made because the creation of a business model for a real life education service means that every decision has a variety of associated "knock-on" business implications. Therefore, the highlighted ideas, theories and decisions can't be considered in a purely theoretical manner. Each needs to be considered in relation to practical limitations and hence a pragmatic approach allows the researcher to consider attainable standards (as opposed to an idealist view). Pragmatism is especially relevant to the development of an educational service since it considers activity and individual differences to be key enablers to educational development (Kaloho 2015, 160).

3.2 Research Approach and Strategy

The nature of the research topic is highly practical and is aimed at the development of a process within an organisation. Therefore, the researcher adopted a design research strategy. Design research combines different research methods in order to produce functional and practical solutions (Kananen 2013, 20). This strategy enables the researcher to choose a number of methods from quantitative and qualitative research methodologies in accordance with the situation or an objective for development (ibid.). Unlike traditional research that starts from the fact that the researcher and a phenomenon subjected to research must be kept apart, in design research the researcher has a central role in organising change (ibid., 29). The choice of research strategy is further supported by the fact that design research is based on a pragmatic approach, which is in line with the researcher's chosen research psychology (Aken 2004).

According to Faste and Faste (2012) there has been a lot of interest in design research in the past decade, which is increasingly used "to describe a myriad of possible approaches, perspectives, philosophies and methods". Design research can be defined as process oriented, multidimensional, cyclic and complex, involving a level of cooperation (Eisenschmidt & Niglas 2014, 224).

Figure 6 demonstrates definitions of the main phases of design research identified by Eisenschmidt and Niglas (2014) based on the several models proposed in the academic literature:
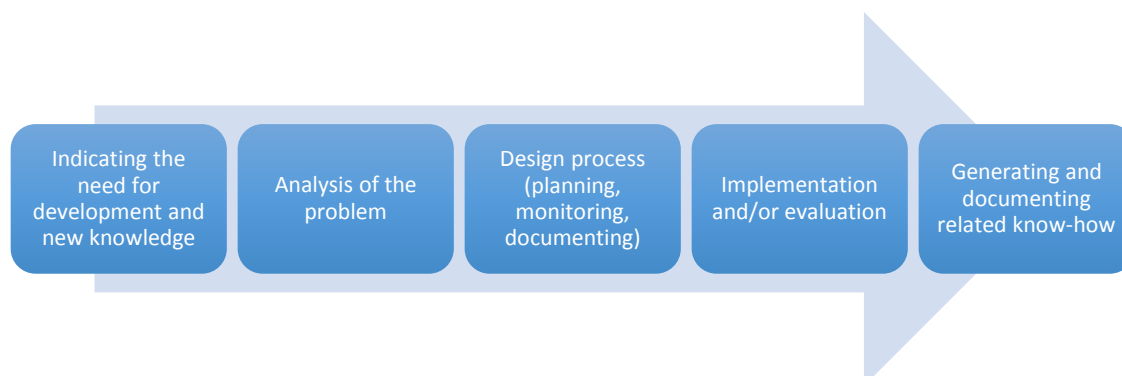
Figure 6. Main phases of the design research cycle (adapted based on Eisenschmidt & Niglas 2014, 224)

Design research strategy strongly emphasises the innovation and flexible approach in integrating the benefits of "learning from experience" and doesn't purely aim to produce "artefacts". Rather than choosing the solution and then testing it, this approach is "designed especially for given circumstances in the continuous cyclical process supported by analysis and research" (ibid.). In choosing this approach for this thesis, the researcher's ambition is to ensure the continuity of the development process and to facilitate useful networks and collaboration opportunities that also support the principles of the network theory of internationalisation.

Since design research is not its own methodology, the researcher utilised qualitative research methods in order to answer the research question. Qualitative research aims to describe and understand the phenomenon in-depth without generalising the results (Kananen 2013, 31-32). Since the design research has an iterative, multileveled, collaborative nature, qualitative research methods allow flexibility in analysing material in a cyclical process (Shavelson, Phillips, Towne, & Feuer 2003; Kananen 2013, 32). This choice is further supported by a number of academic articles that the researcher studied, where business model design process was studied and analysed utilising qualitative research methods (Eurich, Weiblen, & Breitenmoser 2014, 330-348; Rauter, Jonker, & Baumgartner 2017, 144-154; Kulins, Leonardy, & Weber 2016, 1437-1441).

In terms of the relationship between theory and practice, this study follows abductive reasoning, where the researcher oscillates between theory, empirical data and analysis (Dubois & Gadde 2002). Abductive reasoning goes in line with the chosen strategy (design research) and a pragmatic perspective. Figure 7 demonstrates the differences between inductive (research that starts from practice) and deductive methods (research that starts from theory) and how abductive reasoning combines elements of these two methods to better understand the possibilities and allow the researcher to think beyond what already exists (Jokhio & Chalmers 2015).
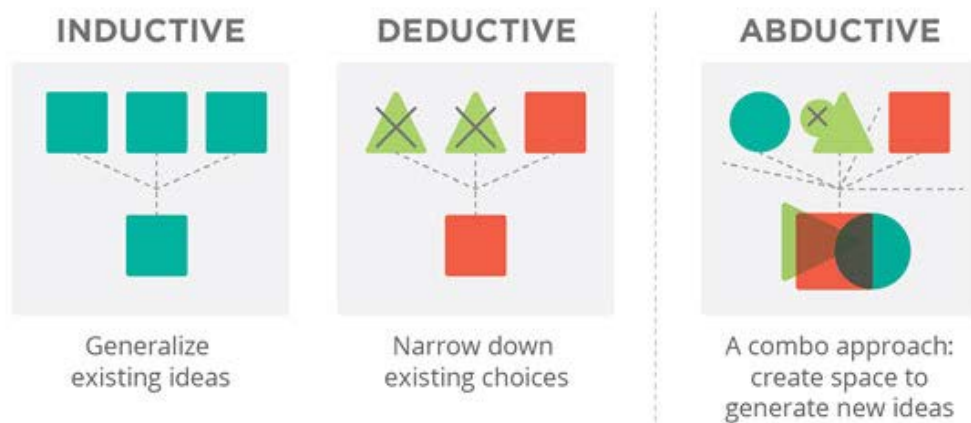
Figure 7. Inductive, deductive and abductive methods of reasoning (Jokhio & Chalmers 2015)

3.3 Research context

This chapter presents the research context by firstly introducing the skills gap identified in the data centre industry. Secondly the chapter describes a Finnish corporate training service initially implemented by a consortium, whose key members were Kajaani University of Applied Sciences (KAMK), Adult and Continuing Education AIKOPA and the DIGITICE Finland cluster (Kainuun Etu Ltd). Thirdly, stakeholders involved at different stages of this research are presented.

3.3.1   The skills gap in the data centre industry

This research stems from the European data centre industry, which is recognised to be growing significantly year upon year in line with a global appetite for digital services that generates large volumes of both personal and business related data (Boyle 2014). Cloud computing is now a household term and is generally recognised to mean a digital service that is provided from a remote location via an internet connection, rather than existing at the user's own location. Personal cloud computing services such as iCloud, Dropbox and YouTube demonstrate a few examples of consumer services that have spearheaded an exponential increase in the creation of new non-mission critical data that has driven data centre industry changes globally.

Demands upon data centres are changing due to such developments as increased cloud computing demands, the Internet of Things (IoT), convergence, virtualisation and mobility. Staffing and training priorities in turn are changing due to resulting modern technology configurations and a reliance on external services. Companies that run mega data centres, which include technology giants such as Amazon, Google and Microsoft, are increasingly building more data centres to satisfy increased demand. According to Karsten Scherer (2017) of TEKsystems, who was interviewed by data centre Knowledge for the article, "Data Centres Scrambling to Fill IT Skills Gap", these mega data centres are competing with traditional data centres for a limited pool of talent that is already being adversely affected by an aging workforce and a pattern of younger professionals wishing to work in other locations. (Riccio 2017.)

In terms of technological changes, data centre managers now have to deal with a mix of assets that are on-site and services that are sourced from other vendors due to an increase in hybrid environments. Greg Schulz from StorageIO Group was also interviewed for the same Data Centre Knowledge article, where he is quoted as urging data centre managers to develop broader skills sets amongst their staff. This is because, in his opinion, data centre staff will increasingly be required to have a broad range of skills. This necessitates that data centre mangers should already be training their staff in duties that are outside their current roles. (ibid.)

3.3.2 Data Centre Training

To meet the increasing demand for eco-efficient data centre services and to address a skills gap within the industry, a pilot training course known as the "Eco-efficient data centre training course" was planned in 2013 by Kajaani University of Applied Sciences (KAMK), Adult and Continuing Education AIKOPA and DIGITICE Finland cluster (Kainuun Etu Ltd). The course was operated in Kajaani, Finland between February 2014 and March 2015 in Finnish language and was taught by Finland-based industry experts from across different fields within the data centre industry. Training included virtual studies (e-learning), and 15 contact teaching days with company and data centre visits. In total 19 participants from across Finland completed the training. 30 ECTS credits were awarded to each successful participant, which could be credited towards a relevant Master's degree.

Approximately 90% of the course funding was sourced from public channels including Kainuu Centre for Economic Development, Transport and the Environment (European Social Fund), Kainuun Etu Ltd and Kajaani University of Applied Sciences (KAMK). Private companies, including EMC, Granlund, Rittal, Coromatic, Eaton Power and Herman IT, who deemed the course to be worthy of investment, provided the remaining funding. Kaisanet, Herman IT, Hewlett Packard and Schneider Electric provided additional support, in terms of teaching resources.

Since no similar training was found within Europe there was no example to base this course upon, and therefore the content and teaching methodology were discussed and agreed upon by the consortium running the training course, with input from the supporting companies and organisations. The course was recognised internationally as being unique and important to the data centre industry, which resulted in its nomination in the 7th International Data Centre and Cloud Awards 2014 in the category: "Best Contribution to Education for the Data Centre Industry" (Aikopa 2014).

3.3.3 Research Stakeholders

The research process started with identifying all the relevant stakeholders and their roles in the research process and in answering the main research question. According

to Cameron & Price (2009, 101–129) identifying all stakeholders, analysing their roles in the research process and possible conflicting interests is crucial right from the start of the research. These academics highlight that stakeholders can be categorised into "direct" and "indirect" stakeholders. Direct stakeholders have personal contact with the researcher (e.g. management, interviewees). Indirect stakeholders are mediated through a direct stakeholder. They are not directly involved with the researcher but have a vested interest in the topic of the research. (ibid.)

Identifying key stakeholders in this thesis and their roles was done through a mind mapping technique (Buzan 2005). Figure 8 demonstrates the main stakeholders involved in different stages of this research. Analysing each main stakeholder's role in the research process also helped with identifying the right experts for the empirical data gathering and choosing the appropriate approach in engaging with those stakeholders. Not all identified stakeholders presented in Figure 8 were deemed to be suitable interview targets, but were engaged with during the research and relevant information was captured in the research diary. The mind map was revised and adjusted several times through the research as the researcher went back and forward between the empirical data and literature review, in line with abductive reasoning and design research strategy dynamics.
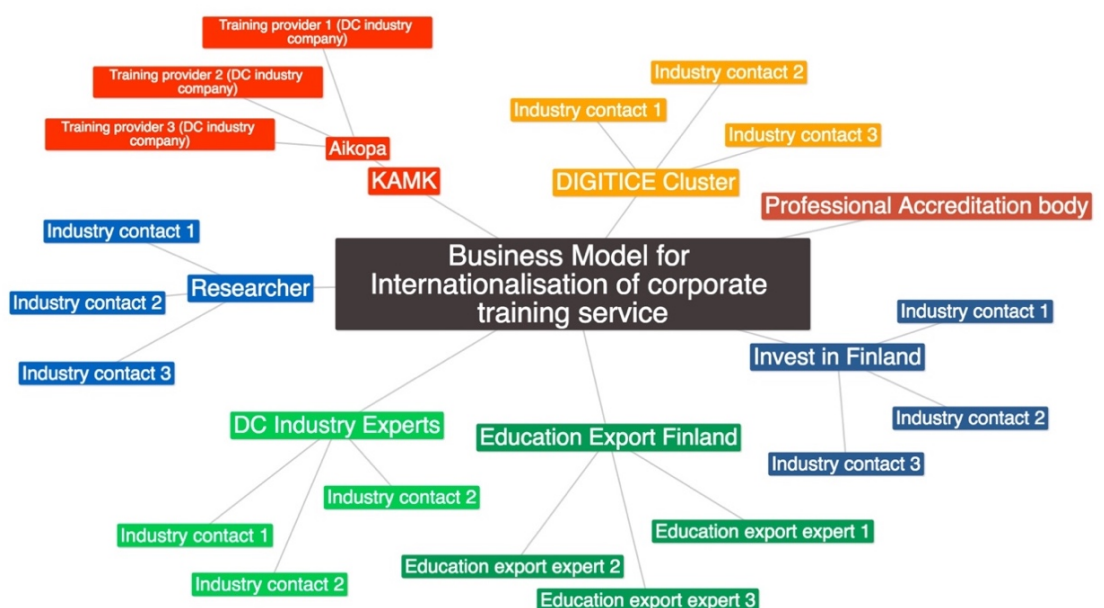
Figure 8. Mind map of main stakeholders involved in different stages of the research process.

3.4 Data Collection

Secondary data was collected from a wide range of literature with focus on the key concepts. The literature review mostly includes peer-reviewed journal articles from Ebsco (Academic and Business Search Elite), ResearchGate, Google Scholar and ScienceDirect online research databases. Additionally, articles from respected publications (e.g. Harvard Business Review, Ministry of Education and Culture) and Higher Education Institutions' publications were included, reflecting views based on experiences and observations. The researcher aimed to include articles written in recent years that provided the most up-to-date thinking.

Data collection methods depend on the methodological approach used by the researcher as well as the accuracy and authenticity of the information required (Bryman & Bell 2007, Kananen 2013, 103). Design research as a strategy enables the usage of mixed methods at different stages of the research that are identified as the most appropriate to gather data towards answering the research question (Kananen 2013, 20). Qualitative research methods in data collection were utilised in the empirical part of this thesis in order to get an in-depth understanding of the research phenomenon as well as identify new possible topic areas that were not initially considered. Qualitative data collection techniques are not purely mechanical (e.g. observing, writing, counting, and transcribing); they also include the researcher's cognitive and affective processes (e.g. inferring, intuiting, empathising and evaluation) that can be documented (Saldana & Leavy 2011, 32).

3.4.1 Observation

Participative observation that began in June 2014 was the starting point of the research and was implemented throughout the study. This method of qualitative data collection was chosen in order to learn about certain aspects of the corporate training in question and the industry, assess the progress of the process and pick up on the "silent data" that cannot be obtained through other methods of data gathering (Kananen 2013, 105). Being an employee of KAMK, the researcher was able to get familiar with a lot of documentation related to the context of the study, participate in relevant meetings and have continuous discussions related to the

subject of this study (from the industry point of view and education export point of view). Saunders et al. (2009, 292) highlighted Brannick and Coghlan's (2007) argument that "insider researchers" derive benefits from pre-understanding of the context and their experience. They are able to easily participate in discussions, observe, follow up and obtain richer data. This also goes in line with the characteristic of design research where the researcher has a central role in organising a change (Kananen 2013, 29).

Observation was also performed through capturing "weak signals" (media, articles, events, social media, online forums) relevant to the context of the study. The researcher kept an informal research diary that helped in understanding industry demands in terms of competences and detecting emerging opportunities relevant to the internationalisation of data centre training.

Due to their busy schedules, several interviewees were not able to participate in a full interview, but agreed to short phone calls. Limited conversation times did not allow the researcher to address all planned questions, therefore the information gathered during these brief conversations was added to the informal diary as an additional contribution to the data collection.

Overall the observation was conducted in an unstructured manner while the researcher wrote down as much relevant information as possible, without having a prepared list of things to be observed. The observed data was analysed on a frequent basis and helped to get a better understanding of the phenomenon and direct the study towards achieving the main objective (Kananen 2013, 107-108).

3.4.2   In-depth interviews

Interviews can produce rich and illuminating data and allow a degree of flexibility depending on the chosen interview approach (Cameron & Price 2009, 252–253). The researcher decided to apply a semi-structured interview format as it provided the opportunity for respondents to reflect on the issues and opportunities outside the scope of the interview guide, while following a structure to ensure comparability of cross-examination of all responses (Bryman & Bell 2007).

In order to gather relevant data from the interviews, it was necessary to choose themes that would guide the interview process. Kananen (2013, 114) considers a theme to be "an extensive aggregation of subject matter" and a theme interview to consist of a series of questions by an interviewer, asked in order to prompt the interviewee to divulge required information. In such an interview, answers given by the interviewee may generate additional questions by the interviewer within the given theme.

Each of the 9 Business Model Canvas elements was considered to be a key theme for the interviews and, using the findings of the literature review section and referencing the thesis context, the researcher created several questions for each theme. Initially, a list of 65 questions was created that related to the 9 themes. The researcher then refined this to 24 prompting questions that would best provoke valuable information and further ad-hoc questions. In practice these questions were used to initiate discussion within each theme and additional questions were asked in response to the information received. Table 6 demonstrates an example of a theme interview logic from one of the interviews conducted with "Industry expert 1".

Table 6. Example of a theme interview logic with "Industry expert 1" (adapted from Kananen 2013, 114)

Theme Questions	Answers
Theme 2: Value Proposition Leading question: Is there a skills gap in the DC Industry?	Answer: Yes, definitely.
Clarifying question: What factors are responsible for this skills gap?	Answer: One issue is that many of the current DC experts have fallen into the industry somewhat by accident and now they are retiring.
Clarifying question: Are there enough skilled workers to fill those roles?	Answer: No. The data centre industry is growing so fast that there aren't enough fresh graduates, and those graduates don't have hands-on experience.
Clarifying question: How important is hands-on experience to the data centre operators?	Answer: It's critical. They are losing people with years of experience so the more hands-on training the new staff have the more valuable they will be.

Each question was categorised as being relevant to one or more categories of interview target, identified utilising the stakeholder mind map (Figure 8) mentioned in sub-chapter 3.3.3 "Research Stakeholders". A list of 24 prompting questions in accordance with the stakeholder group is presented in Appendix 1. The main interview targets were:

- Data centre Industry Experts – Those high profile industry professionals with an excellent holistic view of the European data centre industry.

- Data centre Industry Contacts – Those individuals working within the data centre operations sector who would be prospective customers of the training service.

- KAMK Consortium – The original founding group of the first domestic training service, including the DIGITICE Finland cluster, Adult and Continuing Education AIKOPA and CSC – IT Center for Science (streering group member).

The interview invitation included an interview guide with information on the research purpose, a description of the existing data centre training and a visual representation of the targeted competences (Appendix 2). The invitation also included a list of themes and questions that were planned to be included in the interview in order to allow each interviewee to prepare for the interview in advance and hence improve the quality of the answers. In order to minimise potential sources of errors and bias during the actual interview, the researcher implemented appropriate questioning techniques, such as funnelling questions, clarifying issues and probing (Adams, Raeside, & Khan 2014, 148–149).

Utilising the researcher's own industry network, semi-structured interviews were first conducted with data centre industry experts who have a holistic view of the European data centre industry and any gaps in skills. The total number of interviews was 5 and the interviews lasted from 48 minutes to 1 hour and 10 minutes. The answers were analysed prior to the second phase of the interviews with prospective customers.

Secondly, the researcher conducted semi-structured interviews with prospective customers in the UK, Hungary, Netherlands, Germany, Sweden and Estonia. The total

number of interviews was 6 and the interviews lasted from 45 minutes to 1 hour and 5 minutes. Contact information for relevant contacts at a managerial level was obtained during the interviews with industry experts and through the Invest in Finland (Finpro) team, using a technique known as a snowball sampling (Cameron & Price 2009, 229). Over 100 companies relevant to the data centre industry were contacted with requests for interviews. The companies were located in different parts of Europe with the majority located in the UK.

Thirdly, semi-structured interviews were conducted with the original training provider consortium (AIKOPA, Digitice Finland cluster and one of the steering group members, CSC – IT Center for Sciences). The interviews lasted from 45 minutes to 1 hour and 30 minutes.

All interviews were conducted by phone, Skype and Google Hangouts due to the remoteness of the interviewees (geographic coverage), with the exception of the original training provider consortium, which were conducted face-to-face. The interviews were recorded and transcribed within 24 hours after the interview. In addition to the recording, the researcher made notes to make sure that the majority of the data was captured in case of any technical failure of the recordings.

Data protection and confidentiality was discussed with each interviewee, where it was agreed that contact information will be handled with care and will only be used by the researcher in connection with this study. At the start of each interview it was agreed that names of the interviewees would not be disclosed in this thesis. Table 7 on the next page presents each interviewee's position, location (country), and the length and date of the interview.

Table 7. Interviewees and interviews duration

Stakeholder	Position	Location	Duration	Date
Industry expert 1	Managing Director	UK	50 min	19.02.2017
Industry expert 2	EMEA Marketing Chair	Belgium	58 min	15.02.2017
Industry expert 3	Director	UK	48 min	10.02.2017
Industry expert 4	Global Director Cloud & Colo Investor Relations	UK	1hr 10 min	20.02.2017
Industry expert 5	CTO	Netherlands	55 min	22.02.2017
Prospective Customer 1	Operations Director	Netherlands	45 min	27.02.2017
Prospective Customer 2	Technical Director	Hungary	58 min	03.03.2017
Prospective Customer 3	Country Manager	Estonia	57 min	09.03.2017
Prospective Customer 4	CEO	Sweden	49 min	15.03.2017
Prospective Customer 5	COO	UK	53 min	15.03.2017
Prospective Customer 6	Operations Manager	Germany	1hr 05 min	20.03.2017
Original Consortium 1	Project Manager	Finland	1hr 20 min	17.03.2017
Original Consortium 2	CEO	Finland	1hr 30 min	20.03.2017
Original Consortium 3	Development Manager	Finland	45 min	22.03.2017

The number of interviews wasn't set in advance as there are no rules for sample size in qualitative studies. Patton (2002, 244-245) highlighted that the most important aspects of gathering valid, meaningful and insightful data through a qualitative study are the richness of the information and the abilities of the researcher to observe and analyse the data. By using a variety of different sources and data collection methods, the researcher was able to minimize the weaknesses of any single approach and build on the strength of each data collection method (Patton 2002, 307). According to Tashakkori and Reddlie (1998) this type of triangulated approach to fieldwork is based on pragmatism.

3.5   Data Analysis

Analysis of qualitative research can be quite challenging due to the vast amount of data gathered in focus groups, in-depth interviews, observations and so on (Adams et al. 2014, 152). A content analysis approach was chosen because it is deemed to be more relevant in small-scale business research projects than alternative approaches to analysis. It was also an appropriate method in this case because the use of content analysis reduces the selectivity of interpretation that is often the inadvertent result of researcher bias. (Cameron & Price 2009, 427-428.)

The core method of data analysis that this approach is built on is the identification of key themes and the subsequent drawing of conclusions from the frequency and nature of the identified themes in the gathered data (ibid., 428). It was decided that computer software should not be utilised to count the frequency of key words and phrases in the data because, whilst this would ensure a level of objectivity, it would not allow for interpretation that the researcher deemed as necessary.

Each interview was recorded and subsequently transcribed by the researcher verbatim, which is the most accurate level of transcription. Before analysis takes place is it difficult to predict what data will be finally needed. Since qualitative analysis and the associated collection of data is a cyclical process that continues throughout the research process it was deemed to be of critical importance that all information from the interviews be recorded in this manner. (Kananen 2013, 121.)

Next, each transcribed interview was segmented into individual, independent issue aggregations as per Stage 2 of Kananen's (2013, 122) stages of processing material (see Figure 9).
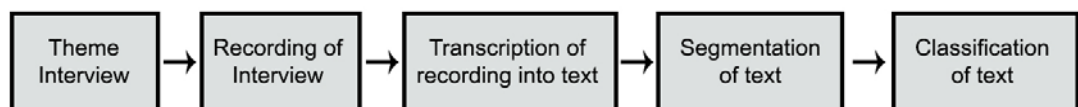
Figure 9. Stages of processing material (Kananen 2013, 122)

The segmented text was then converted into a tabular format, with the text segments forming a column, and an additional coding column was added. In order to establish core issues or phenomenon, the material condensation technique was used to condense each text segment to a short, relevant statement in the code column. By condensing and coding the data in this manner for each transcribed interview the researcher is able to see broader aggregations across the material. (Kananen 2013, 124.)

Using the previously identified 9 themes that correlate to the Business Model Canvas elements, each text segment was then matched to one or more of the themes in an

additional column, providing an additional level of coding. Hsieh and Shannon (2005, 1281) identified this approach of content analysis as a directed approach where, using existing theory, the researcher indentifies key concepts or variables as initial coding categories. Table 8 shows an example of some of the information transcribed from data centre "Industry expert number 1", which was segmented, coded and matched to the relevant themes.

Table 8. Example of how transcribed information was segmented and coded

Segment	Code	Theme
One of the best ways to market the service to people who need it would be to arrange contract deals with some of the data centre recruitment agencies, so when someone goes for a job but doesn't get it, the agency can tell them "hey, bad luck. It might be worth doing this training course by the way so you'll have a better chance with the next job".	Data Centre Recruitment agencies marketing	Channels
With the way that data centres are changing there's a lot of demand for IT skills now, especially with the likes of SDDC (Software Defined Data Centre).	IT skills learning content	Value Proposition
Most of the older guys are on the facilities side and they're the ones who are retiring. They come from all kinds of backgrounds, like mechanical engineering and everything. Even submarines. But most of the new guys coming in don't have anything like that kind of experience. They need experience in a test lab, or in real environments. That's why it's so important that your training has real, hands-on teaching. Not just theoretical stuff by distance learning.	Hands-on learning content	Value Proposition

To gain an understanding into the frequency of the codes and themes identified, a table was created in Microsoft Excel, listing each unique code and its associated theme. The frequency of occurrence of each code was recorded in a column by counting the number of citations across the transcribed and segmented interview tables. Example of table recording code frequency is presented in the Table 9 on the next page.

Table 9. Example of table recording code frequency

Code	Theme	Number of Citations
Skills gap in DC Industry	Value Proposition	10
ECTS Credits	Value Proposition	5
English	Value Proposition	4
Recruitment Specialists	Channels	3
LinkedIn Groups	Channels	7
Europe	Customer Segments	6
IT Training	Value Proposition	5
Laboratory	Value Proposition	6

Finally, the data was grouped according to Theme and reordered with the codes that occurred most frequently at the top, sorted highest to lowest. Table 10 demonstrates Value Proposition example of grouped and sorted data. Those codes that were cited most often were interpreted to be the most important data when forming the final Business Model Canvas framework. The full table of coded and themed data is included as Appendix 3.

Table 10. Value Proposition example of grouped and sorted data

Theme	Code	Number of Citations
Value Proposition	Skills gap in DC Industry	10
Value Proposition	Laboratory	6
Value Proposition	IT Training	5
Value Proposition	ECTS Credits	5
Value Proposition	English	4
Value Proposition	Facilities Training	4
Value Proposition	Sustainability Training	4
Value Proposition	Business Training	4
Value Proposition	Efficiency Training	3
Value Proposition	Industry Experts	1

3.6   Verification of Findings

To influence either the practice or the theory of a relevant field, the research must be conducted thoroughly and needs to present insights and conclusions that are relevant, valid, reliable and representative (Merriam 2016, 238; Cameron & Price

2009, 238). Due to the fact that design research does not have its own methods, credibility must be critically evaluated using the validity and reliability criteria of the qualitative or quantitative research (Kananen 2013, 25). Validity in qualitative research refers to the degree to which the findings are interpreted in the correct way, whereas reliability represents consistency of the results (Patton 2002, 94; Kananen 2013, 189). Credibility issues were taken into consideration right from the start of the research and managed in accordance with each stage of the process in order to ensure the quality of the research (Kananen 2013, 189).

There are four tests of credibility that are commonly used: internal validity, external validity, reliability and objectivity (Quinton & Smallbone 2006, 126). However, some academics consider these measures to be more suited to quantitative research (Tuomi & Sarajärvi 2009, 137). Lincoln and Guba (1985) developed competency criteria for ensuring the trustworthiness of qualitative research, specifically: **credibility**, **transferability**, **dependability** and **confirmability**. This research adopted a series of techniques in accordance with Lincoln's and Guba's (1985) four competency criteria to ensure credibility of the study.

Credibility criteria acts as a substitute for the conventional internal validity and has two main tasks: first, to carry out the enquiry in such a way as to increase the likelihood of the results being credible, and second, to demonstrate credibility through approval by the constructors of the studied realities (Lincoln & Guba 1985, 296). To establish credibility of this study the researcher used techniques of prolonged engagement, persistent observation, triangulation, peer debriefing and member checking (ibid., 219).

Prolonged engagement and persistent observation were achieved by spending sufficient time in the "field" of research in order to learn the context, minimise distortions and build trust (Lincoln & Guba 1985, 307). The researcher also got familiar with the context of the study by studying relevant documentation in advance. Continuous dialogue with the main stakeholders of the study aided the development of rapport and trust that supported co-construction of meaning between the researcher and the stakeholders of the study.

By incorporating multiple research tools (triangulation) in answering the same research questions, the researcher was able to facilitate deeper understanding and provide a stronger body of evidence, as well as reinforcing the findings (Patton 1999). Theory triangulation was used in applying multiple theoretical perspectives (e.g. internationalisation and business model theories) to examine and interpret the data (ibid.).

In order to minimise bias caused by the researcher's own assumptions, potentially caused by deep and continuous involvement with the context of the research, peer debriefing was utilised throughout the study (Lincoln & Guba 1981, 308). At different stages of the research the researcher met with impartial colleagues in order to critically review the methods used in the study and the evolution of data analysis (Spillett 2003). Informal member checks were conducted with some of the stakeholders of the research, where the researcher tested interpretations of the semi-structured interviews in order to establish credibility of the conclusions (Lincoln & Guba 1985, 314). At the end of the study a "formal member check" was organised with one of the members of the original consortium in order to discuss the conclusions and reinforce the credibility of the final outcome (Lincoln & Guba 1985, 315).

Transferability criteria act as a substitute for the conventional external validity and indicate the extent to which the findings of the study are applicable in other context or with other interviewees (Lincoln & Guba 1985, 219; Kananen 2013, 191). Since the objective of this study is to identify a suitable business model within a specific context, empirical data cannot be directly transferred to other contexts. Nonetheless, transferability of the research was increased by describing the context and the process of achieving the research objective in sufficient detail. This technique of "thick description" enables readers to evaluate the extent to which the conclusions drawn are transferable to similar education export cases (Holloway 1997).

Dependability corresponds with reliability and refers to demonstrating that the findings are consistent and can be repeated (Lincoln & Guba 1985, 219; Kananen 2013, 189). Rigorous documentation was a cornerstone in ensuring dependability of

this study. Moreover, describing the research design and its implementation, including operational details of data gathering and reflective assessment of the research process enables the reader to develop a thorough understanding of methods and their effectiveness, hence addressing the dependability of the study (Shenton 2004, 71).

Lastly, **confirmability** criteria is used in preference to objectivity and represents the steps the researcher has taken to demonstrate that conclusions emerge from the obtained data, rather than her own predispositions (Lincoln & Guba 1985, 299). Since the researcher is closely related to the context of the study by being an "insider", it was especially important to continuously reflect on the findings and chosen approaches by justifying decisions made and methods adopted as well as openly recognising the shortcomings (Shenton 2004, 72). Triangulation methods (various sources and various data collection methods) as well as a detailed description of the research process further supported confirmability of this study.

4 Results

The research question seeks to create a business model for the internationalisation of a corporate training service. This chapter presents the results derived from the data gathered in the empirical study, the purpose of which was to find information that will allow the researcher to create a business model using the theoretical framework, the Business Model Canvas. The data was analysed using coding and themes in order to align the results with the building blocks of the Business Model Canvas. The results are therefore presented accordingly under the relevant Business Model Canvas elements (themes) of Customer Segments, Value Proposition, Channels, Customer Relationships, Revenue Streams, Key Resources and Key Partners. The Key Activities and Cost Structure elements were not completed directly from the coded data resulting from the interviews, since those elements must be determined from the results of the data gathered within the other 7 elements. Second sub-chapter presents a process of creating a final business model that is based on the collated data from the data analysis and the research diary.

Since the data is qualitative in nature, sourced from multiple interviews, the results cannot be represented in numerical form. However, the frequency of occurrence of each code was recorded in order to gain insight into the issues that were raised most often during the interviews. In order to communicate the results visually, the researcher created bar charts for each Business Model Canvas element (theme). The codes pertaining to each theme are represented in visual form, with the size of each bar corresponding to the frequency of occurrence of the relevant code.

4.1 Customer Segments

In the data analysis 13 codes were identified that should be considered when developing the Customer Segments element of the Business Model Canvas. Figure 10 represents the relevant identified codes and frequency of occurrence.
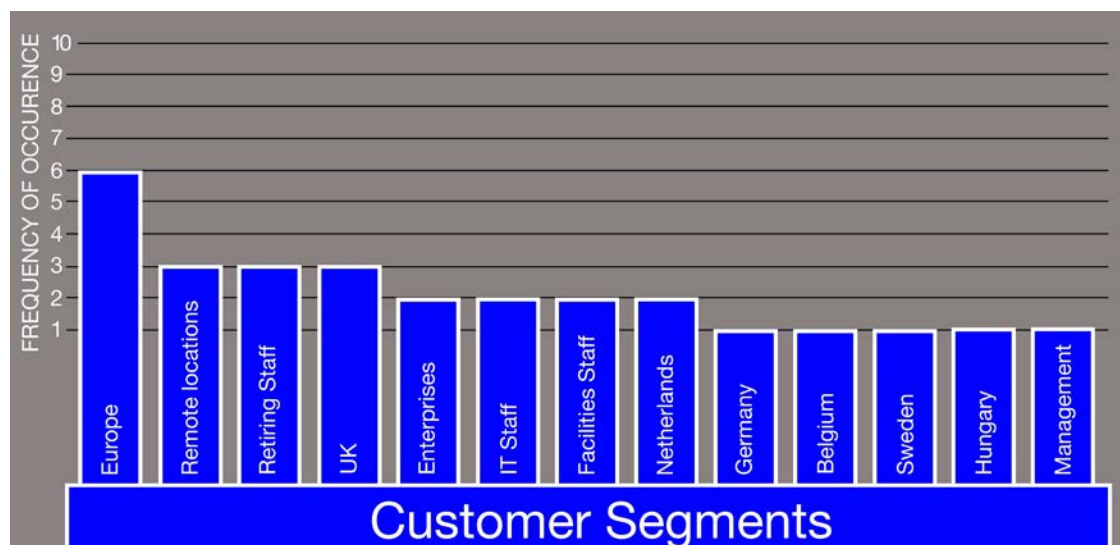
Figure 10. Customer Segments Data Results

Industry Expert 3 said, "In the UK there is a need for data centre professionals who understand the full ecosystem of data centre operations". The issue is also highlighted as being relevant in other European countries, as raised by Industry Expert 2, who said, "In the Belgian market it is predicted that by 2020 there will be 1 candidate for each open IT position." The data shows that multiple locations have

been identified as having demand for the training service, including the UK, the Netherlands, Germany, Belgium, Sweden and Hungary.

These locations represent individual responses from the interviewees, but Europe was also identified in wider terms by a large number of the same interviewees as being a relevant market.

> *It is a recognised problem in Europe. Everyone in the industry knows that there is a problem, not just in terms of the skills gap but also in terms of the age of the people who are currently running data centre operations. (Industry Expert 3)*

This comment also highlighted the issue raised by several interviewees that many data centre staff are now retiring, but not enough suitable new employees are available to fill the roles. Furthermore, remote locations are identified as being suitable target markets because talented staff are often lured away by offers from companies in metropolitan areas. Therefore, there is demand in those remote data centre locations to train local personnel to fill available roles.

Several interviewees suggested that enterprise companies with data centre facilities are potential customers of this training service. Industry Expert 1 described how enterprise companies' facilities divisions often inherit data centre facilities as part of company mergers and acquisitions. In these cases the facilities staff often require a greater big-picture understanding of data centre operations because the new facilities differ greatly from those the enterprise already operates.

New and existing IT staff and Facilities staff are highlighted as valid target customer groups for this wide-scope training service. Industry Expert 3 said, "Engineering and IT graduates who can get this syllabus under their belt would be great for the industry because data centre professionals in their 20s are in high demand". Industry Expert 2 commented that, "Data centre chiefs, all IT personnel and staff who need awareness of ICT, which is about everybody" need such training. The mention of "data centre chiefs" raises the point that the training would be appropriate for data centre management staff, which is backed up by a comment from Prospective Customer 1; "The training that you are offering I would recommend to some people who are opting for management roles within the company".

4.2 Value Proposition

10 codes were identified that should be considered when developing the Value Proposition element of the Business Model Canvas. Figure 11 represents the relevant identified codes and frequency of occurrence.
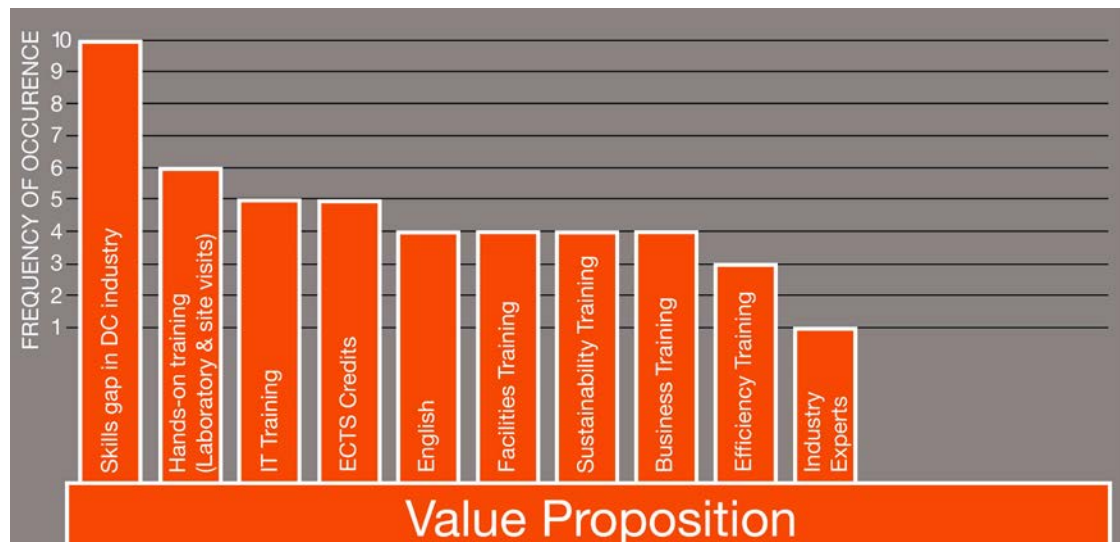
Figure 11. Value Proposition Data Results

The existence of a skills gap in the data centre industry was universally confirmed by the interviewees, giving a very strong indication that a Value Proposition should be developed to address this opportunity in the market.

> A "knowledge gap" has always existed between IT and facilities management professionals within the data centre industry, because the two fields have remained somewhat separate. To avoid risk the IT department may be inclined to over-provision and under-utilise the systems in order to be sure that the required computing power is available. To compensate for the over-provisioning of the systems, the Facilities team must maintain a high level of power and cooling to the data centre. (Consortium Member 3)

The demand for a suitable training service is reinforced by several interviewees, including Prospective Customer 1 who said, "It's an excellent idea to have an education programme for people to become fully equipped data centre specialists."

Another key point raised was a need for practical training in a laboratory environment. Industry Expert 1 said, "Most of the new guys coming in don't have anything like that kind of experience. They need experience in a test lab, or in real environments. That's why it's so important that your training has real, hands-on teaching." This view is reinforced by others, including Prospective Customer 3 who said, "There is a need to have a place where students can learn things in practice."

The interviewees identified demand for training in several areas, including IT, Facilities, Sustainability and Business. Industry developments, such as the rise of SDDC (Software Defined Data Centre) were cited as reasons for demand for IT training and accountability for energy costs was given as a driver for Sustainability training. Business training is seen as an essential component of the training. Industry Expert 4 voiced a desire to include training on, "What makes the business run, what is the healthy business model, a general overview of the financial side, and the business case of data centre operations". Prospective Customer 1 reinforced the need saying, "You can have specialists but you need someone to run your business. To run your business you need to understand the whole aspects of it."

Other considerations for the Value Proposition included the use of English as the common language, since it is already considered to be such across the industry. Industry Expert 1 said, "English is totally standard for everyone in the data centre industry. All the events are in English. People have to work with colleagues and suppliers in other countries so everyone uses English". ECTS credits are seen as a valuable component of the training, and something that have not been seen previously by the interviewees with regards to professional data centre training services. Industry Expert 4 said, "ECTS credits could be valuable to the participants as long as it can be used internationally, not just in Finland." Recognised industry experts as tutors were also cited as being a valuable component to building the Value Proposition.

4.3 Channels

12 codes were identified that should be considered when developing the Channels element of the Business Model Canvas. Figure 12 represents the relevant identified codes and frequency of occurrence.
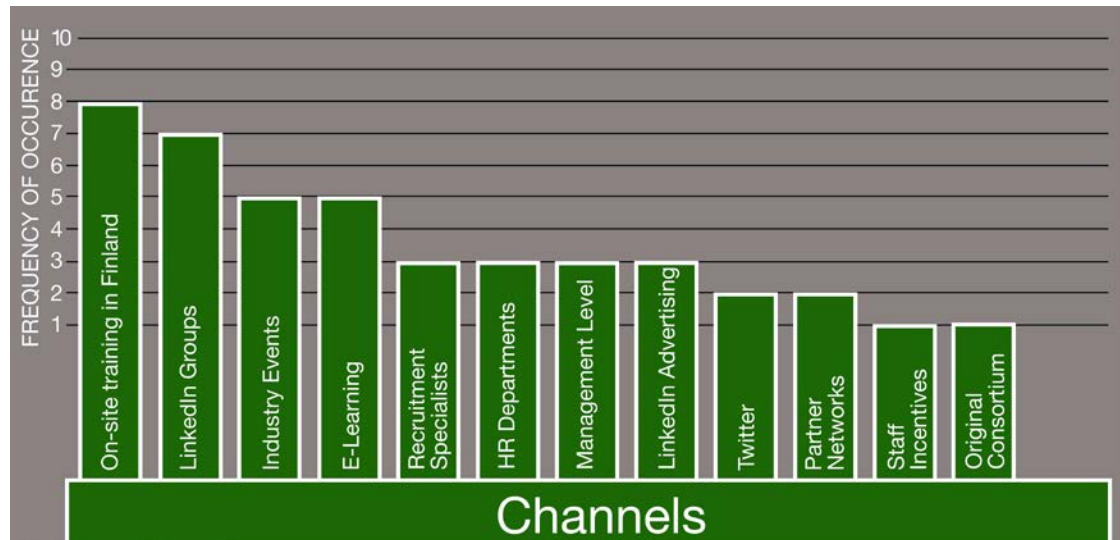
Figure 12. Channels Data Results

2 channels of delivery for the training were identified, the highest occurring channel being face-to-face training in Finland and the other being e-learning. Most interviewees expressed a belief that most of the training should be delivered via e-learning with either one visit to Finland lasting up to one week, or a maximum of two visits to Finland for a maximum of 3 days each. Industry Expert 3 said, "One week intensive on-site training or two long weekends is the maximum commitment that the majority of working participants would give. The rest has to be remote." This viewpoint was reinforced by Prospective Customer 1, who said, "With most data sentre operators the team is very small, so the longer people are away on training the more difficult it is. One week or two visits for 3 days would be the maximum."

In terms of appropriate channels to market the training service to potential customers, LinkedIn groups were mentioned frequently. By creating a LinkedIn group specifically related to the phenomenon of the data centre industry skills gap, several

interviewees believe that a community of industry professionals can be encouraged to engage with each other and the training provider. LinkedIn advertising was also suggested, albeit less frequently, as a method to target specific customers. Industry events were also suggested as a means to reach potential customers, with representatives of the service provider attending relevant events as delegates or exhibitors. Consortium Member 2 pointed out that exhibiting in cooperation with suitable partners would help to manage costs, which are often high when exhibiting at events, and could help to find customers by association with the partner(s).

Additional suggested channels included targeting potential customers through the original consortium's business network, via Twitter advertising and targeting the human resources departments and/or targeting management level employees of relevant companies in order to promote the training in a top-down approach. Prospective Customer 1 suggested that, "The training could be seen as an incentive for the management to offer to employees."

Industry Expert 1 suggested that contra-deals could be negotiated with data centre recruitment agencies, so that applicants who are unsuccessful when applying for relevant roles would be provided with information regarding the training service. Those individuals would be encouraged to consider undertaking the training so that they have a better chance of success in their next job application. The contra-deals would involve paying the recruitment agencies commission for each successful sale.

4.4 Customer Relationships

8 codes were identified that should be considered when developing the Customer Relationships element of the Business Model Canvas. Figure 13 represents the relevant identified codes and frequency of occurrence.
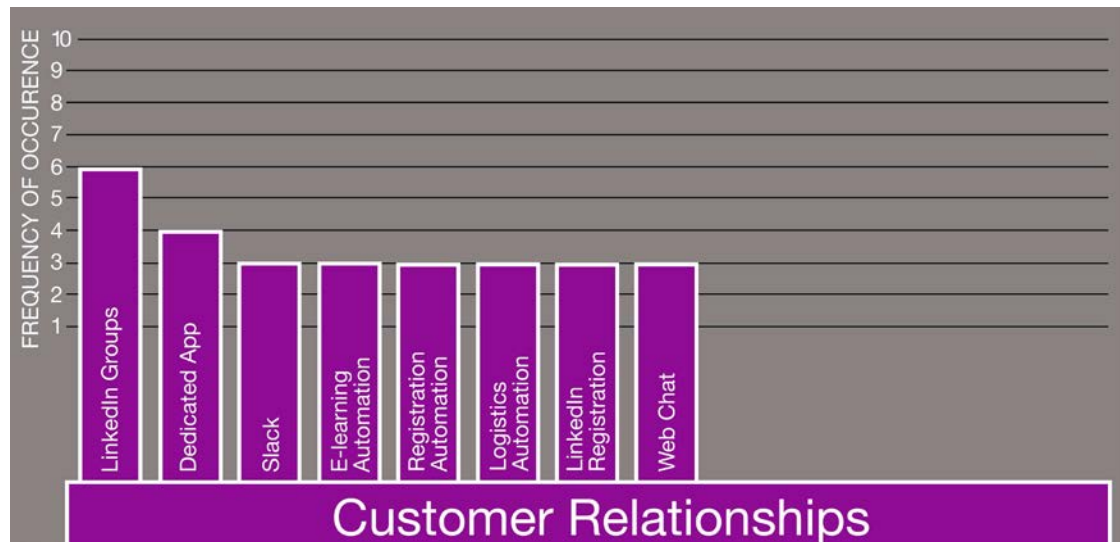
Figure 13. Customer Relationships Data Results

Several interviewees highlighted that private LinkedIn or Slack groups could be created for each on-going class undertaking the course at the same time, which would enable open discussions between the students, with each other and also with tutors. As previously mentioned in the Channels results (Chapter 4.3), it was suggested that some channels could be public for anyone who is interested the topic of data centre training, which would help in the facilitation of pre-sales marketing and gathering information on customer opinions. This viewpoint is put forward by several interviewees including Consortium Member 1, who said, "A community of practice should be considered for data centre professionals interested in training services to facilitate connections between customers and the organiser. It would also support marketing efforts."

Automation was cited as an important consideration by several interviewees, relevant to the registration process, general delivery of e-learning materials and logistics.

> Registration should be automated so students can start e-learning
> modules whenever they want and work those while waiting for the next
> available physical classes and site visits. The registration system could
> even use Linkedin authorisation to automatically complete their
> registration details. Registration for physical classes should be
> automated too, showing available course places, taking payments et

> *cetera, and then recommending travel and accommodation options. (Consortium Member 3)*

In addition to the utilisation of existing tools, some interviewees expressed the opinion that a dedicated application for mobile devices would function as a useful tool for efficiently managing bookings and communications on multiple levels.

4.5   Revenue Streams

4 codes were identified that should be considered when developing the Revenue Streams element of the Business Model Canvas. Figure 14 represents the relevant identified codes and frequency of occurrence.
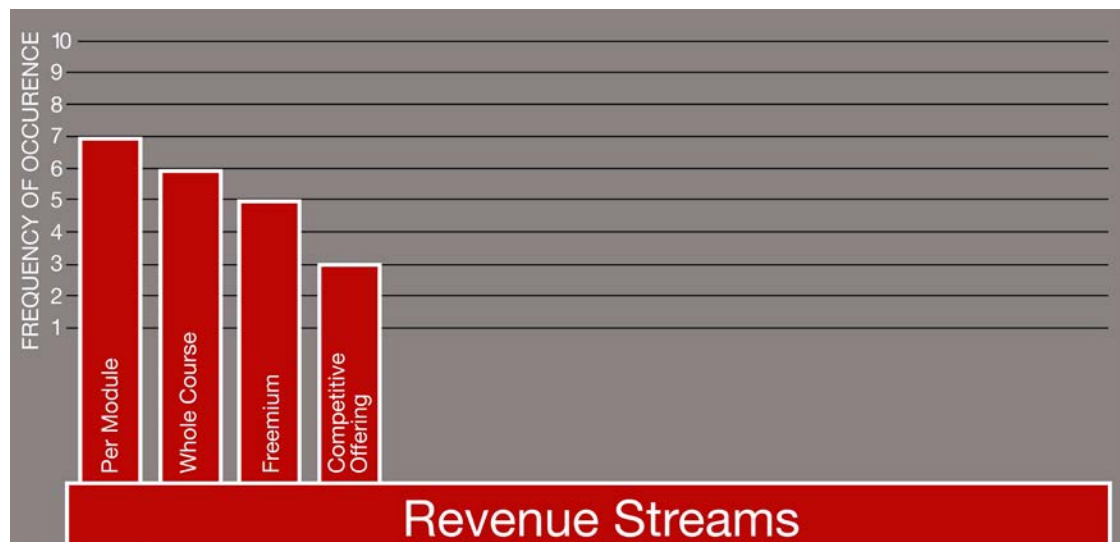
Figure 14. Revenue Streams Data Results

Many interviewees suggested that the service should offer options to pay either for the whole course or on a per-module basis. Consortium Member 3 suggested that, "It would be nice to offer options for individual modules or a whole course. Some students might be able to do one module and pay for it but be unable to do the whole course at one time so the service should cater for those options."

Some interviewees highlighted that the pricing of the course is important and if kept to a reasonable level, in comparison to other data centre training services in the market, the service should be expected to attract a significant number of customers. The concept of a freemium pricing model was discussed, with several interviewees

giving the opinion that it would be attractive to potential customers if a single module could be offered for free to allow them to sample the training service. Consortium Member 3 had the opinion, "Yes, probably at least one module could be given for free to tempt students to start training. It's easier to market to existing customers, even if they aren't paying, than find totally new customers to pay for a service."

4.6   Key Resources

12 codes were identified that should be considered when developing the Key Resources element of the Business Model Canvas. Figure 15 represents the relevant identified codes and frequency of occurrence.
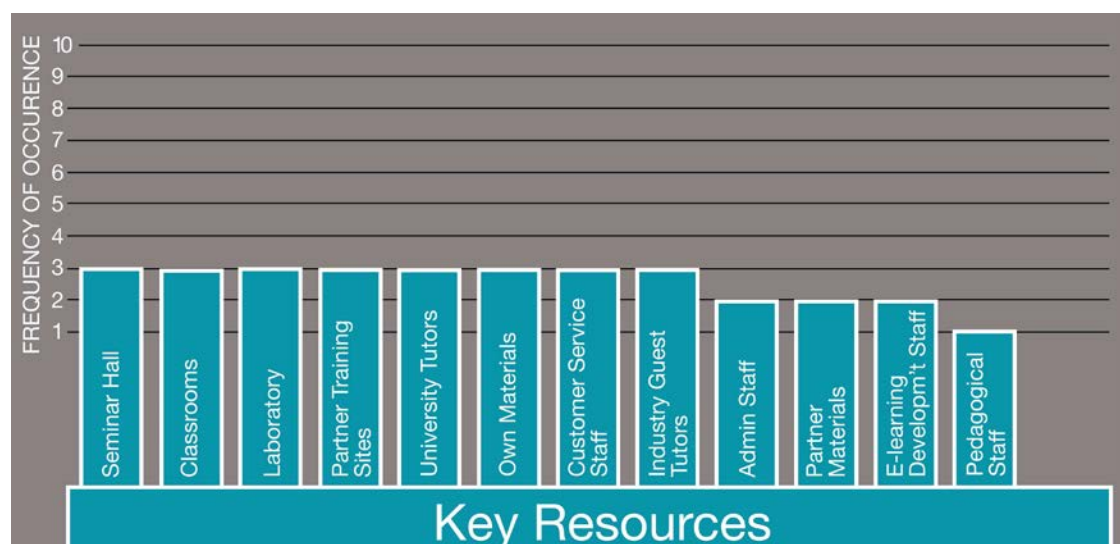
Figure 15. Key Resources Data Results

Several physical resources were suggested as key resources, including seminar halls, classrooms and a laboratory. The need for a laboratory as a key resource is linked to the frequently cited need for a laboratory based training service in the Value Proposition element. Educational materials were also highlighted by several interviewees as being important resources, with some materials already existing within universities and lots of updated materials available through vendors of hardware and software that is relevant to the training.

> *Vendor material should be used as much as possible, without the marketing content. Their materials are always up to date and won't cost so much as making materials by own and maintaining them. Universities also have a lot of general material which is not locked to any specific vendor. (Consortium Member 2)*

The point was also raised that the service provider would need to create some of its own training materials.

Several types of staff were highlighted in the data as being key resources in the provision of the training service. These include admin staff, customer service staff, pedagogical staff, skilled staff to update the e-learning content and teaching staff from several universities. The interviewees indicated that guest lecturers from various universities in Finland, and other countries, would be viewed by the customers as very valuable. Similarly, high profile industry representatives would be considered as valuable guest tutors. Prospective Customer 2 said, "Having experts from recognized companies such as HP and IBM would help to attract participants."

4.7   Key Partners

12 codes were identified that should be considered when developing the Key Partners element of the Business Model Canvas. Figure 16 represents the relevant identified codes and frequency of occurrence.
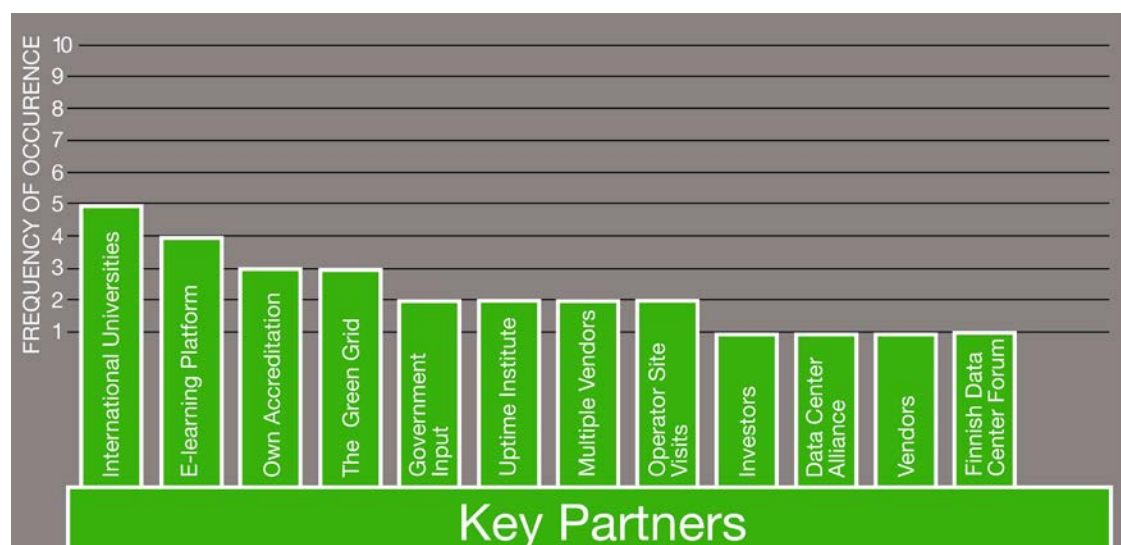

Figure 16. Key Partners Data Results

Several interviewees highlighted the importance of international universities in the development of the training service, since academic achievement is an important factor that contributes to the differentiation of this service when compared to other data centre industry training services. This data is closely associated with the point raised in the previous section, that tutors from a range of universities would be perceived as valuable.

Several specific potential key partners were highlighted in the data, including The Green Grid, Uptime Institute, the Data Centre Alliance and the Finnish Data Center Forum. These organisations would be potentially valuable key partners in terms of promoting the training service through their networks, providing access to existing specialist training materials and accreditation. The issue of accreditation was recognized by the interviewees as being important, with several suggesting that the service should provide its own accreditation, as other training providers do. It was suggested that, in the absence of a definitive authority, accreditation should be provided by the service provider or a high profile existing industry organisation. Industry Expert 4 said, "If the course was accredited by some governing body it would give it more credibility and value. Getting it accredited by an official body or something that gives it industry weight would make it more valuable."

To deliver the e-learning content, several interviewees had the opinion that the service requires a partnership with an existing platform for e-learning content, which would be beneficial for several reasons. Consortium Member 1 summarised the requirement for such a partnership, saying,

> *An e-learning platform should be used since our own is not fully developed and maintenance of a platform could be expensive and time consuming. An existing platform for multiple sectors often has visibility where customers might find the content themselves.*

Further partnerships were suggested by the interviewees, including government input as a means of adding credibility, and engagement with private or public investors who may wish to purchase shares in the training service in order to support its development and generate a flow of skilled workers to fill open positions.

Data centre operators and vendors of relevant hardware and software products were also mentioned by several interviewees, since partnerships with such companies will be necessary when sourcing training materials and arranging site-visits as part of the service. Prospective Customer 1 said, "We get a lot of value from technical vendor training, especially on standardisation, because we buy a lot of technical equipment." The interviewees highlighted that there may be a risk if the training service was associated with very few vendors, which may give the impression that the service is biased, but with a larger number of vendors as partners the perception will be such that customers have the possibility to utilise the training materials from the vendor that matches their own company's relationships. Hence, forming key partnerships with a range of vendors would be extremely beneficial to the service offering.

4.8   Creation of the Business Model

In order to create the final business model to answer the research question, the researcher utilised the collated data from the Data Analysis, along with additional data recorded in the form of a research diary. The Theoretical Framework was then referenced in order to complete each of the Business Model Canvas elements in turn. Throughout the process of creating the business model, the researcher maintained a pragmatic approach to the translation of the collective data into a final business model. This included a constant assessment, in light of wider industry data gathered in the research diary, of whether any of the interview data may misrepresent the real world phenomenon and demands. Additionally, the researcher felt that practical limitations needed to be considered in light of the finite financial and human resources available to undertake the implementation of this training service.

Figure 17 on the next page represents the final Business Model that was designed for the internationalisation of a Finnish corporate training service for the European data centre industry. Following the figure, the design of each element of the business model is detailed.

Cost Structure

Fixed costs:
Website.
Tutor salaries & expenses.
Customer Services,
E-learning development,
Admin & Pedagogical salaries.
Course material development.

Variable costs:
E-learning platform commission.
Recruitment agency commission.
Course material printing.
Seminar hall and classroom rental.
Marketing campaigns.

Key Partners

Strategic alliances (non-competitors):
International Universities (tuition providers)
Industry experts (tuition providers)
Industry partners (site visits)
Hardware & software vendors (education material providers)
The Green Grid (Marketing & Accreditation)
Finnish Data Center Forum (Marketing & Accreditation)
Data Center Alliance (Marketing & Accreditation)

Buyer-Supplier relationships:
E-learning Platform

Key Resources

Physical:
Seminar hall.
Classrooms.
Laboratory with equipment.
Partner training sites.

Human:
Own university tutors.
Guest university tutors.
Industry/partner guest tutors.
Customer service staff.
E-learning development staff.
Admin staff.
Pedagogical staff.

Intellectual:
Own course materials.
Partner course materials.
Own customer database.
Partner databases.

Financial:
Staff salaries.
Marketing budget.
Physical resource rental costs.

Key Activities

Production:
Identify suitable e-learning platform.
Produce/update own face-to-face materials.
Produce/update own e-learning content.
Facilitate/update partner face-to-face materials.
Facilitate/update partner e-learning content.
Identify & recruit guest tutors from academia and industry.
Identify and establish accreditation with suitable partner(s).
Develop and maintain fluid marketing plan according to industry trends.
Identify and establish marketing agreements with partners.
Manage pre-sales communications & marketing channels.
Manage customer service with emphasis on paying customers.
Market paid content to free-service users.

Value Proposition

High level:
Wide scope training to address skills gap in DC Industry
Free basic service - 1 module/limited content
Premium service - full course/all modules

Tutors:
Industry experts
Guest university lecturers

Language: English

Course content:
IT Training
Facilities Training
Business Training
Sustainability & Efficiency Training
Hands-on training (laboratory & site visits)

Accreditation:
ECTS Credits - academic accreditation
Industry body accreditation
Own accreditation

Revenue Streams

Transaction revenues:
Nothing from Freemium users.
Whole Course fees.
Per module fees.

Pricing mechanism:
Fixed menu pricing.

Channels

Direct sales (Owned):
Website.

Indirect sales:
E-learning platform.

Marketing:
LinkedIn groups.
LinkedIn advertising.
Industry Events.

Partner:
E-learning platform.
Recruitment specialists.
DC Human Resources depts.
Company networks.

Delivery:
On-site training in Finland.
E-learning.

Customer Relationships

Personal assistance:
Website.
Web chat.
Email.
Phone.

Self service:
Private Slack groups.
E-learning courses.
Dedicated app.

Automated services:
Registration
Logistics.

Co-creation:
LinkedIn Groups.

Customer Segments

Customer base:
Large volume of free service customers.
Small volume of premium paying customers.

Company type:
Data Centre Operators.
Enterprise companies with own DC facilities.

Roles:
IT Staff.
Facilities Staff.
Managment.
Newly hired staff replacing retirees.
Fresh graduates.
Job seekers.

Locations:
Full European market.

Figure 17. Final Business Model

Customer Segments

At the highest-level customers should be segmented into free service customers and premium, paying customers in line with the Freemium model, further described in the following Value Proposition element. Customers receiving a basic service for free should be targeted for conversion into paying customers as they complete the basic service. Europe was identified as a suitable market by each interviewee. Although the interviewees with specific knowledge of particular countries confirmed them as being suitable markets, these locations do not constitute markets that should be explicitly targeted individually. The target market is instead confirmed to be the whole of Europe, including those named countries, along with the countries that were not represented in the interviews. Remote locations were identified in the data as being specifically suitable potential targets for the training service but since such locations fall within the scope of Europe then remote locations were not deemed to be a relevant, specific segment.

Customers were not further segmented according to location, but were instead segmented according to company type and job role. In terms of company types, the main segment was data centre operators, which was also the main type identified through industry articles and discussion forums in the research diary. In terms of segmentation by role, both IT staff and Facilities staff (engineering) were included, which were verified by data within the research diary. It was the knowledge gap between the IT and Facilities staff that initiated the first piloted training service, further verifying these segments. Further segmented roles included Management staff, who oversee the running of data centre services holistically. Three further segments have some overlap but should be considered individually because each should require separate marketing approaches. These are job seekers, fresh graduates and newly hired staff hired to replace retiring employees.

Value Proposition

As highlighted in the Theoretical Framework chapter 2.5, companies often choose whether to compete based on cost structure or a customer's willingness to pay. Whilst the interview data indicates that customers put emphasis on costs, the creation of the training service is based upon a distinct lack of existing services and upon a customer demand for high quality solutions. Therefore the Value Proposition

must be primarily based on the customer's willingness to pay. In order to drive customer uptake, the service should utilise a Freemium model by making a single, full module available for free as an introduction. Freemium customers should subsequently have the option of paying for the full course or additional individual modules.

The interviewees confirmed that a skills gap exists across the data centre industry, so at a high level the Value Proposition aims to deliver a wide scope training service to address this issue. In terms of course content (i.e. value that will be delivered to the customers), several areas were identified in the interview data and are supported by the research diary data:

- IT training is essential, especially covering new topics such as SDCC (Software Defined Data Centre). It was highlighted in the interviews that this would be especially valuable for fresh graduates of engineering degrees, who normally have very little IT knowledge as they start new roles.

- Likewise, Facilities training is essential so that all staff (particularly IT staff) have an understanding of the implications of over-provisioning and the effects that has on power and cooling. Existing facilities staff could also benefit from training on new environments and hardware that they don't have experience with.

- Business training is required for a holistic overview of data centre operations and finances.

- Sustainability & Efficiency training is required so that data centre staff can understand ecological issues and well as the financial implications of sustainable and efficient operations.

- Laboratory training is highly desired by data centre employees in various roles. A key issue identified by the interviews is that older facilities staff are retiring so less experienced employees require training time in a laboratory environment where scenarios can be simulated.

Accreditation was raised as a key attribute that would be perceived as valuable, with a number of different possibilities. The interview data shows that ECTS credits will immediately provide a beneficial level of academic accreditation. Many training

providers certify their own courses, which has limited value until there is a wide positive perception in the data centre industry that the certification is meaningful. Since this would require minimal resources to implement, and would help to spread brand awareness, it is recommended that self-certification also be implemented. A more meaningful level of certification would be accreditation by a well-known professional organisation, which would serve to enforce the positive reputation of the training service and indicate a level of quality. The specific organisation is not defined at this stage but the need to identify and agree this industry accreditation is included as a valuable point.

The question of language was raised during the interviews and was also considered when reviewing the research diary data. The data shows that English is used as the default language of communication within the data centre industry across European countries. Most international training services, technical white papers and general industry communication is conducted in English. On a pragmatic level, it can also be considered that the creation and management of all materials and delivery of face-to-face training would not be viable in multiple languages.

Channels

The Channels element describes how the value proposition should be communicated and delivered to the customer segments. In terms of owned, direct channels the company's website should be used to facilitate sales of the full training service, or specific face-to-face courses. According to the data, indirect partner channels, specifically e-learning platforms, should be utilised to facilitate the sales of e-learning content courses (if purchased separately from the full service, which would include face-to-face courses).

In order to raise awareness of the training service, and to allow customers to evaluate the value proposition, a combination of marketing channels and partner channels should be used. The marketing channels identified in the interview data and research diary were LinkedIn groups (without cost), LinkedIn advertising (with cost) and attending Industry events as delegates or exhibitors (with cost). Partner channels should consist of the chosen e-learning platform, introductions to customers by

recruitment specialists, referrals by data centre human resources departments and referrals through partner company networks.

Delivery of the value proposition should be facilitated through two delivery channels: on-site training in Finland by KAMK/AIKOPA in collaboration with partners, and online via the e-learning platform.

Customer Relationships

The Customer relationships relevant to this training service are split into categories of personal assistance, self-service, automated services and co-creation. The data shows a strong preference for LinkedIn groups, created specifically for topics relating to the training service, to initiate and moderate relevant discussions forming a community of practice. These groups would provide a free and open forum for data centre professionals to find out about the training service, provide feedback on the value proposition and propose changes or additional content. In this way the service may be developed using a co-creation customer relationship approach. This community of practice would also help to develop long-term relationships with the customers by maininging a level of engagement.

Personal assistance refers to the more traditional means of direct one-to-one communication identified from the data, such as a web chat function on the company website. Whilst not explicitly identified as a code in the Customer Relationships data analysis (section 4.4), the other codes imply that a website is required in order to facilitate them. Registration automation, integrated Linkedin registration and web chat support all depend upon a website being available as a platform for managing pre-sales customer relationships. Email and phone communication also do not feature in the interview data but featured strongly in the research diary and were often assumed to be de-facto communications channels.

Self service will be an important aspect of this training service to minimise human resource drainage. The interview data highlighted the use of Slack, a cloud-based team collaboration platform, as a useful tool for customer groups to use. This would allow customers to communicate with each other, and also with tutors and partners, offsetting some of the need for personal assistance. Self-service is also an important

aspect of e-learning since the customer should be able to initiate courses and access relevant materials without a need for personal assistance. This is especially relevant for free service users undertaking an introductory module through an e-learning platform. A dedicated application for mobile devices was highlighted in the interview data, which is a valid component for the business model, but would most likely be a long-term objective due to the development costs involved.

Automated services are a sophisticated form of self-service that provide significant value for the customer. The interview data shows that an automated registration system linked to the user's LinkedIn profile would be a strong example of registration automation. Additionally, the arrangement of logistics for customers attending face-to-face learning in Finland would be valuable.

Revenue Streams

Two primary Revenue Streams for this training service were identified from the data. Since the scope of the business model is one service consisting of several modules, then revenue can be generated from charging transactional fees for the whole course (including several e-learning modules and face-to-face classes) or for individual modules. These revenues should use a fixed menu pricing mechanism, based on static variables such as operational costs. No revenue will be generated from the free service customer base undertaking the introductory module.

Key Resources

Several key resources were identified in the interview data and were further reinforced by research diary data. The following physical resources are required for the face-to-face training and site visits; seminar hall, classrooms, laboratory and partner training sites. Kajaani University of Applied Sciences (KAMK) already has significant seminar hall and classroom facilities so these would require minimal effort and finances to secure. Additionally, KAMK and CSC – IT Center for Science jointly operate an existing data centre laboratory environment with the KAMK campus, which negates the need to invest in a laboratory facility specifically for this training service. Partner training sites would also be required to facilitate group visits to operational data centres and vendors of relevant hardware and software products.

In terms of human resources, several roles were identified as being necessary to operate the training service. Some of these roles may be combined in practical terms, so that one individual employee is responsible for several of the roles identified in the data. The university (KAMK) would require the following human resources: tutors, customer service staff, e-learning development staff, admin staff and pedagogical staff. Guest tutors would also be required from other universities and relevant industry companies (partner companies and also invited well-known industry experts).

The basis of this training service is the provision of specialised education so intellectual resources would be required from KAMK and also from the selected partners. Some educational material already exists within KAMK and would require translation into English and ongoing updates over time. Materials supplied by the service's partners would be updated by those same companies as a matter of course, especially those materials that relate to software or hardware products. Customer databases are an additional intellectual resource that would be required for marketing purposes, both KAMK's own database and those supplied by partners who have an interest in promoting the service.

The financial resources required for this service are limited due to the dependency on strong partner relationships. KAMK, or an outside investor, would be required to commit capital to cover initial costs until sales begin, generating revenue that supports these costs.

Key Activities

During the data analysis, Key Activities was not identified as a theme by which the data should be segmented because these activities may only be derived from the other completed Business Model Canvas elements. The key activities are the most important actions that are involved in executing the business model successfully and profitably. Therefore the researcher proposed a series of activities designed to create the Value Proposition, reach the identified Customer Segments, earn Revenues and maintain Customer Relationships (as identified by the primary data). The key activities identified for this training service come under the category of Production activities since the training service will be delivered through a combination of

producing educational content (for face-to-face classes and delivery via an e-learning platform) and facilitating educational experiences. The key activities identified are as per Table 11 below.

Table 11. Key Activities Business Model element

Key Activities

- Identify suitable e-learning platform.
- Produce/update own face-to-face educational materials.
- Produce/update own e-learning educational content.
- Facilitate/update partner face-to-face educational materials.
- Facilitate/update partner e-learning educational content.
- Identify & recruit guest tutors from academia and industry.
- Identify and establish accreditation with suitable partner(s).
- Develop and maintain fluid marketing plan according to industry trends.
- Identify and establish marketing agreements with partners.
- Manage pre-sales communications & marketing channels.
- Manage customer service with emphasis on paying customers.
- Market paid content to free-service users.

Key Partnerships

Key Partnerships are essential to the successful creation of the business model for this training service, as can be seen by the range of partners identified within the interview data. When assessing the motivation for these partnerships the researcher was able to classify the motivations as a combination of 'Optimisation and economy of scale' and 'Acquisition of particular resources and activities'.

Optimisation and economy of scale: in order to deliver the e-learning aspects of the training service it is perceived by the researcher, and verified by the interview data, that the provision of an e-learning platform should be outsourced to an existing, reputable company. It would be impractical and cost prohibitive to create a new e-learning platform rather than outsource this.

Acquisition of particular resources and activities: KAMK does not own all the resources required to create and maintain the training service, therefore partners would be essential to provide up-to-date knowledge in a variety of specialized areas. Partners also have a key role in marketing the training service through their own networks. The majority of the key partnerships identified in the primary data would therefore be classified as Strategic alliances between non-competitors and are presented in the Table 12 on the next page.

Table 12. Key Partnerships Business Model element

Table 13 text below references.

Key Partnerships

Strategic alliances (non-competitors):
- International Universities (tuition providers).
- Industry experts (tuition providers).
- Industry partners (site visits).
- Hardware & software vendors (education material providers).
- The Green Grid (Marketing & Accreditation).
- Finnish Data Center Forum (Marketing & Accreditation).
- Data Center Alliance (Marketing & Accreditation).

Buyer-Supplier relationships:
- E-learning Platform.

Cost Structure

The Cost structure element describes the most important costs that are involved in operating the business model and could only be produced after the Key Resources, Key Activities and Key Partnerships elements were completed. This business model falls between the two main classifications of business model cost structure; Cost-driven and Value-driven. The value derived by customers should be very high, in light of the lack of such available training services, and the standard of delivered service should be extremely high since the service is designed to be delivered by experts from the data centre industry and education sector. At the same time, the model is also very much cost-driven, with focus on creating and maintaining a lean Cost Structure through the utilisation of partnerships and outsourcing. The interview data shows that customers desire a lower cost training service than the competing services available on the market, so the full course and individual modules should be priced competitively in order to generate sales. The costs for this training service can be categorised as Fixed costs or Variable costs as per Table 13, however no Economies of scale or Economies of scope were identified.

Table 13. Cost Structure Business Model element

Cost Structure

Fixed costs, which remain constant irrespective of sales volumes:
- Website.
- Tutor salaries & expenses.
- Customer Service, E-learning development, Admin & Pedagogical salaries.
- Course material development.

Variable costs, which vary proportionally with sales volumes:
- E-learning platform commission.
- Recruitment agency commission.
- Course material printing.
- Seminar hall and classroom rental.
- Marketing campaigns (speculative, not driven by sales volumes).

5 Discussion

The study was guided by one main research question: **What suitable business model would enable the successful internationalisation of a Finnish corporate training service for the European data centre industry?**

To understand the key concepts that lie at the heart of the research phenomenon, and to ultimately answer the research question, it was necessary to study internationalisation literature related to the context of education export and business model literature. The theoretical framework, based on Osterwalder's and Pigneur's Business Model Canvas (2010), guided the empirical study. Primary data was gathered through 14 in-depth, semi-structured interviews with a variety of stakeholder groups relevant to the European data centre industry, and the original consortium that first operated the training service. Additional data was collected by recording observations in a research diary. Based on the analysis of this qualitative data, the final business model was created and presented as Figure 17 in chapter 4.8. "Creation of the Business Model". The business model, designed with customer perspective as a guiding principle, clearly defines the steps that must be undertaken in order to practically take the training service concept forward to be implemented for international markets, therefore meeting the objective of this research.

Considering the highly practical nature of the research topic, and the fact that the researcher had a central role in organising change within KAMK's development process, the chosen Design Research strategy was well suited to achieving the objective of the study. In choosing this strategy, the researcher's ambition was to also ensure continuity of the development process and to facilitate useful networks and collaboration opportunities that support the principles of the network theory of internationalisation. This can be considered as having been successfully achieved, since several stakeholders that were interviewed during the study voiced an interest towards collaboration in designing the content and marketing the training to their networks.

The study is an applied literary contribution to the relatively new phenomenon of education export in Finland, especially in the field of professional training services

export, on which very little existing research exists. From the perspective of the data centre industry the study brings an academic perspective to a recognised phenomenon, drawing theoretical analysis together with data gathered directly from key industry representatives to propose a practical and entirely feasible solution. For the researcher's employer, KAMK, this research opens up an entirely new channel for business opportunities, which supports the organisation's active development of education export services. In addition, this supports Kainuu's Regional Plan 2035 to increase international and national recognition of the region as a location of data centre expertise.

The following sub-chapters include a discussion of the results in the light of the reviewed literature on internationalisation and business models. The practical implications of the findings are discussed, providing recommendations that should be taken into consideration in further development process. Those limitations that had the greatest impact on the research are acknowledged and verification of results is discussed. The Discussion chapter concludes with recommendations for future research.

5.1   Assessment of the results in the light of literature

It should be noted that a distinct lack of academic research into the use of business models in education export cases resulted in an absence of such material being available for literary review. According to Rask (2014, 16), despite it being a common phenomenon in business, the consideration of business model development from an international perspective is rare in literature. This research therefore contributes to the fields of Finnish education export and business model development by utilising the Business Model Canvas as the theoretical framework for internationalising a professional-level educational service. In the future this research may therefore be referenced by other researchers who are working on the internationalisation of other professional-level training services.

The business model that was proposed in section 4.8 represents the collation of the recorded data, applied according to the theoretical framework. In keeping with the concept put forward by Osterwalder and Pigneur (2010, 15) of a business model

representing a sketch of a strategy, this business model for the internationalisation of a professional training service is intended to implemented within the structure, processes and organisation of the existing organisation Kajaani University of Applied Sciences. In order to be of real use, and to be implemented within the structure of an existing, functioning business, the most important information to be learned from the proposed business model is how value can be delivered to customers at an appropriate cost. This aligns with Margretta's (2002) view of integrating fundamental economic logic within business model design, which holds value delivery in return for appropriate costs to be critical.

The research sought to establish whether demand exists for a training service that lasts for several months and the data analysis shows that customers are willing to pay for a long-term service that addresses their needs. This service delivery cycle enabled the researcher to propose a business model that contains both "per-module" short-term and "whole course" long-term revenue streams, which together allow for sustained generation of revenue. Stewart and Zhao (2000) highlight this generation of income sustained over time to be a fundamental consideration of business model design.

The final business model aligns with McQuillan and Sharkey Scott's (2015) "Niche Global Business Model" approach to internationalisation, which proposes that the company gains expertise and internationalises by providing specialised work or addressing the demands of a niche industry. The data centre sector is considered to be such a niche industry and the training service constitutes a specialized service that meets demand. Additionally, this approach describes how a company follows a gradual transition from local to global and assumes replication of locally or nationally provided specialised services to international customers. The pilot training course originally run in Finland can be considered to be a national specialized service, which will be replicated internationally according to the proposed business model.

Onetti et al. (2012) argue that entrepteneurship, innovation and internationalisation are deeply interconnected and must be incorporated into practical business models. The researcher found that several internationalisation theories provided valuable insight when reflecting upon the results of the data analysis. In light of the reviewed

internationalisation theories, the results of the empirical study indicate that the export of this corporate training service targeted at the data centre industry has predominantly "Born Global" characteristics (Knight & Cavusgil 2004). In other words, it can be immediately produced and delivered worldwide, or in this case Europe, since that is the geographical scope of the research.

Whilst the full Uppsala model of Johanson and Vahlne (1977) does not appear to be entirely relevant to this export of a training service, the researcher takes the pragmatic view that the Uppsala model's incremental internationalisation process relates directly to this case. The results of the Customer Segments section (chapter 4.1) show that all of Europe can be considered as a viable market for the service. However this does not necessarily mean that the whole of Europe should be considered as a single market to entered at once. Instead, some of the countries identified individually could be targeted in turn, allowing KAMK to first enter nearby markets that have similarities with the training service's home market. The market knowledge gained through this incremental approach would allow for improvements to the service before expanding farther afield.

The researcher's assessment is verified by McQuillan & Sharkey Scott's (2015) statement;

> *Our findings show that service firms may indeed pursue incremental internationalisation into new markets, as theory has long held (Johanson & Vahlne, 1977, 2009), but they may simultaneously act like 'born globals' (Knight & Cavusgil, 1996; Oviatt & McDougall, 1994), and their global activities may support market specific activities and vice versa.*

The defined business model shows that partnerships are an integral part of delivering the identified key activities and creating a value proposition. This approach is supported by the Network theory of internationalisation, which suggests that competitive advantage is gained not only by a company's internal resources but also through engagement and partnerships with other companies (Coviello, Ghauri, & Martin 1998; Johanson & Mattsson 1988). Furthermore Freeman, Cray, and Sandwell (2007) recommended that service companies should use a set of collaborative relationships as their main strategy, which aligns very closely with the final business model.

Transaction cost theory also supports the proposed business model, which relies on partnerships and outsourcing to minimize costs and maximize value from transactions (Welch, Benito, & Petersen 2007, 24-28). This theory could be further utilised to perform deeper cost-benefit analyses of the highlighted entry modes to the European market.

5.2   Practical implications and recommendations

There are several practical implications that should be considered by the management team when moving forward to implement this training service according to the designed business model. One of the most critical actions would be to design the training content in more detail, expanding upon the features listed in the Value Proposition element of the designed business model. Existing material from the pilot training service run in 2014-2015 should be translated into English and updated where necessary. As part of the content planning process the e-learning content and face-to-face training sessions, including site visits, need to be defined in more detail. According to the data gathered from the interviews, customers would prefer to attend face-to-face training and site visits in Finland for a single period of one week or two periods of three days each. This will be a core element of the overall offering, which differentiates the service from other training products.

The results of the research revealed that the business model should adopt a mixed value-driven and cost-driven approach. Part of the justification for a cost-driven approach was related to data gathered from some interviewees who commented that most training services available on the market are very expensive, often prohibitively so from a customer perspective. The author therefore recommends that a thorough analysis of competitors' pricing should be conducted in order to evaluate how competitively the service can be priced without compromising on quality.

In order to conduct the detailed design of the service, the management team must identify and engage with a range of potential Key Partners from universities and relevant industry companies. As part of the Cost-driven approach these Key Partners are fundamental to the creation of educational materials and delivery of guest lectures. In addition, the establishment of professional accreditation with a suitable

partner would significantly improve the perceived credibility of the service when marketing activities begin.

The next practical step would be to conduct a cost-benefit analysis of the service for one full cycle (the time it takes to run one full training course). This would entail using the Cost Structure element of the business model to identify and break down all predicted costs, then estimate realistic sales figures for that same period so that the predicted costs can be measured against the predicted income. The difference between the two would constitute the predicted profit and the management team should then consider whether any identified profit margin is deemed acceptable. Other benefits may be identified in the process but should be treated as secondary considerations after a predicted profit has been confirmed.

Despite the identification of Europe as a valid target market according to the interview data, there is a need to take into consideration that Kajaani University of Applied Sciences (including AIKOPA) is a state organization that has limited resources; therefore export activities will most likely be initially defined by marketing budget limitations. Data gathered through observation in the research diary highlighted information that the researcher recommends should be taken into consideration when selecting appropriate markets to initially target:

- The UK, the Netherlands, Germany and France represent the largest data centre markets in Europe and should be included in the first targeted market group.
- The Nordic and Baltic regions are more aware of the data centre IT-Facilities knowledge gap than many other countries due to limited resources and the number of remote data centre locations. These locations should therefore be included in the first targeted market group.

5.3 Limitations of the research and verification of findings

One of the limitations of this study is that all interviews, apart from the members of the original consortium, had to be conducted over phone, Skype and Google Hangouts, due to the remoteness of the interviewees from the researcher. On one hand, it offered the possibility to conduct interviews in different European countries;

but on the other hand this meant that it was only possible to speak to one person in each company. Despite the fact that each interviewee holds a senior position, conducting discussions as focus group interviews involving different representatives from the same company would have provided the researcher with richer data. Additionally, it was not possible to hold a 90-minute long interview in each case, as the researcher originally planned, due to the busy schedules of the interviewees and a possible lack of perceived short-term gain by giving their time. Once this challenge was identified the researcher reduced the number of interview questions to keep the interview as focused as possible within the limited interview time.

The study utilised Design Research strategy, which is based on a cyclical process that includes the following stages: analysis of the problem, design process, implementation and evaluation (Eisenschmidt and Niglas 2014, 224). Due to time constraints and a large scope of work involved in the implementation of the designed Business Model, this study stops at the design process stage. This could be seen as a limitation, however not an uncommon challenge in a research with a limited timeframe and resources (Kananen & Akpinar 2015).

Trustworthiness of the research was ensured in line with Lincoln and Guba's (1985) four competency criteria suitable specifically for qualitative research: **credibility**, **transferability**, **dependability** and **confirmability.** To increase the credibility of the results and conclusions the researcher utilised techniques of prolonged engagement, persistent observation, cross checking multiple data sources and incorporating multiple research tools in accordance with triangulation principle. To minimise bias caused by the researcher's own assumptions, potentially caused by deep and continuous involvement with the context of the research, peer debriefing was utilised throughout the study, where the researcher met with impartial colleagues at different stages of the research in order to critically review the methods used in the study, as well as to test interpretations of the interview results. At the end of the study the researcher conducted a "formal member check" by organising a session with one of the original consortium representatives to discuss the results of the study.

Qualitative research is usually focused on understanding the phenomenom rather than generalising (Kananen 2013, 202). The results of this research are highly context specific, and therefore cannot be generalised and directly transferred to other contexts. Nonetheless, transferability of the research was increased by describing the context and the process of achieving the research objective in sufficient detail. This technique of "thick description" enables readers to evaluate the extent to which the conclusions drawn are transferable to similar education export cases (Holloway 1997).

5.4 Recommendations for future research

The scope of the current research does not extend past the creation of a suitable business model to address the research question. Therefore, the researcher recommends that future research could focus on the implementation of the designed business model in international markets, and evaluation of the results of this implementation.

Another topic for further research could investigate the process of locating activities related to the professional education service in different markets. The study could look into the possibility of using local partners and agents in setting up and delivery of the key activities. This study could utilise Onetti et al. (2012) Business Model framework that emphasises the relevance of the dimension of geography in accessing resources, developing competences and creating network.

In order to maximise value from the creation of this business model, it is recommended that additional research be focused around the objective of achieving economies of scale in the export of additional professional education services from Kajaani University of Applied Sciences (KAMK). In this case the business model that was designed could be used as the basis of research to adapt it for other niche industries that require professional training services.

Osterwalder and Pigneur (2010) highlight that the process of designing a new business model requires the creation of multiple sketches. The business model within this study is based on data gathered within the scope of this research, but should not be taken as the only feasible data. To achieve the best possible solution for the

documented phenomenon, multiple variations of business models could be created in order to explore any new possibilities that may be opened up.

Johnson et al. (2008) suggest that successful new businesses may revise their business models approximately four times when working to achieve profitability. By conducting ongoing research based on and continual observation and regular dialogue with key stakeholders, most specifically customers, new data could be utilised to conduct additional research and design updated business models according to changing market trends and demands. This research would be best combined with ongoing research into the competitive environment in order to assess whether the business will maintain long-term competitive advantage, as recommended in Michael Porter's (1979) Five Force Framework.

References

Action plan for the implementation of the key project and reforms defined in the Strategic Government Programme. 2016. Publication on Finnish Government website. Accessed 4 March 2017. Retrieved from http://valtioneuvosto.fi/documents/10616/1986338/Action+plan+for+the+implementation+Strategic+Government+Programme+EN.pdf/12f723ba-6f6b-4e6c-a636-4ad4175d7c4e

Adams, J., Raeside, R., & Khan, H. T. A. 2014. *Research Methods for Business and Social Science Students.* 2nd Edition. New Delhi: Sage Publications Pvt. Ltd.

Afuah, A., Tucci, C. L. 2001. *Internet Business Models and Strategies: Text and Cases*. Irwin/McGraw-Hill.

Afuah, A. 2004. *Business models. A strategic management approach.* McGraw-Hill/Irwin.

Aikopa. 2014. *Ekotehokas konesalikoulutus kisaa kansainvälisessä palkintogaalassa*. [The eco-efficient data centre training competes in the international award gala]. Accessed 10 June 2015. Retrieved from http://www.aikopa.fi/news/Ekotehokas-konesalikoulutus-kisaa-kansainvalisessa-palkintogaalassa/gllr34ut/f0eaf9cf-62b0-4b19-9b75-16d548a51646

Aken, J. E. V. 2004. Management Research Based on the Paradigm of the Design Sciences: The Quest for Field-Tested and Grounded Technological Rules. *Journal of Management Studies, 41*, 219–246.

Andersen, O. 1993. On the Internationalisation process of firms: a critical analysis. *Journal of International Business Studies, 24*, 209-231. Accessed 15 May 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Andersen, P., Ahmad, S. Z., & Chan, W. M. 2014. Revisiting the Theories of Internationalisation and Foreign Market Entry Mode: A Critical Review. *International Journal of Business and Commerce, 4,* 37-86. Accessed 20 May 2016. Retrieved from http://www.academia.edu/8912942/Revisiting_the_Theories_of_Internationalisation_and_Foriegn_Market_Entry_Mode_A_Critical_Review

Auvinen, A-M, Juntunen, T., & Poikonen, J. 2010. *Koulutusviennin käsikirja*. [Education Export handbook]. Accessed 20 December 2016. Retrieved from Education Export Finland members extranet http://www.eduexport.fi/

Axelsson, B., Johanson, J. 1992. Foreign market entry: the textbook vs the network view. In Axelsson, B., & Easton, G. (Eds.) *Industrial Networks: A New View of Reality*, 218-231. London: Routledge, 218-234.

Blomstermo, A., Eriksson, K., Lindstrand, A., & Sharma, D. D. 2004. The perceived usefulness of network experiential knowledge in the internationalizing firm. *Journal of International Management, 10,* 355-373. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Boddewyn, J., Halbrich, M., & Perry, A. 1986. Service multinationals: Conceptualization, measurement and theory. *Journal of International Business*

Studies, 17, 41. Accessed on 15 March 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com.

Boyle, B. 2014. *Cloud, outsourcing and M2M driving European Data Centre growth*. Accessed 8 April 2016. Retrieved from Datacenter Dynamics http://www.datacenterdynamics.com/news/cloud-outsourcing-and-m2m-driving-european-data-center-growth/87893.fullarticle

Brouthers, K. D. 2002. Institutional, cultural and transaction cost influences on entry mode choice and performance. *Journal of International Business Studies, 33*, 203-221. Accessed 13 May 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Brouthers, K. D., Brouthers, L. E. 2003. Transaction cost-enhanced entry mode choices and firm performance. *Strategic Management Journal, 24*, 1239–1248. Accessed 10 May 2016. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/smj.362/abstract

Bryman, A., Bell, E. 2007. *Business Research Methods*. 2nd Edition. New York: Oxford University Press Inc.

Bryman, A. 2016. *Social Research Methods*. Oxford University Press. 5th Edition.

Business Opportunities in Global Corporate Training Market. 2016. Page on Finpro website. Accessed 11 March 2017. Retrieved from http://www.finpro.fi/web/finpro-eng/news/-/asset_publisher/R46o/content/id/1548251

Butter, F. A. G. den. 2011. Transaction management: value creation by reducing transaction costs. In W.D. Nelson (Ed.) *Advances in Business and Management, 2*, 1-33. Accessed 13 November 2016. Retrieved from VU University Amsterdam https://www.feweb.vu.nl/en/Images/Den_Butter_(2011)_-_Transaction_management_-_value_creation_by_reducing_transaction_costs_tcm258-204521.pdf

Buzan. T. 2005. *The Ultimate Book of Mind Maps*. HarperCollinsPublisher Limited.

Cameron, S., Price, S. 2009. *Business Research Methods: A Practical Approach*. Chartered Institute of Personnel and Development.

Carneiro, J., da Rocha, A., & da Silva, J. F. 2008. Challenging the uppsala internationalisation model: a contingent approach to the internationalisation of services. *Brazilian Administration Review, 5*, 85-103. Accessed 14 May 2016. Retrieved from http://www.scielo.br/pdf/bar/v5n2/v5n2a02.pdf

Cavusgil, S.T. 1984. Differences among exporting firms based on the degree of internationalisation. *Journal of Business Science Research, 12*, 195-208. Accessed 17 May 2016. Retrieved from ResearchGate www.researchgate.net

Cavusgil, S. T., Knight, G. 2009. *Born Global Firms: A New International Entreprise*. NY: Business Expert Press.

Cavusgil, S. T., Knight, G. 2015. The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalisation. *Journal of International Business Studies, 46*, 3-16. Accessed 27 February 2017. Retrieved from ResearchGate https://www.researchgate.net

Christensen, C. M., Aaron, S., & Clark, W. 2003. Disruption in Education. *Educause Review, 38*, 19-44. Accessed 3 March 2017. Retrieved from Educause https://net.educause.edu/ir/library/pdf/FFPIU013.pdf

Cortili, M., Menegotto, M. 2010. *Internationalisation and business model decisions: A business case in mobile telecommunication industry*. Accessed 15 December 2015. Retrieved from University of Insubria http://eco.uninsubria.it/dipeco/quaderni/files/QF2010_6.pdf

Coviello, N.E., Munro, H.J. 1997. Network relationships and the internationalisation process of small software firms. *International Business Review, 6*, 361-386. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Coviello, N. E., Ghauri, P. N., & Martin, K. A-M. 1998. International competitiveness: Empirical findings form SME service firms. *Journal of International Marketing, 6*, 8-27. Accessed 15 May 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Coviello, N.E., McAuley, A. 1999. Internationalisation and the Smaller Firm: A Review of Contemporary Empirical Research. *Management International Review, 39*, 223-256. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Craig, R. 2014. *Education-as-a-Service: 5 ways higher ed must adapt to a changing market*. VentureBeat. Accessed 7 May 2016. Retrieved from http://venturebeat.com/2014/05/11/education-as-a-service-5-ways-higher-ed-must-adapt-to-a-changing-market/

Crick, D., Spence, M. 2005. The internationalisation of 'high performing' UK high-tech SMEs: a study of planned and unplanned strategies. *International Business Review, 14*, 167-185. Ebsco Business Search Elite www.ebscohost.com

Cumberland, F. 2006. Theory Development within International Market Entry Mode - - An Assessment. *Marketing Review, 6*, 349-373. Accessed 12 May 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

de Langen, F. 2011. There is no business model for open educational resources: a business model approach. *Open Learning, 26*, 209-222. Accessed 20 May 2016. Retrieved from Ebsco Academic Search Elite www.ebscohost.com

de Wit, H. 2010. *Internationalisation of Higher Education in Europe and its assessment, trends and issues*. Accessed on 27 November 2015. Retrieved from http://nvao.com/page/downloads/Internationalisation_of_Higher_Education_in_Europe_DEF_december_2010.pdf

de Wit, H., Hunter, F., Howard, L., & Egron-Polak, E. 2015. *Internationalisation of Higher Education*. European Parliament's Committee on Culture and Education. Accessed 10 March 2017. Retrieved from European Parliament http://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL_STU(2015)540370_EN.pdf

Doorneweert, B. 2014. *Patterns in Business Model partnership*. Accessed 15 February 2017. Retrieved from https://valuechaingeneration.com/2014/07/22/patterns-in-business-model-partnerships/

Dubois, A., Gadde, L. E. 2002. Systematic Combining: An Abductive Approach to Case Research. *Journal of Business Research, 55*, 553 – 560. Accessed on 25 January 2017. Retrieved from ResearchGate https://www.researchgate.net

Dudovskiy, J. 2016. *The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance.* Accessed 2 February 2017. E-book retrieved from http://research-methodology.net/about-us/ebook/

Dunning, J. H. 1993. Multinational enterprises and the growth of services: some conceptual and theoretical issues. *The Service Industries Journal, 9,* 5-39. Retrieved from ResearchGate www.researchgate.net

Dunning, J. H. 1995. What's wrong – and Right – with Trade Theory. *International Trade Journal, 9*, 153 – 202.

Edmundson, A. 2005. The Cross-Cultural Dimensions of Globalized E-Learning. *International Journal of Information and Communication Technology Education, 1*, 47-61. Accessed 20 February 2016. Retrieved from ResearchGate www.researchgate.net

Edmundson, A. 2009. Culturally Accessible e-learning: an overdue global business imperative. *T+D, 63*, 40-45. Accessed 01 March 2016. Retrieved from Ebsco Academic Search Elite www.ebscohost.com

Education services. 2017. Page on World Trade Organization's website. Accessed 10 March 2017. Retrieved from https://www.wto.org/english/tratop_e/serv_e/education_e/education_e.htm

Edwards, R., Edwards, J. April 2001. Internationalisation of education: a business perspective. *Australian Journal of Education, 45*, 76-89. Accessed 15 May 2016. Retrieved from http://www.freepatentsonline.com/article/Australian-Journal-Education/85104493.html

Eisenschmidt, E. Niglas, K. 2014. Implementing a design research approach and facilitating networking in the process of education change. *International Journal of Multiple Research Approaches, 8*, 221-232.

Ekeledo I., Sivakumar, K. 2003. International market entry mode strategies of manufacturing firms and service firms A resource-based perspective. *International Marketing Review, 21*, 68-101.

El Cheikh, W. O. 2015. *Productising Finnish Education for Export: The Barriers and Enablers of Internationalisation. A Multiple Case Study: Fifteen Members of Future Learning Finland*. Master's thesis. Helsinki: Aalto University, School of Business. Accessed 10 October 2016. Retrieved from http://epub.lib.aalto.fi/fi/ethesis/id/14170

Elango, B., Abel, I. 2004. A comparative analysis of the influence of country characteristics on service investments versus manufacturing investments. *American business review, 2*, 29-39. Accessed on 21 February 2016. Retrieved from http://search.proquest.com/openview/7b37af41bc585240af63598fb25b0740/1?pq-origsite=gscholar

Elo, M. 2005. *SME Internationalisation from a Network Perspective. An Empirical Study on a Finnish-Greek Business Network*. Åbo Akademi University Press. Accessed 19 May 2016. Retrieved from http://www.doria.fi/handle/10024/4143

Erramilli, M. K., Rao, C. P. 1993. 'Service firms' international entry-mode choice: a modified transaction-cost analysis approach'. *Journal of Marketing, 57*, 19–38. Accessed 11 May 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Eul, M., Menke, A. 2015. *The Data centre of the Future: Creating New Jobs in Europe*. Accessed 26 February 2017. Retrieved from A.T. Kearney https://www.atkearney.com/documents/10192/6231640/The+Data+Center+of+the+Future+-+Creating+New+Jobs+in+Europe.pdf/2d8499ad-8016-4f5e-8615-f20c7aa53e32

Eurich, M., Weiblen, T., & Breitenmoser, P. 2014. A six-step approach to business modelinnovation. *International Journal of Entrepreneurship and Innovation Management, 18*, 330–348. Accessed 10 February 2017. Retrieved from ResearchGate www.researchgate.net

Finnish education export strategy: summary of the strategic lines and measures. 2010. Publication on the Ministry of Education and Culture website. Accessed 22 January 2017. Retrieved from https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/75524/okm12.pdf?sequence=1

Finland, a land of solutions. *Strategic Programme of Prime Minister Juha Sipilä's Government.* 2015. Publication on Finnish government website. Accessed 4 March 2017. Retrieved from http://valtioneuvosto.fi/documents/10184/1427398/Ratkaisujen+Suomi_EN_YHDISTETTY_netti.pdf/8d2e1a66-e24a-4073-8303-ee3127fbfcac

Fletcher, R., Barrett, N. 2001. Embeddedness and the Evolution of Global Networks: An Australian Case Study. *Industrial Marketing Management, 30*, 561-573. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Fletcher, R. 2016. Network Theory and Countertrade Transactions. *International Business Review, 5*, 167-189. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Foreign students' tuition fee bill tabled. 2015. Finland Times. Accessed 10 March 2017. Retrieved from http://www.finlandtimes.fi/education/2015/10/23/21597/Foreign-students%E2%80%99-tuition-fee-bill-tabled

Freeman, S., Cray, D., & Sandwell, M. 2007. Networks and Australian professional services in newly emerging markets of Asia. *International Journal of Service Industry Management, 18*, 152-166. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Gabrielsson, M., Pelkonen, T. 2008. Born internationals: Market expansion and business operation mode strategies in the digital media field. *Journal of*

International Entrepreneurship, 6, 49-71. Accessed 28 February 2017. Retrieved from ResearchGate https://www.researchgate.net

Gannon, M. 1993. Towards a composite theory of foreign market entry mode choice: The role of marketing strategy variables. *Journal of Strategic Marketing, 1*, 41-54. Accessed 14 May 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Girotra, K., Netessine, S. 2014. *Four Paths to Business Model Innovation*. Harvard Business Review. Accessed 25 January 2017. Retrieved from Harvard Business Review https://hbr.org/2014/07/four-paths-to-business-model-innovation

Golnam, A., Viswanathan, V., Moser, C. I., Ritala, P., & Wegmann, A. 2014. *Designing Value-Oriented Service Systems by Value Map*. In B. Shishkov (Ed.), *Business Modeling and Software and Design*. Springer International Publishing Switzerland. Accessed 12 December 2016. Retrieved from Google Books https://books.google.fi

Grabowska, M. 2015. Innovativeness in business models. *Procedia Computer Science, 65*, 1023 – 1030. Accessed 15 January. Retrieved from ScienceDirect http://www.sciencedirect.com/

Grabowska, M., Krzywda, J., & Krzywda, D. 2015. *Relations between business model and business strategy*. The 2015 WEI International Academic Conference Proceedings. Vienna, Austria. Accessed 20 January 2017. Retrieved from https://www.westeastinstitute.com/wp-content/uploads/2015/05/Grabowska_Krzywda_Krzywda_Relations-between-business-model-and-business-strategy-EN.pdf

Greblikaitė, J., Barynienė, J., & Paužaitė, Ž. 2015. Towards the Internationalisation Process of Lithuanian Universities. *European Integration Studies, 9*, 73-85. Accessed 28. November 2015. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Haar, J. 2012. *More and more, companies born to be global*. Accessed 2 March 2017. Retrieved from MiamiHerald: http://miamiherald.typepad.com/the-starting-gate/2012/12/more-and-more-companies-born-to-be-global.html)

Halldin, T. 2010. *Born global firms in knowledge intensive business services (KIBS) – what do we know of their performance?* Centre of Excellence for Science and Innovation Studies (CESIS) Electronic Working Paper Series. Accessed 27 February 2017. Retrieved from https://static.sys.kth.se/itm/wp/cesis/cesiswp270.pdf

Holloway, I. 1997. *Basic Concepts for Qualitative Research*. London: Blackwell Science

Hosseini, M., Dadfar, H. 2012. Network-based theories and internationalisation of firms: applications to empirical studies. *The Business & Management Review, 3*, 182-191. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Hsieh, H., Shannon, S. E. 2005. Three Approaches to Qualitative Content Analysis. *Qualitative Health Research, 15,* 1277-1288. Accessed 20 February 2017. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/1049732305276687?journalCode=qhra

International Trends in Higher Education. 2015. PDF document on University of Oxford website. Accessed 2 March 2017. Retrieved from https://www.ox.ac.uk/sites/files/oxford/International%20Trends%20in%20Higher%20Education%202015.pdf

Internationalisation of Finnish Education, Research and Innovation. 2009. PDF document on Ministry of Education and Culture website. Accessed on 1 December 2015. Retrieved from http://www.minedu.fi/export/sites/default/OPM/Tiede/tutkimus-_ja_innovaationeuvosto/erillisraportit/liitteet/KVstrategia_Eng.pdf

Javalgi, R., Cutler, B., & Winans, W. 2001. At your service! Does country of origin research apply to services? *Journal of Services marketing, 15*, 565. Accessed on 16 March 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Johanson, J., Wiedersheim-Paul, F. 1975. The internationalisation of the firm. *Journal of Management Studies, 12*, 305-322. Accessed 16 May 2016. Retrieved from Wiley Online Library http://onlinelibrary.wiley.com

Johanson, J., & Vahlne, J. E. 1977. The internationalisation process of the firm - A model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies, 8*, 23-32. Accessed 15 May 2016. Retrieved from http://www.jstor.org/stable/254397

Johanson, J., & Mattsson, L. G. 1988. *Internationalisation in industrial systems – A network approach*. In H. Hood & J. E. Vahlne (Eds.), *Strategies in global competition*, 287-314. London: Croom Helm.

Johanson, J., Vahlne, J. E. 1990. The mechanism of internationalisation. *International Marketing Review, 7*, 11-24. Accessed 16 May 2016. Retrieved from https://www.scribd.com/doc/53233882/The-Mechanism-of-Internationalisation

Jokhio, I., Chalmers, I. 2015. Using Your Logical Powers: Abductive Reasoning for Business Success. *User Experience Magazine, 15*. Accessed 5 February 2017. Retrieved from http://uxpamagazine.org/using-your-logical-powers/

Juntunen, T. 2014. Education export – what does it mean. *UAS Journal, 4*. Accessed on 20 November 2016. Retrieved from UAS Journal Archive https://arkisto.uasjournal.fi/uasjournal_2014-3/juntunen.html

Juntunen, T. 2016. *Means and conditions for growth of education export at Finnish Universities of Applied Sciences*. In Vanhanen R. (Ed.), *Export of Education by Finnish Universities of Applied Sciences: Reflections on best practices.* Jyväskylä University of Applied Sciences. URN:ISBN:978-951-830-437-4, 33-44.

KAMK'24 strategy. 2016. Document on Kajaani University of Applied Sciences website. Accessed 12 December 2016. Retrieved from https://www.kamk.fi/loader.aspx?id=9872591f-0426-4d01-b5ef-a25830466dd2

Kalolo, J. F. 2015. The Drive towards Application of Pragmatic Perspective in Educational Research: Opportunities and Challenges. *Journal of Studies in Education, 5,* 150–171. Accessed 10 February 2017. Retrieved from Macrothink Institute: http://www.macrothink.org/

Kananen, J. 2013. *Design Research as Thesis Research. A practical Guide for Thesis Research*. Suomen Yliopistopaino Oy

Kananen, J., Akpinar, M. 2015. *Gamification of the sales process at a telecommunications company to improve the motivation of the salesforce*. Finnish Business Review. Accessed on 25 March 2017. Retrieved from http://verkkolehdet.jamk.fi/finnish-business-review/files/2015/11/FBR-2015-3.pdf

Katrishen, F., Scordis, N. 1998. Economies of scale in services: a study of multinational insurers. *Journal of International Business Studies, 29*, 305-323. Accessed on 16 March 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Kehm, B., Teichler, U. 2007. Research on Internationalisation in Higher Education. *Journal of Studies in International Education, 11*, 260-273. Accessed on 17 January 2017. Retrieved from http://jsi.sagepub.com/content/11/3-4/260.short?rss=1&ssource=mfc.

Kitinoja, H. 2016. *Kyselytutkimus ammattikorkeakoulujen osaamisen viennin nykytilasta ja haasteista*. [Survey on the current status of education export and related to it challenges at the Universities of Applied Sciences]. Accessed 24 January 2017. Retrieved from SeAMK online magazine http://verkkolehti.seamk.fi/arkisto/2016-marraskuun-verkkolehti/kyselytutkimus-ammattikorkeakoulujen-osaamisen-viennin-nykytilasta-ja-haasteista/

Klemenčič, M. 2015. *Internationalisation of Higher Education in the Peripheries - The "gear effect" of integrated international engagements*. Internationalisation of Higher Education Handbook. Accessed 12 March 2017. Retrieved from http://www.eaie.org/eaie-resources/library/publication/Internationalisation-handbook/internationalisation-higher-education-peripheries.html

Knight, J.1999. *Internationalisation of higher education.* In J. Knight and H. de Wit (Eds.), *Quality and internationalisation in higher education.* Paris: OECD, 13 - 28.

Knight, J. 2002. *Trade in Higher Education Services: The Implications of GATS*. Accessed 10 March 2017. Retrieved from UNESCO http://www.unesco.org/education/studyingabroad/highlights/global_forum/gats_he/jk_trade_he_gats_implications.pdf

Knight, G. A., Cavusgil, S. T. 2004. Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies, 35*, 124-141. Accessed 10 March 2017. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Knight, J. 2008. *Higher Education in Turmoil*. Accessed 1 March 2017. Retrieved from Sense Publishers https://www.sensepublishers.com/media/475-higher-education-in-turmoil.pdf

Knight, J. 2015. *New Rationales Driving Internationalisation*. Open Access Journals at International Higher Education. Accessed 12 March 2017. Retrieved from http://ejournals.bc.edu/ojs/index.php/ihe/article/view/7404

Knight, J. 2015. *Updating the Definition of Internationalisation*. Accessed 14 March 2017. Retrieved from Boston College open access journals https://ejournals.bc.edu/ojs/index.php/ihe/article/viewFile/7391/6588

Kontinen, T., Ojala, A. 2011. Network ties in the international opportunity recognition of family SMEs. *International Business Review, 20*, 440-453. Accessed 19 May 2016. Retrieved from Jyväskylä University Digital Archive https://jyx.jyu.fi/dspace/handle/123456789/27298

Korhonen, P. 2014. *Koulutusviennin lastentaudista – diagnooseja ja reseptiikkaa* [From education export to children disease – diagnoses and recipes]. In A. Airola (Ed.), *Koulutusviennillä kansainvälisille markkinoille* [Education export towards the international markets]. Joensuu: Grano Oy, 30-32.

Kotler, P., Bowen, J.T., & Makens, J.C. 2005. *Marketing for hospitality and tourism*. 4th ed. New Jersey: Pearson Education.

Kotler, P., Armstrong, G., Harris, L. C., & Piercy, N. 2013. *Principles of Marketing*. 6th European Edition. Pearson Education Limited

Koulutusvienti. Kysely oppimisalan yrityksille [Education Export. The questionnaire to educations sector companies]. 2015. PDF document on Tekes website. Accessed 10 March 2017. Retrieved from https://www.tekes.fi/globalassets/global/ohjelmat-ja-palvelut/ohjelmat/oppimisratkaisut/koulutusvientikysely_2015.pdf

Koulutusviennin tiekartta 2016-2019 [Education Export Roadmap 2016-2019]. 2016. Publication on Ministry of Education and Culture website. Accessed 30 March 2016. Retrieved from http://julkaisut.valtioneuvosto.fi/handle/10024/74852

Koulutusvientiselvitys [Education export investigation]. 2012. FCG Finnish Consulting Group, Haaga-Helia Global Education & EduClusterFinland. Accessed 15 December 2016. Retrieved from http://projektit.tredea.fi/@Bin/493187/Koulutusvientiselvitys+Loppuraportti+Final+30+12+2012.pdf

Kuivalainen, O., Sundqvist, S., & Servais, P. 2007. Firms' degree of born-globalness, international entrepreneurial orientation and export performance. *Journal of World Business, 42*, 253-267. Accessed 27 February 2017. Retrieved from ScienceDirect: http://www.sciencedirect.com

Kulins, C., Leonardy, H., & Weber, C. 2016. A configurational approach in business model design. *Journal of Business Research, 69*, 1437-1441. Retrieved from ResearchGate www.researchgate.net

Laanti, R., Gabrielsson, M., & Gabrielsson, P. 2007. The globalization strategies of business-to-business born global firms in the wireless technology industry. *Industrial Marketing Management, 36*, 1104-1117. Accessed 17 May 2016. Retrieved from ResearchGate www.researchgate.net

Lämsä, A., Uusitalo, O. 2012. *Palvelujen markkinointi esimiestyön haasteena*. [Marketing of services as a management challenge]. Helsinki: Edita Publishing Oy.

Lehm, B., Teichlee, U. 2007. Research on Internationalisation in Higher Education. *Journal of Studies in International Education, 11*, 260-273. Accessed 12 March 2017. Retrieved from ResearchGate www.researchgate.net

Leipras, A. 2010. *Determinants of Internationalisation: Differences between Service and Manufacturing SMEs*. Accessed 13 August 2016. Retrieved from ResearchGate https://www.researchgate.net

Lincoln, Y. S., Guba, E. G. 1985. *Naturalistic Inquiry.* CA: Sage Publications Inc.

Loane, S., Bell, J. D., & McNaughton, R. 2007. A cross-national study on the impact of management teams on the rapid internationalisation of small firms. *Journal of World Business, 42*, 489-504. Accessed on 26 February 2017. Retrieved from Science Direct www.sciencedirect.com

Mahadevan, B. 2000. Business Models for Internet-Based E-Commerce: An Anatomy. *California management review, 42*. Accessed 30 November 2016. Retrieved from ResearchGate https://www.researchgate.net

Maakuntasuunnitelma 2035. Maakuntaohjelma 2014-2017 [The Kainuu Regional Plan 2035. The Kainuu Regional Programme 2014-2017]. 2015. PDF document on Kainuu Regional Council website. Accessed 12 March 2017. Retrieved from https://www.kainuunliitto.fi/sites/default/files/kainuu-ohjelma_julkaisupohjalle_03092015.pdf

Malhotra, N., Agarwal, J., & Ulgado, F. 2003. Internationalisation and entry modes: A multitheoretical framework and research propositions. *Journal of International Marketing, 11*, 1-31. Accessed 13 May 2016. Retrieved from Ebsco Business Source Elite: www.ebscohost.com

Margretta, J. 2002. Why Business Models Matter. *Harvard Business Review, 80*, 86-92. Accessed 15 April 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Marianne Huusko a trailblazer in education export. 2016. Page on Ministry of Education and Culture website. Accessed 10 March 2017. Retrieved from http://minedu.fi/en/article/-/asset_publisher/marianne-huusko-koulutusviennin-ladunavaaja

Marinetti, A., Dunn, P. 2002. *Cultural adaptation - A necessity for e-learning*. Accessed 1 April 2016. Retrieved from http://www.linezine.com/7.2/articles/pdamca.htm

Martin, G., Nick, P. 2011. Cross-Border Higher Education, Who Profits? *Journal for Critical Education Policy Studies, 9*, 126-148. Accessed 15 August 2016. Retrieved from Journal for Critical Education Policy Studies http://www.jceps.com/wp-content/uploads/PDFs/09-1-06.pdf

McQuillan, D., Sharkey Scott, P. 2015. *Models of Internationalisation: a business model approach to professional service firm internationalisation*. In C. Baden-Fuller and V. Mangematin (Eds.), *Business Models and Modelling, Advances in Strategic Management*. Accessed 3 June 2016. Retrieved from https://www.cass.city.ac.uk/__data/assets/pdf_file/0014/301712/McQuillan-Scott-FINAL-for-authors-with-citation.pdf

Merriam, S. B. 2016. *Qualitative research: A guide to design and implementation.* 4th Edition. San Francisco, CA: Jossey-Bass.

Meyer, K. E. 2013. What is, and to what purpose do we study, international business? *AIB Insights, 13*, 10-13. Accessed 23 February 2017. Retrieved from Academy of International Business: http://documents.aib.msu.edu/publications/insights/v13n1/v13n1_Article2.pdf

Murray, J. Y., Kotabe, M. 1999. Sourcing strategies of U.S. service companies: a modified transaction-cost analysis. *Strategic Management Journal, 20*, 791-809. Accessed 12 May 2016. Retrieved from Ebsco Business Source Elite: www.ebscohost.com

Mykleburst, J. P., Dobson, I. R. 2015. *Ministers pave way for increased education exports*. University World News. Accessed 10 March 2017. Retrieved from http://www.universityworldnews.com/article.php?story=20151105130437124

Naidoo, R., Jamieson, I. 2005. Empowering participants or corroding learning? Towards a research agenda on the impact of student consumerism in higher education. *Journal of Education Policy, 20*, 267-281. Accessed 10 March 2017. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/02680930500108585?journalCode=tedp20

O'Gorman, K., MacIntosh, R. 2015. *Research Methods for Business and Management*. 2nd Edition. Goodfellow Publishers Ltd

Oblinger, D. 2012. *Education and information technologies*. EDUCAUSE. Accessed 10 March 2017. Retrieved from https://www.educause.edu/~/media/files/library/2012/5/pub7203i-pdf.pdf?la=en

Onetti, A., Zucchella, A., Jones, M. V., & McDougall-Covin, P. P. 2012. Internationalisation, innovation and entrepreneurship: Business models for new technology-based firms. *Journal of Management and Governance, 14*, 337-368. Accessed 10 January 2017. Retrieved from ResearchGate https://www.researchgate.net

Osterwalder, A. 2005. *What is a business model?* Accessed 25 May 2016. Retrieved from Business Model Alchemist http://businessmodelalchemist.com/blog/2005/11/what-is-business-model.html

Osterwalder, A., Pigneur, Y. 2010. *Business Model Generation*. John Wiley & Sons Inc.

Pananond, P. 2010. *Emerging multinationals and global value chain analysis: A preliminary evidence from Thailand*. 2nd Copenhagen Conference on 'Emerging Multinationals: Outward Investment from Emerging and Developing Economies' 25-26 November 2010. Accessed 17 May 2016. Retrieved from http://gdex.dk/ofdi10/Pavida%20Pananond%20-%20ThaiMultinationals_Copenhagen2010.pdf

Parkhe, A., Wasserman, S., & Ralston, D. 2006. New frontiers in network theory development. *Academy of Management Review, 31*, 560-568. Accessed 16 May 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Patton, M. Q. 2002. *Qualitative Research & Evaluation Methods*. 3rd Edition. CA: Sage Publications Inc.

Patton, M.Q. 1999. Enhancing the quality and credibility of qualitative analysis. *Health Sciences Research, 34*, 1189–1208. Accessed 20 February 2017. Retrieved from Ebsco Academic Source Elite www.ebscohost.com

Piiroinen, K. 2015. *Current issues in the internationalisation of Higher Education Institutions*. In R. Vanhanen, H. Kitinoja, M. Pääskylä (Eds.), *Exploring the Impact and Full Potential of International Education. Questions of competitiveness, employment and integration*. Suomen Yliopistopaino Oy, 24-29.

Pla-Barber, J., Ghauri, P. N. 2012. Internationalisation of service industry firms: understanding distinctive characteristics. *Service Industries Journal, 32*, 1007-1010. Accessed 1 September 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Porter, M.E. 1985. *Competitive Advantage*. New York: Free Press

Porter, M.E. 1996. What is Strategy? *Harvard Business Review, 74*, 61-78. Accessed 2 June 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Pyykkö, R. 2015. *Quality enhancement of international degree programmes*. In R. Vanhanen, H. Kitinoja, M. Pääskylä (Eds.), *Exploring the Impact and Full Potential of International Education. Questions of competitiveness, employment and integration*. Suomen Yliopistopaino Oy, 30-39.

Quinton, S., Smallbone, T. 2006. *Postgraduate Research in Business.* London: SAGE Publications Ltd

Rauter, R., Jonker, J., & Baumgartner, R. 2017. Going one's own way: drivers in developing business models for sustainability. *Journal of Cleaner Production, 140*, 144-154. Accessed 15 February 2017. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Rask, M. 2014. Internationalization through business model innovation: In search of relevant design dimensions and elements. *Journal of International Entrepreneurship, 12,* 146-161. Accessed 5 April 2017. Retrieved from ResearchGate www.researchgate.net

Riccio, K. 2017. *Data centres Scrambling to Fill IT Skills Gap*. Accessed 5 March 2017. Retrieved from Data centre Knowledge http://www.datacenterknowledge.com/archives/2017/02/07/data-centers-scrambling-fill-skills-gap/

Rugman, A. M. 1985. Internalization is still a general theory of foreign direct investment. *Review of World Economics, 121*, 570-575. Accessed 21 May 2016. Retrieved from http://link.springer.com/article/10.1007/BF02708194

Saldana, J., Leavy, P. 2011. *Fundamentals of Qualitative Research*. Oxford University Press

Satyaprasad, B.G. Krishnaswami, O.R. 2010. *Business Research Methods*. Himalaya Publishing House

Saunders, M., Lewis, P., Thornhill, A. 2009. *Research Methods for Business Students*. Prentice Hall 2009. 5th Edition.

Saunders, M., Tosey, P. 2013. The Layers of Research Design. *Rapport, Winter 2012/2013*, 58-59. Accessed 11 February 2017. Retrieved from https://anlp.org/files/research-onion-layers_42_357.pdf

Seddon, P. B., Lewis, G. P., 2003. *Strategy and Business Models: What's the Difference?* 7th Pacific Asia Conference on Information Systems, 10-13 July 2003, Adelaide, South Australia. Accessed 11 January 2017. Retrieved from ResearchGate https://www.researchgate.net

Seggie, S. H. 2012. Transaction cost economics in international marketing: A review and suggestions for the future. *Journal of International Marketing, 20*, 49-71. Accessed 13 May 2016. Retrieved from Ebsco Business Source Elite: www.ebscohost.com

Sepulveda, F., Gabrielsson, M. 2013. Network development and firm growth: A resource-based study of B2B Born Globals. *Industrial Marketing Management, 42*, 792-804. Accessed 28 February 2017. Retrieved from ResearchGate https://www.researchgate.net

Sharma, D. D., Johanson, J. 1987. Technical Consultancy in Internationalisation. *International Marketing Review, 4*, 20-29. Accessed 12 March 2017. Retrieved from ResearchGate www.researchgate.net

Shavelson, J. R., Phillips, D. C., Towne, L., & Feuer, M. J. 2003. On the Science of Education Design Studies. *Education Researcher, 32*, 25 – 28. Retrieved from ResearchGate https://www.researchgate.net

Shenton, A. K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*, 63-75. Accessed 24 February 2017. Retrieved from Ebsco Academic Search Elite www.ebscohost.com

Siikanen, R. 2014. *Koulutusviennin tila Suomessa ja maailmalla* [The status of education export in Finland and in the world]. In A. Airola (Ed.), *Koulutusviennillä kansainvälisille markkinoille* [Education export towards the international markets]. Joensuu: Grano Oy, 19-25.

Simmering, M. J. 2016. *Service Industry*. Accessed 5 May 2016. Retrieved from http://www.referenceforbusiness.com/management/Sc-Str/Service-Industry.html

Singh, S. 2016. Impact and Effectiveness of Corporate Training Programs through Industry – Academia Tie-Ups. *Journal of Commerce & Management Thought, 7*, 309-319. Ebsco Business Source Elite www.ebscohost.com

Söderqvist, M. 2002. *Internationalisation and its management at higher-education institutions. Applying conceptual, content and discourse analysis*. Helsinki School of Economics and Business Administration. HSE Print 2007.

Spillett, M. A. 2003. Peer Debriefing: Who, What, When, Why, How. *Academic Exchange Quarterly, 7*. Accessed 26 February 2017. Retrieved from Questia online library: https://www.questia.com/

Stewart, D. W., Zhao, Q. 2000. Internet marketing, business models and public policy. *Journal of Public Policy & Marketing, 19*, 287-296. Accessed 20 April 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Suhonen, M., Wickström, J. 2016. *Greetings from Brazil*. In R. Vanhanen (Ed.), *Export of Education by Finnish Universities of Applied Sciences: Reflections on best practices.* Jyväskylä University of Applied Sciences. URN:ISBN:978-951-830-437-4, 137-140.

Sydow, J., Windeler, A., Wirth, C., & Staber, U. 2010. Foreign market entry as network entry: A relational-structuration perspective on internationalisation in television content production. *Scandinavian Journal of Management, 26*, 13-24. Accessed 18 May 2016. Retrieved from ResearchGate www.researchgate.net

Tashakkori, A., Teddlie, C. 1998. *Mixed Methodology: Combining Qualitative and Quantitative Approaches.* Thousand Oaks, CA: Sage.

Tavlaki, E., Loukis, E. 2005. *Business Model: a theoretical concept or a necessary business tool?* Proceedings of The Fifth International Network Conference 2005, 333-341. Accessed 25 March 2016. Retrieved from www.books.google.fi

Terpstra V., Yu C., 1988. Determinants of foreign investments of US advertising agencies. *Journal of International Business Studies, 19*. Accessed on 15 March 2016. Retrieved from Ebsco Business Source Elite www.ebscohost.com

Tuomi, J. Sarajärvi, A. 2009. *Laadullinen tutkimus ja sisällönanalyysi* [Qualitative research and content analysis]. Helsinki: Kustannusosakeyhtiö Tammi

Vargo, S. L., Maglio, P. P., & Akaka, M. A. 2008. On value and value co-creation: a service systems and service logic perspective. *European Management Journal, 26*, 145-152. Accessed 20 January 2017. Retrieved from ScienceDirect http://www.sciencedirect.com/science/article/pii/S026323730800042X

Vision for higher education and research in Finland 2030. 2017. Publication on Ministry of Education and Culture website. Accessed 7 March 2017. Retrieved from http://minedu.fi/en/article/-/asset_publisher/suomen-korkeakoulutukselle-ja-tutkimukselle-visio-2030

Vyshnyk, O. 2016. *The Driving Forces of Corporate Training in Europe*. Accessed 11 March 2017. Retrieved from Content Raven http://blog.contentraven.com/learning/the-driving-forces-of-corporate-training-in-europe

Wächter B. 2004. *Higher Education in a Changing Environment. Internationalisation of Higher Education Policy in Europe*. Accessed on 1 December 2015. Retrieved from http://www.aca-secretariat.be/fileadmin/aca_docs/images/members/2004_Higher_Education_in_a_Changing_Environment.pdf

Warner, M. 2016. *Deciphering the data centre challenge*. Accessed 10 April 2016. Retrieved from ItProPortal http://www.itproportal.com/2016/03/30/deciphering-the-data-centre-challenge/

Welch, L. S., Benito, G. R. G., & Petersen, B. 2007. *Foreign Operation Methods: Theory, Analysis, Strategy*. Edward Elgar Publishing Limited.

What's driving the corporate training market in Europe? 2016. Page on Technavio website. Accessed 4 March 2017. Retrieved from

http://www.technavio.com/blog/what%E2%80%99s-driving-corporate-training-market-europe

William, C. 2006. *How are services being internationalised?* 7th OECD International trade statistics expert meeting ITS and OECD-EUROSTAT meeting of experts in trade-in-services statistics (TIS). Accessed 15 March 2017. Retrieved from OECD: http://www.oecd.org/std/its/37350973.pdf

Yhteistyössä maailman parasta. Korkeakoulutuksen ja tutkimuksen kansainvälisyyden edistämisen linjaukset 2017-2025. [Working together for the world's best education. Policies on promoting internationality in higher education and research 2017-2025]. 2017. Publication on Ministry of Education and Culture webpage. Accessed 16 March 2017. Retrieved from http://julkaisut.valtioneuvosto.fi/handle/10024/79438

Zain, M., Ng, S. I. 2006. The impacts of network relationships on SMEs' internationalisation process. *Thunderbird International Business Review, 48*, 183-205. Accessed 20 May 2016. Retrieved from ResearchGate www.researchgate.net

Zott, C., Amit, R., & Massa, L. 2011. The Business Model: Recent Developments and Future Research. *Journal of Management, 37*, 1019-1042. Accessed 21 May 2016. Retrieved from ResearchGate www.researchgate.net

Appendices

Appendix 1.   List of questions for each interview targets

Theme (Business Model Element)	Prompting Question	Interview Target			Derived from interview answers
		Data Center Industry Experts	Data Center Industry Workers (Prospective customers)	KAMK Consortium (Inc. DIGITICE, Aikopa, CSC)	
Customer Segments	Who needs broad level training on IT and Facilities Management?	X	X		
	In what countries is such training needed?	X	X		
Value Proposition	Does a DC skills gap exist?	X	X		
	Are there enough skilled workers with overall IT and Facilities Management knowledge to fill open roles (in your company)?	X	X		
	How would a deeper understanding of both IT and Facilities Management in your staff benefit your company, if at all?		x		
	What would be the most valuable aspects of such a training service that your company is willing to pay for?		X		
	How could this training be made better than existing training services?	X	X		
	Would ECTS credits (towards Master's degree) be perceived as valuable?	X	X		
	Can the training be delivered in English?	X	X		
Channels	Would customers prefer online training, face-to-face/site visits, or both?	X	X		
	What channels would work best to promote this training service to potential customers?	X	X	X	
	Should a partner channel be used to deliver e-learning content?			X	
Customer relationships	What aspects of the training could be self-service or automated?			X	
	How can the service utilise communities to facilitate connections between customers and/or between customers and the organiser?	X		X	
Revenue Streams	Should customers pay per full course, per module or ongoing monthly subscription?		X	X	
	Can a freemium model be adopted to give limited services for free, with additional services costing a fee?			X	
Key Resources	What physical resources/buildings/locations will be required to deliver face-to-face training?			X	
	What intellectual resources will be required to deliver the training service? E.g. Copyrighted materials for teaching, partner e-learning systems, databases of potential customers)			X	
	What human resources will be required to create materials, manage e-learning systems, deliver face-to-face training, manage customer bookings and manage customer relationships?			X	
Key Partners	What partners will be needed to create the content? (strategic alliance)			X	
	What partners will be needed to deliver the content? (strategic alliance)			X	
	What professional accreditation body would be a suitable partner? (strategic alliance)	X		X	
	What partnerships could be valuable in delivering this training service?	X			
	Should a partner channel be used to deliver e-learning content (e.g. Teachable.com, alison.com)			X	
Cost Structure	What costs will be incurred according to the identified Key Resources, Key Activities & Key Partnerships?				X
	Which key activities are most expensive?				X
	Which Key resources are most expensive?				X
Key Activities	What production activities will be required to deliver the value proposition?				X
	What production activities will be required to reach the identified Customer Segments?				X
	What problem solving activities will be required to earn Revenues?				X
	What problem solving activities will be required to maintain Customer Relationships?				X

Appendix 2.   Description of the initial training service included in the interview guide

Aim of the research (Master's thesis): to create a business model for the internationalisation of a Finnish corporate training service for the European data centre industry.

Brief background info

In the short period of time that the data centre industry has existed we have seen many different components merge to become one unit - the data centre. Data centres have become similar to industrial units with high requirements for energy consumption, usability, security and delivery of services 24/7 all around the world in milliseconds. The skills requirements of employees to run these large service units have increased, most significantly between **environment**, **utilities**, **facilities**, **connectivity** and **IT**.
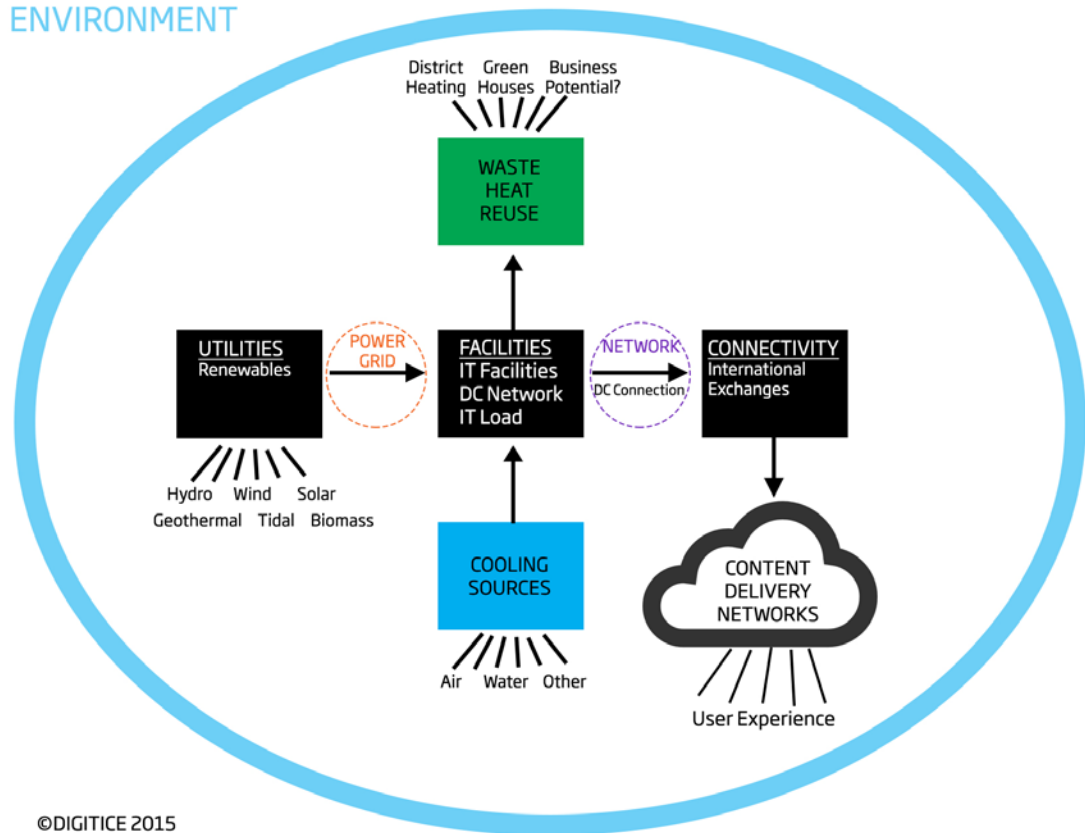
Figure 1. Pilot training focus areas (2014-2015)

Pilot project 2014 -2015: Professional data centre training in Finland

Suitable for Finnish-speaking data centre Facilities Management and IT staff holding a Bachelor Degree or vocational qualification in a relevant field.

Duration of the training: 1 year, 30 ECTS study points (equates to approx. 405 hrs), which can be credited towards a Master's degree (represents approx. 1/3 of a Masters degree). Training includes online studies, 15 contact teaching days (includes company and data centre site visits).

A consortium of companies in Finland (including the DIGITCE cluster, Kajaani University of Applied Sciences and Adult and Continuing Education AIKOPA) worked together with major data centre players to create this Eco-efficient Data Centre training service to address the knowledge gaps identified. It provides a multidisciplinary overview of eco-efficient data centre design, construction and operation. Contributors included EMC, Hewlett Packard, CSC, Granlund, Rittal, Coromatic, Eaton and Herman IT. The training was so well received that it was nominated for an award at the 2014 International Data Centre and Cloud Awards in London.

Interview details: The interview can be conducted over Skype, Google Hangouts or phone. Please confirm which method suits you best and I will send an Outlook invitation with a link to connect.

Interview duration: Ideal interview duration time is 60 – 90 min; the number of questions can be adjusted depending on the available time.

Interview questions: Please find attached as a separate file. The format of the interview is semi-structured and the questions are used to initiate a discussion on specific topics relevant to the research.

Data protection and confidentiality: The interviews will be recorded for transcription purposes only. Contact information and interview records will be handled with care and will only be used in connection with this study. In the thesis, interviewees will be refered to as "Industry expert 1", "Prospective Customer 1" or "Original Consortium 1" etc.

Appendix 3.   Table of coded and themed data

Theme (Business Model Element)	Code	Industry Expert 1	Industry Expert 2	Industry Expert 3	Industry Expert 4	Industry Expert 5	Prospective Customer 1	Prospective Customer 2	Prospective Customer 3	Prospective Customer 4	Prospective Customer 5	Prospective Customer 6	Original Consortium 1	Original Consortium 2	Original Consortium 3	Total
Customer Segments	Europe	x	x	x	x	x				x						6
	Remote Locations	x	x	x												3
	Retiring staff	x	x	x												3
	UK	x	x	x												3
	Enterprises	x		x		x										3
	IT Staff	x	x	x		x										4
	Facilities Staff				x											1
	Netherlands						x		x							2
	Management		x						x							2
	Germany									x						1
	Belgium		x													1
	Sweden										x					1
	Hungary							x								1
Value Proposition	Skills gap in DC Industry	x	x	x	x	x	x	x	x	x	x					10
	Laboratory	x	x	x	x		x		x	x	x					6
	IT Training	x	x		x	x	x	x		x						5
	ECTS Credits	x	x		x	x				x						5
	English	x	x			x	x	x		x						4
	Facilities Training	x	x		x	x				x	x					4
	Sustainability Training	x	x		x	x			x	x	x					4
	Business Training				x	x	x		x	x						4
	Efficiency Training		x		x	x					x					3
	Industry Experts							x								1
Channels	On-site Training in Finland		x	x	x	x	x	x		x	x					8
	LinkedIn Groups		x	x	x	x	x		x	x	x					6
	Industry Events		x		x	x				x	x				x	7
	E-learning		x		x	x				x	x					5
	Recruitment Specialists	x	x		x	x				x	x					5
	HR Departments	x				x				x	x					3
	Management Level						x			x	x					3
	LinkedIn Advertising					x				x	x				x	3
	Twitter					x							x			2
	Partner Networks					x								x		2
	Staff Incentives					x	x									2
	Original Consortium														x	1

Theme (Business Model Element)	Code	Industry Expert 1	Industry Expert 2	Industry Expert 3	Industry Expert 4	Industry Expert 5	Prospective Customer 1	Prospective Customer 2	Prospective Customer 3	Prospective Customer 4	Prospective Customer 5	Prospective Customer 6	Original Consortium 1	Original Consortium 2	Original Consortium 3	
Customer relationships	LinkedIn Groups					x				x	x		x	x	x	6
	Dedicated App		x			x					x				x	4
	Slack		x			x				x						3
	E-learning Automation					x							x		x	3
	Registration												x	x	x	3
	Logistics Automation												x	x	x	3
	LinkedIn Registration												x	x	x	3
	Web Chat												x	x	x	3
Revenue Streams	Per Module		x			x				x	x		x	x	x	7
	Whole Course					x				x	x		x	x	x	6
	Freemium					x				x			x	x	x	5
	Competitive Offering	x		x					x							3
Key Resources	Seminar hall											x	x		x	3
	Classrooms											x	x		x	3
	Laboratory											x	x		x	3
	Partner Training Sites												x	x	x	3
	University Tutors												x	x	x	3
	Own Materials												x	x	x	3
	Customer Service Staff												x	x	x	3
	Admin Staff												x	x	x	3
	Partner Materials												x	x	x	3
	Industry Guest Tutors		x													1
	Pedagogical Staff														x	1
Key Partners	International Universities				x				x	x	x		x			5
	E-learning Platform					x					x		x		x	4
	Own Accreditation	x				x							x			3
	The Green Grid	x				x				x						3
	Government Input	x				x										2
	Uptime Institute					x			x							2
	Multiple Vendors							x						x		2
	Operator Site Visits												x			1
	Investors	x														1
	Data Center Alliance						x									1
	Software Vendors													x		1
	Finnish Data Center Forum													x		1