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Embracing change: Identifying business opportunities

for a technology training organization

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PREFACE

I have had the pleasure to work in the area of hi-tech business where the only constant is change. As human beings, it's natural to be intimidated of change. However the world around us is changing, the only decision we can make is that do we resist the change or try to embrace it and make the most out of it – both as individuals and as organizations. I've always been fascinated by disruptive innovations and technology gizmos. Being able to pick a research subject where I could take a look at what's coming up next felt intriguing.

Writing a thesis about future technology and business trends poses a couple of fundamental challenges. By definition, as trends contain a degree of uncertainty, the main challenge of the research turned out to be balancing on the tightrope between cloud castles of unrealistic visionarism and a fuzzy comfort blanket of mainstream. Predicting the future is impossible, but luckily there are weak signals to be analyzed and formulated in a structured way. Second, analyzing overlapping meta-trends required a lot of effort and careful structuring.

To overcome these challenges, I would first and foremost like to thank Dr. Thomas Rohweder who has always been there to support me. We had a ton of fascinating discussions about how to tackle the research challenges and what would be the best way to analyze abstract and uncertain phenomena. Finally I want to thank my family, friends, and my girlfriend for all the love and support before and during this process. You know who you are. I couldn't have done this without you.

Janne Uggeldahl

Helsinki, 12 April 2016

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<p>This Master's thesis focuses on identifying new business opportunities for a technology training organization on a concept / framework level. The grounded and researched suggestions are based on the organization's core competences as well as key business and technology trends affecting the organization's business environment. Based on the synthesis of existing knowledge and data from researchers on key business and technology trends, the target was to identify potential areas of disruption and suggest capitalization opportunities for the case company.</p> <p>The conceptual framework of this study focused on the tools for analyzing company core competencies as well as identifying relevant technology trends and changes. Both qualitative and quantitative research methodology was used in this study. Qualitative data was used to analyze the case company core competences. Qualitative and quantitative data was used to analyze key trends and changes affecting the company business environment.</p> <p>Identifying changes and trends affecting the company business environment will help the company to create new training products and to grow their existing customer base. The business opportunity suggestions will help the company key stakeholders in making the most profitable decisions concerning the future course of the organization. Based on the results of this study, it would be advisable for the stakeholders and managers to build on the selected business opportunities and pay special attention to the highlighted technology trends in order to capitalize on these business opportunities in the near future. Last, new research questions are proposed based on the outcomes of this study.</p>	
Keywords	Business opportunities, core competencies, change management, disruption, trends, weak signals

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Acronyms

3GPP	the 3 rd Generation Partnership Project
ACA	Patient Protection and Affordable Care Act signed by President Barack Obama on March 23, 2010
B2B	Business-to-business
CC	Core Competence
CF	Conceptual Framework
Cloud, the	Cloud computing and storage solutions
CSF	Critical Success Factor
CVP	Customer Value Proposition
E-learning	Electronic Educational Learning
Freemium	Pricing strategy by which a product or service is provided free of charge, but money (premium) is charged for proprietary features
Generation Y	People born roughly between early 1980s to the early 2000s
ILT	Instructor-Led Training
IT	Information Technology
MEMS	Microelectromechanical systems
SBU	Strategic Business Unit
SMBs	Small and Medium Sized Businesses
Phablet	Mobile device, which combines the form of a phone and tablet
PO	Product Offering
VILT	Virtual Instructor-Led Training
XaaS	Anything treated as a service, e.g. SaaS (Software as a service)

1 Introduction

"Disruptive technologies can change the game for businesses, creating entirely new products and services, as well as shifting pools of value between producers or from producers to consumers."

(Manyika et al. 2013)

As change is inevitable, an organization must decide if they want it to happen abruptly, in chaos, or with foresight, in a calm and contained manner (Hamel and Prahalad 1994). Consequently, any vision that is not based on deep insights into macro trends affecting the organization's operational environment, is likely to be unreal or imaginative (Hamel and Prahalad 1994). Before analyzing trends, it's vital to pinpoint the organization's core competencies as they are the foundation of strategy and new business development (Hamel and Prahalad 1990). Additionally, creating business processes so robust and flexible that the same set can serve many different businesses might be the key for the ultimate form of growth (Stalk et al. 1992).

Therefore, the purpose of this thesis is to tackle the challenge of finding new business opportunities beyond the current scope and to broaden the customer base of the case company. The structure of the research is first to identify company core competences, then to analyze changes and trends in the company business environment and based on the above, find new business opportunities.

1.1 Case company and business context

The case company of this thesis is a technology training service organization operating in several countries. The case company has a long track record in delivering technical learning solutions from single projects to ongoing outsourcing partnerships. The company is focused on business-to-business (B2B) transactions.

Product offering of the organization includes classroom and virtual training sessions, training consulting, and training materials. As cloud-based video streaming is becoming increasingly popular, a key part of the company's offering consists of instructional video

creation. By creating trainings videos served from the cloud, customers can reach huge global target audiences effortlessly. Training offerings range from technology theory topics to client products. Typical target groups include engineers, managers, sales and support personnel. Figure 1 illustrates the current key product offering (PO) of the company:

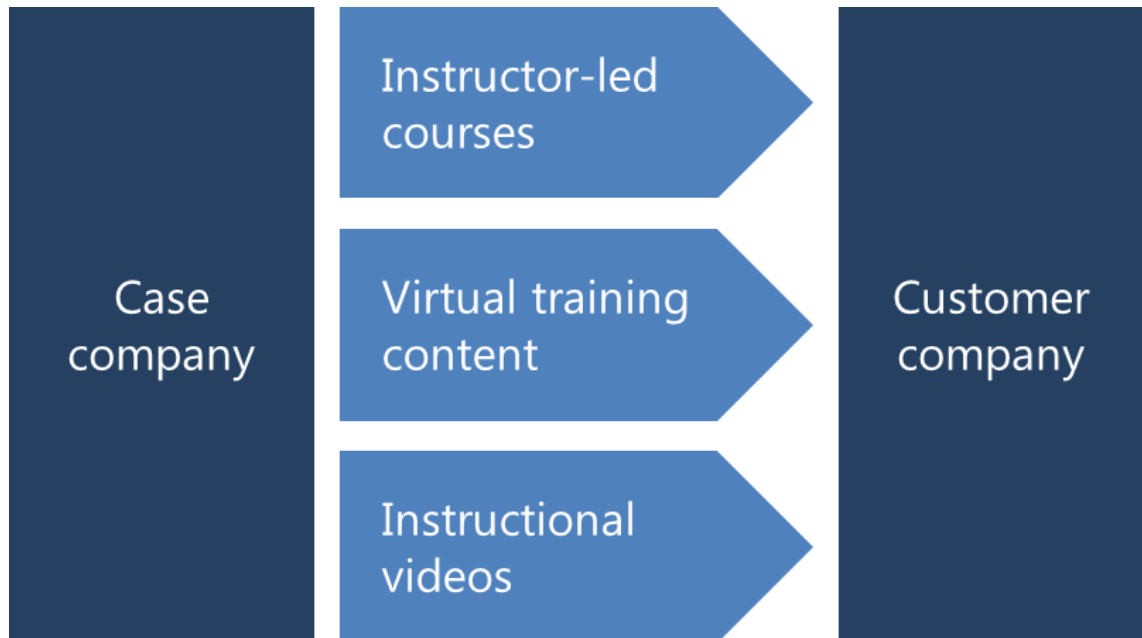


Figure 1. Case company key product offering

Case company customers include manufacturers of consumer electronics and mobile phones, software and systems vendors and mobile network operators. In essence, the case company creates value for its customer companies by training the customer personnel increasing their expertise and competence. As technology-driven companies are becoming increasingly common, acquiring this type of effective, high-quality technology learning is key. This way, customer companies can gain competitive advantage in their own markets. Moreover, when a large organization launches a product, they typically have several interest groups which have to be trained before a product can be launched globally. These groups include sales representatives, customer care personnel, repair staff and so on. As a result, effective staff training is a prerequisite in most cases for a successful product launch.

1.2 Objective, output, and scope of the study

Objective of the thesis is to identify trends and changes in the operating environment of the case company and based on these, propose new business opportunities. It aims to help the case company to identify key changes in their operating environment and to embrace the changes in a structured and analytical manner. The intended outcome of this thesis is grounded and researched suggestions concerning new business opportunities on a concept / frame level. Key stakeholders will then provide feedback on the selected opportunities. After the feedback round, the most interesting and relevant opportunity will get further examination. The concept can then be developed further by the company key stakeholders and managers to potentially expand their business. Finally, next steps and further research suggestions are discussed in the last chapter of this thesis.

The study is written in eight sections. The first introductory section provides basic information about the case company and the business context where the company operates in. Section 2 introduces the research design structure and describes the data collection points as well as the analysis approach in more detail. Section 3 examines relevant literature for existing knowledge about core competences, strategic planning, and analyzing relevant technology trends. The output of section 3 are the conceptual frameworks used in the next two sections. Section 4 includes the first data point of the thesis as company core competences are analyzed based on the section 3 framework. Section 5 contains analysis about key trends and changes affecting the case company business environment based on the second framework formed in section 3. Section 6 discusses the new business opportunities based on the findings from the previous sections. Section 7 includes feedback gathered from key stakeholders based on the suggested opportunities. Section 8 contains a wrap-up and conclusions about the research project as well as next steps concerning future research opportunities on the subject.

2 Research Design

2.1 Key project steps

The research design of this study, illustrated in

Figure 2, contains seven phases, of which five contain practical actions and an outcome. Research utilizes three separate data collection points in order to find new, potential business opportunities for the case company on a framework level.

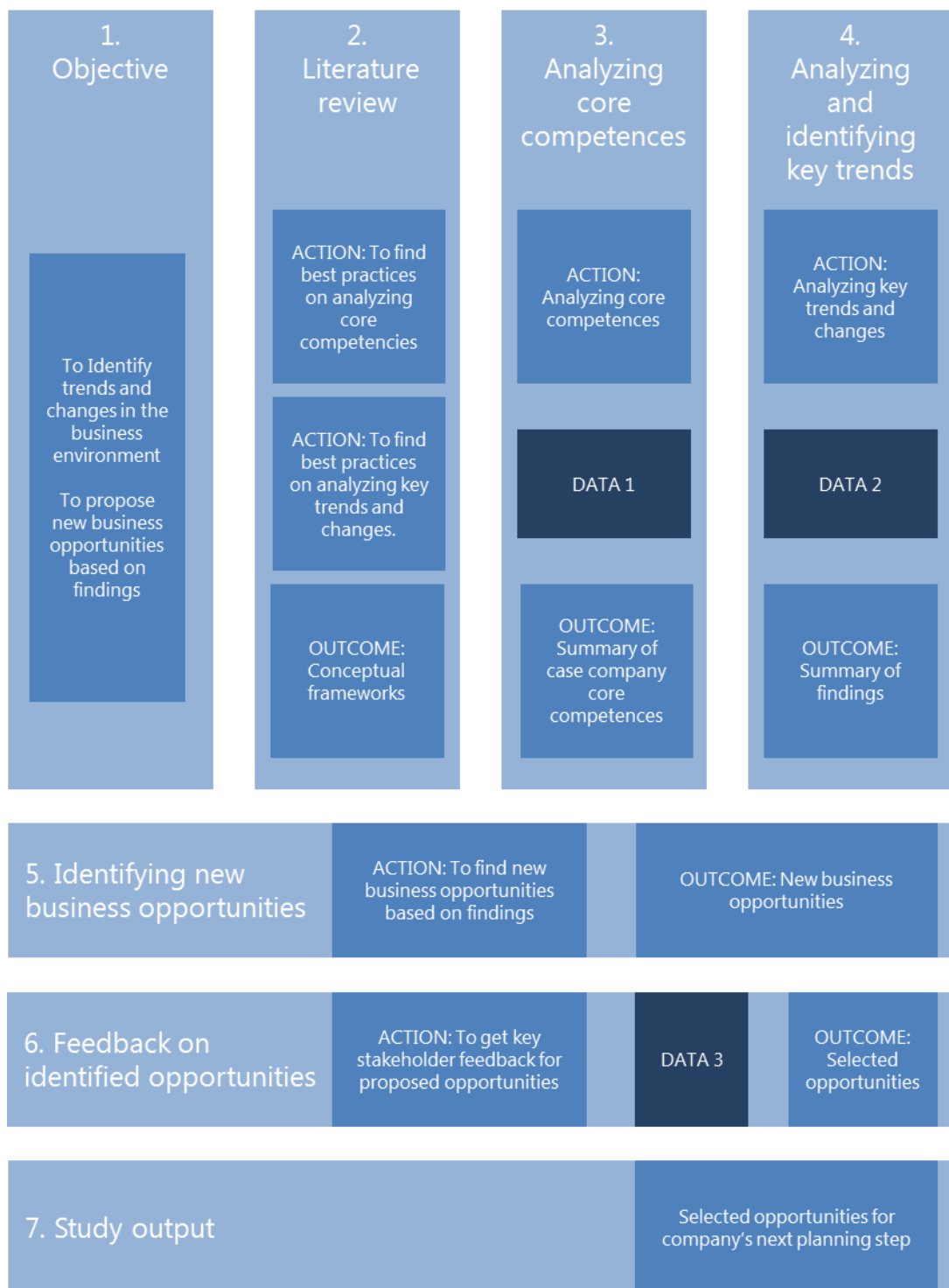


Figure 2. Research design of the thesis

Figure 2 illustrates the research design of the thesis. The first phase formulates the objective for the research. In other words, what the researcher intends to execute. Phase 2 establishes two conceptual frameworks (CF) from relevant literature. The first tool is used in phase 3 to analyze the case company core competences. The outcome of phase 3 is a summary of the case company core competences. The second tool is used in phase 4 to analyze key changes and trends in the case company business environment. The outcome of phase 4 is a summary of key changes and trends relevant for the case company. Based on the outcomes of phase 3 & 4, in phase 5, new business opportunities suitable for the case company are identified. Phase 6 tests the found business opportunities with key stakeholders to find out which opportunity has the most potential. The output of the research will include suggestions on how the case company could benefit from the selected business opportunities and what would the next steps be when creating a product offering based on the opportunities.

2.2 Data collection and analysis approach in more detail

As the objective of the thesis is to find new business opportunities based on company core competences and current technology and business trends, an inductive approach is chosen. The first data stage involves analyzing the case company core competencies according to relevant literature as summarized in the conceptual framework. The data in the first stage consists of case company business context, their typical customers and so on. The output of the first data stage is a summary of case company core competences.

The second data stage involves analyzing the key technology and business trends according to relevant literature summarized in the second conceptual framework. The actual data in this second stage is a collection of business and information technology trends gathered by researchers. As the researcher of this thesis is also an employee of the case company, the trends are picked to be potentially suitable for the case company's training service business. In other words, the set of trends is not picked in an objective or neutral manner. The set of trends is then analyzed with the case company core competences to identify the most suitable and relevant trends on which the new business opportunities could be structured on.

The third data stage consists of gathering feedback on the selected business opportunities from the case company key stakeholders and managers. The feedback is gathered

to get an outside view on the potential of the suggested business opportunities for the case company. Based on the feedback, the final chapter is then written, which includes next steps on how to get the proposed suggestions off the ground and a short review of this research project.

3 Best practices as identified in relevant literature

3.1 Identifying company core competences

Performing external analysis of a company's business environment has been a central theme in strategy literature for decades. These models have adopted two simplifying assumptions. First, these so called environmental models of competitive advantage have assumed that within an industry, organizations are identical in terms of strategically relevant resources they control and strategies they pursue. Second, these models assume that resources are highly mobile, meaning that they can be bought and sold freely in factor markets. In summary, the consensus was that no company could hold a competitive advantage for long periods of time. However the *resource-based view* of competitive advantage has a different angle on the subject. It examines the link between a firm's internal characteristics and performance. Furthermore, the claim is that some resources are unique and neither perfectly imitable nor substitutable without great effort. In short, the argument is that resources may not be perfectly mobile across companies, and thus competitive advantage can be long lasting. (Barney 1991, Collis et al. 1995).

The idea of carefully analyzing company core competences before searching for new business opportunities was first introduced by Prahalad and Hamel, who suggested that "core competencies are the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies" (Hamel and Prahalad 1990). In essence, core competencies are things that companies do very well, their fundamental strengths. The approach of core competences will serve as a base in search of new business opportunities for the case company. Once these core competencies are identified, managers can examine new business opportunities and possibilities of entering new markets.

From resources and capabilities to competencies

The first step in successfully identifying and listing a company's core competencies is to create an understanding of the concepts of core competence, capability and resources. As a starting point, we can use the hierarchy model (Javidan 1998) illustrated in Figure 3.

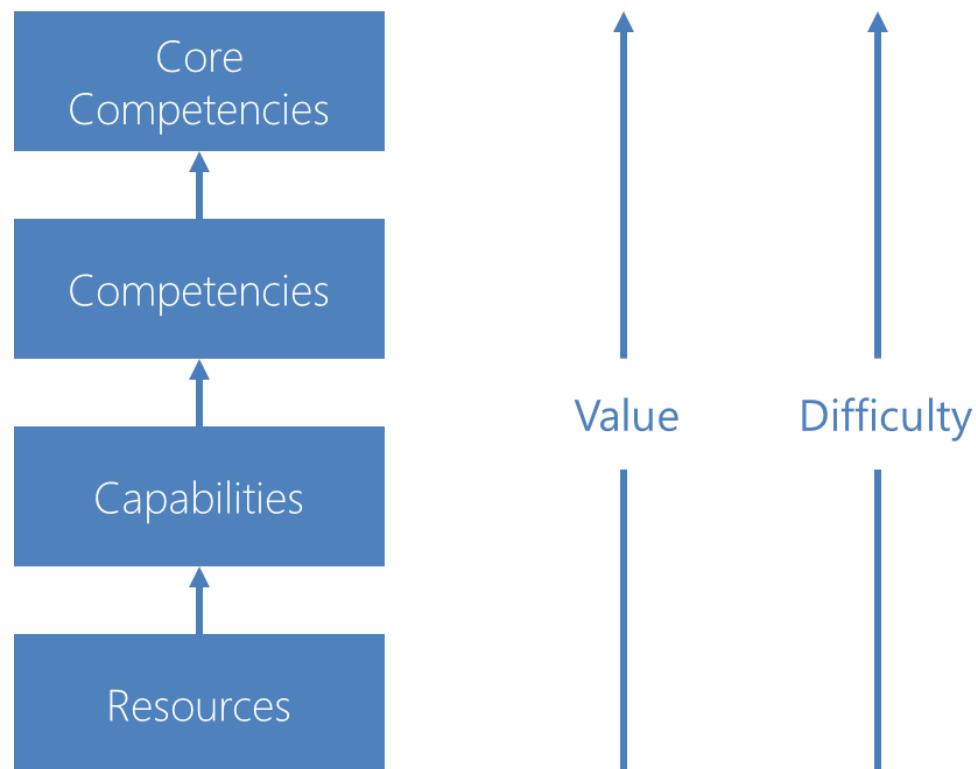


Figure 3. The competencies hierarchy

On the lowest level of this hierarchy are *resources*, which are the building blocks of competencies and the basis of the company's value chain. Each company has various resources and they make use of them in different ways. Resources can be divided into three groups: 1) physical resources, such as raw minerals, equipment and assets; 2) human resources, such as manpower, training and experience; 3) organizational resources, such as culture and reputation. In essence, some resources are tangible such as equipment and others are intangible like the company brand. Resources should also include employee skills, including outsourced assets. This means that resources and assets may be located outside the firm. The definition should include all assets which the company can use in order to achieve its corporate goals. In other words, a resource can be anything tangible or intangible owned or acquired by a company. (Hafeez et al.

2002, Barney 1991). For example a company might outsource activities in which they are not particularly good at or efficient in producing in-house. Such activities are typically office maintenance tasks, such as cleaning, or administrative, such as payroll and tax related tasks.

The second level of the hierarchy is *capabilities*. They determine how the company makes use of their resources. Capabilities are generally separated from resources because of their dynamic “doing” nature. Capabilities usually consist of business processes and routines which are used to exploit the selected resources. In short, capabilities make use of resources to perform some task or activity. (Hafeez et al. 2002, Torkkeli et al. 2002).

Competency, the third level of the model, is the interaction point which combines capabilities and resources. In a multi-business corporation, competencies are a set of skills and knowledge inside a Strategic Business Unit (SBU). For example a particular SBU may have the competency of creating new products. Such a competency might be the result of integrating R&D capabilities, marketing capabilities and production capabilities (Javidan 1998).

Core Competencies, the highest level of the hierarchy, cross SBU boundaries. A core competence is therefore a collection of competencies that are widespread in the corporation across SBUs (Hamel 1994, Torkkeli et al. 2002). Core competencies add the greatest amount of value since they make use of resources and capabilities across the corporation. This is why higher levels in the hierarchy are also more difficult to accomplish (Javidan 1998). Because core competencies are factors that hold together a portfolio of seemingly unrelated businesses, they can be used as a base for diversification strategies. Core competence-based diversification reduces risk and investments and it also increases the opportunities for transferring learning and best practice across business units (Hamel and Prahalad 1994).

It's suggested that core competencies should have three attributes: 1) they are rare in marketplace, 2) they are difficult to be substituted and 3) they are difficult for competitors to imitate. (Barney 1991, Hamel and Prahalad 1990, Hamel 1994). Furthermore, it's suggested that existence of substitutes of a capability threatens to render the capability obsolete because it will no longer create distinctive value to the buyer (Dierickx et al. 1989).

A core competency can be identified by applying three simple tests: 1) is it a significant source of competitive differentiation? 2) Does it transcend a single business? Does it cover a range of businesses, both current and new? 3) Is it hard for competitors to imitate? Miniaturization at Sony, network management at AT&T, and user friendliness at Apple are examples of core competencies (Prahalad 1993). In short, is it hard for someone to visit Ikea and come back and outline why they have perfected their processes worldwide?

Other researchers have since built on this concept and have suggested a list of properties or criteria (Tampoe 1994) which corporate competencies must meet before they can be transformed into core competencies.

- Essential to corporate survival in the short and long term
- Invisible to competitors and difficult to imitate
- Unique to the corporation and few in number
- A mix of skills, resources and processes
- A capability which the organization can sustain over time
- Greater than the competence of an individual
- Essential to the development of core products and eventually to end products
- Essential to the implementation of the strategic vision of the corporation
- Essential to strategic decisions: on diversification downsizing, rationalizing, making alliances and joint ventures and
- Marketable and commercially valuable

Similarly, the following characteristics can be used to score a company's core competences relative to competitors (Schoemaker 1992):

- It evolved slowly through collective learning and information sharing
- Its development cannot be greatly speeded up by doubling investments
- It cannot be easily imitated by or transferred (sold) to other firms
- It confers competitive advantage in the eyes of customers
- It complements other capabilities in a $2 + 2 = 5$ fashion
- Investment in it is largely irreversible; that is, the firm cannot cash it out

As the sub-objective of this thesis is to analyze the skillset of the case company, organization-wide characteristics are therefore out of scope.

Core competences and critical success factors

The identification of core competences must occur in the context of an industry's critical success factors (CSF). CSFs can be described as factors which discriminate winners from losers in the company's industry. Furthermore, CSFs can be viewed as a description of the major skills and resources required to be successful in a given market. In addition, a CSF is defined as a skill or resource that a company can invest in, which explains a major part of the observable differences in perceived value and/or relative costs on the market the company is operating on. In addition, when aiming for a competitive edge over other competitors, it is vital that managers concentrate their efforts on performing a few critical tasks exceedingly well instead of greater number of tasks reasonably well. (Grunert et al. 1992, Prahalad and Hamel 1990, De Vasconcellos et al. 1989). This supports the statement made previously that a company has actually very few true core competences. For example, looking backward, global delivery standards have proven to be a CSF for McDonald's, and effective advertising a CSF for Red Bull. Based on the discussion above, company CSFs and competitive advantages can be gathered which can then be tested against the selected core competence criteria listed earlier.

Core competence identification tool

Based on the structured framework for identifying core competences (Hafeez et al. 2002), a similar tool is created in this sub-chapter. Expanding the uniqueness criteria, a *complementing* criteria is chosen as an addition for this tool. As discussed earlier, if a competence makes other competences of the company more valuable and reinforces them, it should be highlighted by this tool. An example of this type of competence could be the brand management of Apple or efficient processes of Ikea.

Competencies have a tendency to erode over time if they are not nurtured and developed (Schoemaker 1992). That being the case, a criteria labeled *relevance* is introduced. To fulfill this criteria, a competence must not be outdated in the company's business environment today. An example of an eroded competency could be the manufacturing process of Kodak film cameras or Nokia mobile phones. Similarly, if a core competence

creates significant competitive advantage for a company, it's very likely that competitors will react to it. It's important to remember that very few advantages are long lasting because of competitive dynamics (Torkkeli et al. 2002). As a result, a criteria called *durability* is chosen for the tool. This criteria tests if the advantage is likely to withstand pressure from competitors and not erode with time. For example the efficient processes of Ikea could be considered a durable core competency. Combining the criteria discussed above, Figure 4 can be formed:

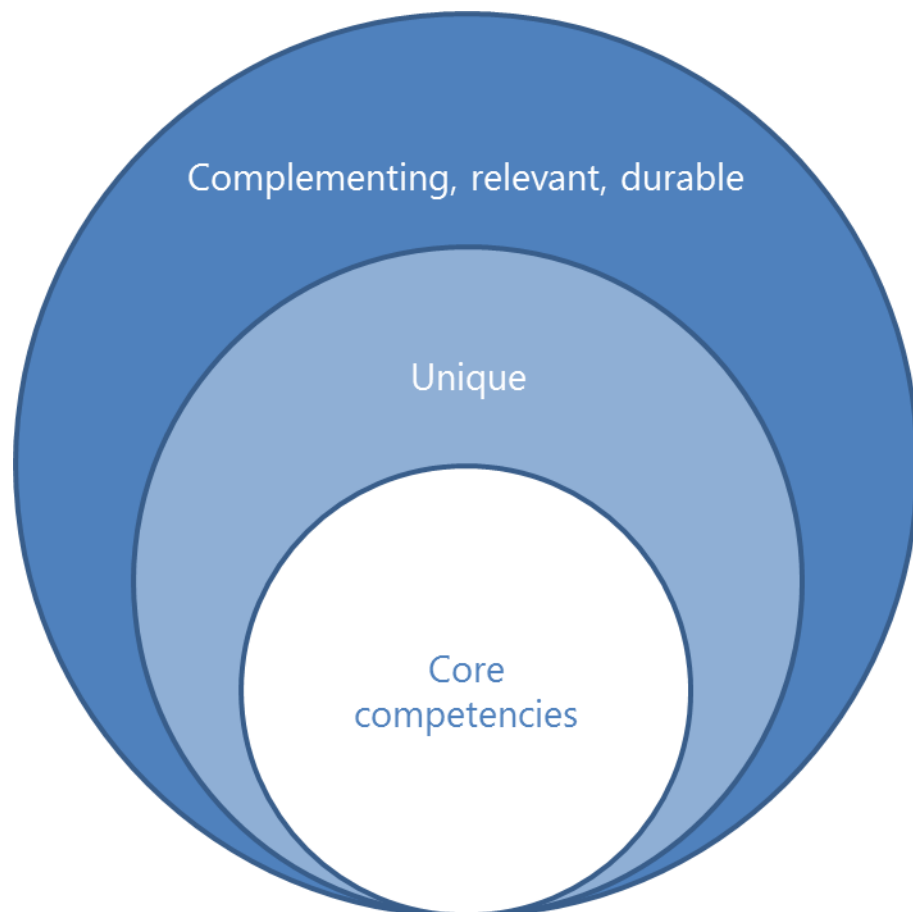


Figure 4. Core competence criteria

Building on this, the next step is to gather characteristics for competitive advantage. Competitive advantage attributes are gathered on the Y-axis for the tool according to relevant literature. The list of attributes, also known as capability differentials, is derived from dominant firms in their respective markets. (Aaker 1989, Hall 1992). In other words, these are examples of general factors that may be the cause of significant competitive advantage for a successful company. As the list is too extensive to be used in the tool as such, some attributes are dropped from it. These include organizational attributes

which are too broad for this case and attributes that do not fit the case company business context.

3.2 Identifying strategic change and key trends

A fundamental misconception concerning business strategies and the stock market is that *forecasters* could predict the future. As Saffo (2007) points out, predictions are possible only in a mythical world where events are preordained and certain to happen. In the real world we live in, events fold in unexpected ways. Therefore a forecaster's task is to dig out pieces of weak information which at first do not seem to make sense or fit into current assumptions, and to identify a range of possibilities for the future. Unlike with predictions, a forecast must have logic to support it. Whether the forecast turns out to be accurate or not, is only part of the picture. Moreover, several pieces of weak information is much more valuable than a point or two of strong information, which happen to support the current theories or opinions. Chiefly, it's vital to take note of contradictory evidence which is quietly stacking up in the background before a larger paradigm shift suddenly takes place. (Petts 1997, Saffo 2007). But what are these tidbits or "weak signals"? Schoemaker et al. (2009) use the following definition:

A seemingly random or disconnected piece of information that at first appears to be background noise but can be recognized as part of a significant pattern by viewing it through a different frame or connecting it with other pieces of information.

Building on the concept of forecasting, a tool commonly used to describe these future possibilities in a more structured way is called *scenario planning*. Scenario planning techniques are considered as powerful tools in the present era, where uncertainty, innovation and change are key characteristics. Scenarios are also defined as alternate company futures resulting from a combination of trends and actions. In forecasting, technology planning, foresight studies, and strategic analysis, scenarios are used to incorporate and highlight those aspects of the world that are vital to the forecast. In essence, scenario planning should capture the possible futures, present a wide range of logical options, encourage thinking about the future and challenge the current mindset. In other words, the objective is to disturb the present thinking of managers and key stakeholders. Therefore it should include options beyond the comfort zone of the company. This encouragement will help to explore new business opportunities and unique insights. Scenario planning is also a good way to question the future and identify the paths leading the company

down the road. Scenarios differ from forecasts in a way that scenarios often present multiple possible outcomes whereas the purpose of forecasts is to determine the most likely pathway and estimate uncertainties. In summary, scenario planning is not about forecasting the most probable outcome, it's about creating a set of plausible futures. (Amer et al. 2013).

To visualize the concept of forecasting and scenario planning, a cone diagram in Figure 5 can be used. The shape of a cone in the figure is used to represent the future development of a company. The cone widens as we move further away from the present state. This means that uncertainty grows as well, which can be illustrated by the diameter of the circle on the right. It is necessary to point out, however, that a circle suggests a limitation that does not exist. In other words, as the future is open, the diameter could be limitless. (Pillkahn 2008, Amer et al. 2013).

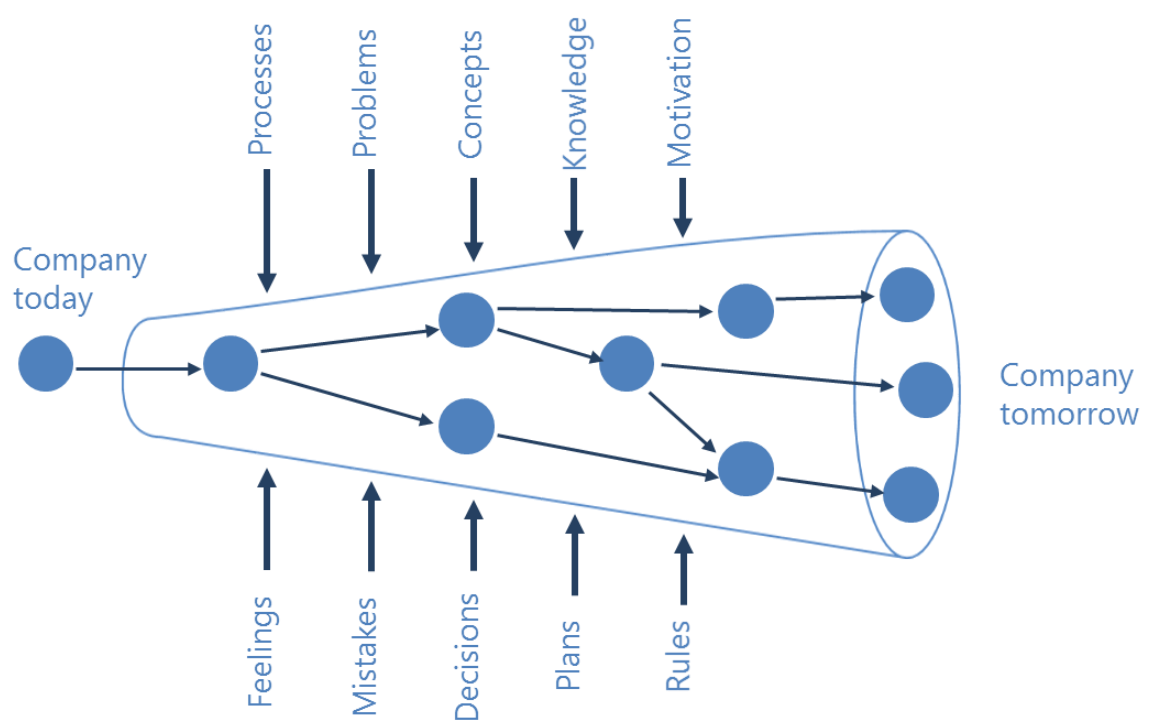


Figure 5. Scenario cone illustrating multiple possible future outcomes

Driving forces and company actions (intentional or accidental), will shape the cone creating paths and possible outcomes for the company tomorrow. Several alternate paths are displayed on the figure. The start and end points naturally cannot be accurately de-

fined, but the cone diagram is an effective way to illustrate the concept of scenario planning. In the context of this thesis, the most interesting part of the diagram are the factors and key trends illustrated by arrows shaping the cone or the future of the case company.

“Being prepared for the future and being in a position to anticipate developments introduces options and possibilities of actively influencing developments.” (Pillkahn 2008). Although there are several possible definitions, the term *trend* in business context is used to describe matters of current taste or types of consumer behavior. In short, where things “seem to be heading”. The definition of a trend always contains a time dimension, a link to the past. Moreover, a trend is always associated with change. Accordingly, a weak signal is considered a prior stage of a trend. Take, for example, the trend of increasing touch displays in smartphones. Who would have thought that in the year 2015, the size of a typical smartphone screen would be around five inches? Apple’s iPhone 4, released in June 2010, had a 3.5” screen. To return to the point about weak signals, the first phablet (large smartphone between a phone and tablet) called Samsung Galaxy Note with a 5.3 inch screen was launched in 2011. Skeptics argued that the device was far too big to serve as a phone on a daily basis. By August 2012, the Note had sold 10 million units worldwide (Cheng 2012). It was a commercial success. In essence, Samsung managed to create new market space by listening to weak signals and other smartphone manufacturers followed swiftly.

In contrast, one must be careful not to assume trends as facts. A common mistake is to draw single events together and claim them as trends without any real insights or knowledge. This highlights the importance of the capacity to question events rashly declared as trends. Proving that a trend exists cannot be done merely by virtue of claiming its existence. Particularly, trends can be described as a result of drivers and forces. These determine the direction and strength of trends. Countertrends also exist, which have a weakening or blocking effect to trends. For example the trend of dietary awareness and fitness lifestyle could be defined as a countertrend to the amount of nightclub visitors or consumption of fast food. (Pillkahn 2008).

A key challenge in this thesis is to identify the technology and business trends that matter from the perspective of the case company. Before taking the case company into account, global trends acknowledged by researchers must be listed in a structured manner. Important trends can emerge from any corner of the scientific field, but they all share certain common attributes. Many trends can eventually create a disruption, but managers need

to concentrate on trends with potential impact “close enough at hand to be meaningfully anticipated and prepared for” (Manyika et al. 2013). The researchers argue that a suitable scope would be that the trends should have significant potential to drive economic impact and disruption by 2025. In order to describe these trends in a well-structured manner, researchers suggest that the following attributes can be used (Manyika et al. 2013):

- Rate or speed of technology improvement
- Scope or range of impact
- Scale of economic value or business potential

To characterize the broad potential of the selected trends, the criteria above can be formulated into Table 1 in a similar way as presented by Manyika et al. (2013):

	Rate or speed of technology improvement	Scope or range of impact	Scale of economic value or business potential
T1			
T2			
T3			
T4			
...			
Tn			

Table 1. Speed, scope, and economic value of trends

The table or tool can then be used to describe the selected trends in a structured way. It also makes the next steps of the trend analysis easier to follow by providing a summary of the characteristics of each technology or business trend.

For this thesis, a set of tools is required to identify and prioritize the most interesting trends affecting the case company business in the future. Researchers suggest that tools like the *issues-priorities matrix* and *cross impact analysis* are effective when analyzing

scenario trends and drivers. It is suggested that the aim of environmental analysis is to detect approaching trends at an early stage to be in the position to create appropriate proactive strategies. (Pillkahn 2008, Amer et al. 2013).

Taking into account the scope of this thesis, cross impact analysis is seemingly too specific as it requires a numerical score to be assigned for each trend. Moreover, cross impact analysis gives an illusion that the effect of each trend could accurately be measured, which is not the case. Therefore the issues-priorities matrix is chosen as a tool for identifying the relevant and probable key trends.

3.3 Conceptual framework

Unlike in the framework by Hafeez et al., a single functional area is chosen for the core competence mapping tool. Accordingly, assessing cross-organization capabilities is out of scope because of the case company size. For simplicity, instead of a four-point scale, a star rating is used where one star (*) = fair match and three stars (***) = excellent match. Drawing together from the competitive advantage discussion above combined with the core competence criteria discussed earlier, a core competence mapping tool in Table 2 can be formed:

COMPETITIVE ADVANTAGE	Uniqueness			Other			Total
	Rareness	Inimitability	Non- substitutability	Comple- menting	Relevance	Durability	
Customer service							
Sales and marketing							
Technical know-how							
Cost efficiency							
Product / service development							
Brand recognition							
Relationship network							
Operative processes							

Table 2. Core competence identification tool

There are six criteria all together which can result in a total maximum score of 18. As discussed earlier on, rating every potential advantage accurately is not in scope of this tool. The main objective is to identify the few core competencies which rise above the rest.

Issues-priorities matrix

A tool called issues-priorities matrix or Wilson matrix ranks all trends against two dimensions: Ease of commercialization and strategic fit with the case company core competencies. Zahra et al. (2002) defines technology commercialization in the following way:

The process of acquiring ideas, augmenting them with complementary knowledge, developing and manufacturing saleable goods, and selling the goods in a market.

The researchers continue and explain that the process above includes the product definition, design, prototyping, and pretesting stages; and is finalized by effective product manufacturing and marketing (Zahra et al. 2002). Ease of commercialization is a key factor for the tool as some trends might be a perfect fit to the case company competencies, but the path to commercialization could be grueling or unrealistic. The researchers recommend that due to the abstract nature of trends, a scale from “low”, “medium”, to “high” is sufficient as illustrated in Table 3. (Pillkahn 2008, Amer et al. 2013).

Ease of commercialization	High	T1, T2, T4	T13, T14	High priority T5, T8
	Medium	T6	Medium priority T9, T11, T12	T7
	Low	Low priority	T3	T10
		Low	Medium	High
Strategic fit with core competencies				

Table 3. Issues-priority matrix

Vice versa, if a more accurate scale would be chosen, it would indicate that technology and business trends are forces which could be accurately measured, which is naturally not the case. The first step in using the tool is to evaluate the business potential of each trend. The second step is to evaluate the strategic fit between the trend and case company core competencies. If the potential is rated as high and the strategic fit as high, then the trend is given the highest priority. In contrast, low priority is assigned to trends which have low business potential and which has a poor strategic fit with the company core competencies. Most trends will probably fit somewhere in between and receive a medium priority. The lower left corner of the tool will illustrate the low priority trends, which do not require further analysis. Also the medium priority trends can be omitted from further analysis. The top right corner which illustrates the high priority trends is the key output of the tool. These trends are analyzed further and selected as a base for potential new business opportunities.

Last, the connection between these business opportunities and actual business models of a company perhaps needs more clarification. Although refining these opportunities into business models is out of scope of this thesis, highlighting the connection is key for further research iterations. The connection can be found by following the definition of the term business model presented by Amit et al. (2001): “A business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities.”

The conceptual framework seeks to address the challenges in identifying business opportunities based on case company strengths and current trends. Figure 6 summarizes the discussion based on existing literature and illustrates the conceptual framework of the thesis:

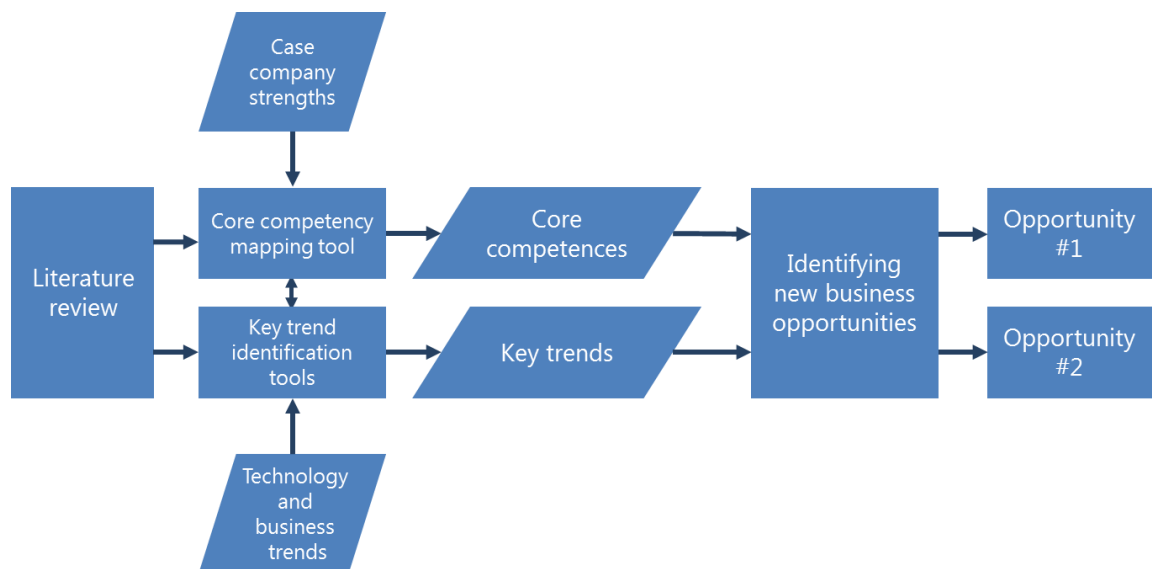


Figure 6. Framework for identifying new business opportunities

The next section describes the current business of the case company and tries to identify the core competencies on which the new business opportunities are then based on.

4 Analyzing company core competences

4.1 Description of case company current business

The case company is a service organization operating in the B2B technology training market. The company is specialized in telecommunication network technologies. Specifically, the case company has a long track record in training topics related to 3rd Generation Partnership Project (3GPP) releases. 3GPP consists of seven major telecommunications standard development organizations, known as organizational partners. In these releases, the 3GPP collaboration defines data transfer standards which are commonly used in mobile phones and by telecommunications operators around the world. The company also delivers trainings on general subjects, such as programming, multimedia creation and operating systems. In essence, the case company current business is focused on delivering high-quality trainings on telecommunication network equipment and related technologies. This type of segmentation and technical know-how helps the case company to differentiate from its competitors and to sustain a competitive advantage compared to non-technical companies, such as marketing and advertising companies.

Training service business requires a trust relationship between the provider and its customers. The customer must be sure that they get value for their investments. This is why it's typical that training courses include a final assessment and a feedback form at the end of the course. Moreover, switching training providers is easy for customers. However when changing providers, it's challenging for customers to be sure about the cost-quality ratio of the new supplier. That being the case, the training market has relatively high barriers to entry, because it's risky for customers to order trainings from unknown or new players. On the other hand, competitors from cheap labor markets, such as India, can pose a threat by competing with price alone. Nevertheless, it's crucial for the case company to maintain strong relationships with their customers.

Product and service development is growing in importance in the training business today. There's an increasing trend of switching from on-site classroom trainings to virtual instructor-led trainings (VILT), e-learning solutions and cloud-based videos. There are several benefits for customers to make the switch. First, ordering a training session in virtual

or video format tends to be less costly than to reserve a classroom, pay for the trainer's expenses to travel on-site and to facilitate the training. Second, VILTs, videos, and other online training packages are easily scalable for larger audiences. They can also be easily localized in many languages for various target groups. On-site trainings are always limited to a small number of participants. In contrast, the interaction between participants and the trainer suffers. This is why customers may still prefer traditional classroom trainings for hands-on type of courses, where the course content includes tasks for the participants to perform.

4.2 Case company strategic strengths

Based on the tool created in Chapter 3 and the discussion about the case company current business, an analysis in Table 4 can be created:

COMPETITIVE ADVANTAGE	Uniqueness			Other			Total
	Rareness	Inimitability	Non-substitutability	Comple- menting	Relevance	Durability	
Customer service	**	***	*	***	***	***	15
Sales and marketing	-	-	-	*	-	-	1
Technical know-how	***	**	***	***	***	**	16
Cost efficiency	-	*	*	*	*	*	5
Product / service development	**	*	**	**	**	*	10
Brand recognition	*	*	-	*	***	***	9
Relationship network	*	**	*	***	***	***	13
Operative processes	*	-	-	**	***	***	8

Table 4. Case company core competence analysis

Based on the results above, there are two competitive advantages which can be considered as company core competences: *customer service* and *technical know-how*.

In the technical training business, *technical know-how* is not only a core competence but a prerequisite of company existence. Before a company can create revenue from trainings, they must have deep underlying know-how of the subject matter. Furthermore, know-how of best training practices, including experience and knowledge on course design, adult education and learning theories is required. Technical know-how is also relatively unique in the market when combined with the power of segmentation, in this case the focus in telecommunications technologies. Competitors could try to react to this advantage by greatly investing in improving their own know-how but that scenario is somewhat unlikely. A more likely scenario is that competitors would try to counter the advantage with aggressive pricing. Strong technical know-how also complements other core competencies making them stronger. Technical know-how has been an advantage for the company in the past and continues to be relevant at least for the near future. Generally, technical know-how can be described as a relatively durable advantage. New players entering the market simply can't acquire the same know-how even if they manage to recruit key personnel from established companies.

As developing a training product requires constant interaction with the customer, the second core competence is most likely *customer service*. Furthermore, customer service is a competence that reaches out across products and SBUs in a training organization. This is typical for most service organizations across markets. Customers have various target groups for trainings and they in turn have various levels of pre-requisite knowledge to build upon. Also the timeframe and type of media (virtual or classroom) used for the training varies. Therefore delivering a training product requires constant, efficient planning and interaction between the supplier and the customer. In essence, if a client receives good service and has built a long lasting relationship with the training supplier, they might not want to risk it by switching suppliers. Moreover, this would create additional costs for the customer as switching training suppliers is time-consuming and requires considerable investments. A more likely scenario is that competitors would try to counter this advantage by aggressive pricing. Thus customer service does not perfectly match the non-substitutability criteria but it is a strongly inimitable asset. In other words, it is not easy for competitors to mimic another company's customer service but a competitor could react to the advantage with other means. According to the nature of customer service, it has been a core competency of the case company in the past and it continues to be relevant in the future. It is also unlikely that this type of core competence

would erode over time. In short, customer service complements other core competencies and it can be treated as a backbone of a service company.

As discussed earlier and as the term suggests, an organization typically has very few strengths that can be counted as core competencies. However, when using the tool, one must be careful not to carelessly filter out potential core competencies. Therefore it's worth taking a look at other advantages which got decent ratings by the tool. In this case, they are *product / service development* and *relationship network*. Both of these have similar characteristics already touched upon in the previous paragraphs, so why are they not described as core competencies?

Product (or service) development could be considered as a strength of the case company, but it probably is not unique enough to be classified as a core competence. When creating virtual trainings and instructional videos, there are software and resources which are easily accessible by all companies working on similar products. In the training service business, the media or tools used is seldom the rare resource. In other words, competitors can easily purchase the same software licenses or hardware which are used to create the products. Therefore the case company core competency is more likely to be technical know-how instead of product / service development. Additionally, development of training products is not a durable advantage unlike for companies working in the manufacturing business. Such core competence could be for example Honda and its reputation for manufacturing high-revving, reliable engines across markets from lawnmowers to motorcycles.

Relationship networks cannot be described as rare resources in the market as most service companies in the field of technical training have prosperous relationships with their suppliers and clients. A company with this core competence could provide their services to the customer organization by an outsourcing contract. The customer organization then integrates the outsourced services as part of their own processes. Historically, the main motivation for outsourcing has been financial savings by accessing lower international labor rates. An organization can get similar benefits by outsourcing a whole department and by concentrating efforts into their own core business instead of spreading out resources too thinly. As with customer service, relationship networks complement other core competencies and they can be considered relevant and durable. Looking at other markets, companies with relationship networks as a core competence are not hard to

pinpoint. Such a company could be for example Foxconn, the juggernaut-sized manufacturer and supplier behind Apple or perhaps even the celebrity tennis star Roger Federer, who has a thriving relationship with the sports apparel giant Nike.

4.3 Summary of case company core competencies

Based on relevant literature and the tool used in the previous chapter, the case company most likely has two core competences: **technical know-how** and **customer service**. Operating in the training service business requires **strong know-how** of the subject matter and knowledge of best training practices. Additionally, as customers increasingly prefer virtual training and snappy tutorial videos over traditional classroom trainings, the company must have strong know-how of the modern training media. Moreover, training content today needs to be effective and concise, yet interesting and engaging. Because the format and structure of trainings over the internet is constantly evolving, technical know-how in particular needs constant nurturing and development, otherwise the competence will become outdated and fade away.

The core of any successful service company should be **customer service**. This is especially true in the training service business, as delivering training requires close interaction with the customer. Constant feedback from the client also helps when designing virtual trainings for various target groups. In essence, delivering training is an on-going process of constant revision and feedback, as the training product is never truly ready or finished. Moreover, this constant process builds trust between the customer and the training provider. A thriving business relationship is a characteristic that cannot be built quickly - it takes time and mutual effort. Likewise, a company cannot make the decision to acquire or purchase the competence of customer service. As discussed earlier, this is one key criteria of a core competence: it cannot be easily acquired without heavy investments and changing company values. Besides, as core competences are typically mutually exclusive, a company would most likely have to abandon their current core competence if they would like to make the switch. Both technical know-how and customer service provide value and benefits to the case company customers and neither one is easy to imitate. Significantly, these core competencies can be widely leveraged to most, if not all, products of the case company.

5 Analyzing and identifying strategic change and key trends

5.1 Be part of the disruption or a part of history?

Due to the elusive nature of business and technology trends, listing them in a structured way is not a trivial task. In order to gather trends and phenomena which could be relevant for the case company, it makes sense to pick a viewpoint or perspective as a starting point. As discussed in the earlier chapters, the case company of this thesis operates in the IT technology training service field. Therefore the trends in this chapter are gathered keeping this perspective in mind.

Christensen (1997) was one of the first to talk about the concept of disruptive innovation. He claimed that once in a while an innovation is created, which makes existing products or services obsolete. Ever since, researchers have then argued about the definition of disruption and what products and services can be counted as truly disruptive. As Manyika et al. (2013) point out, there are three important trends that were practically unknown to global masses of people just a decade ago, but which few companies can choose to ignore today: *cloud computing*, *mobile internet*, and *social media*. Moreover, the researchers argue that these three trends combined are transforming computing from a scarce to an abundant resource. This in turn will serve as a platform for completely new business models to emerge. In other words, they make a powerful platform for disruptive products. Take for example Uber, the globally booming taxi service, which is based on mobile internet and location-based services.

So why didn't a leading taxi company develop an app before Uber? Make no mistake; corporations cannot afford to be ignorant about their futures as most are constantly on the lookout for weak signals. It's more than likely that key players have used scenario planning (or similar) to create forecasts of the future of their business. So why have Uber seemingly caught taxi companies with their pants down? Market leaders often acknowledge weak signals but are hesitant to react to them. Why? Because their current business is thriving and they probably have obtained a decent market share already. Making bold decisions as a market leader - when things are going well - is challenging, as we have seen with, for example, the demise of Nokia. Moreover, making a strategic switch could mean a decline in the current business as strategies are often mutually

exclusive as discussed earlier on. Shutting down a cash cow is a monumental task, perhaps even an impossible one for managers, even though in hindsight it would have been the correct decision. As Bughin et al. (2010) propose, managers should ask themselves the following hypothetical question: What would happen if a competitor offered the same product or service (as ours) free of charge? The researchers argue that the responses will reveal indications of opportunities for disruption, as well as of vulnerabilities in the current business.

This chapter will include a collection of these weak signals, or trends, in the IT landscape affecting businesses of tomorrow. As the objective is not to explain things already in the mainstream, but to look ahead, the trends will always contain a degree of uncertainty. The scope for looking ahead is 5 to 10 years in time. Some of these trends are already rapidly gathering momentum, while some are merely blips in researchers' forecasts. Moreover, certain trends are somewhat overlapping as they all play a part of a bigger picture in the IT business landscape. These trends will then be analyzed with the issues-priorities matrix in the following subchapter to filter out key trends most likely influencing the case company of this thesis.

The next business trend highlighted by Bughin et al. (2013) is offering *anything as a service* (XaaS). Cloud computing is an example of this macro-trend, which is commonly considered as the "pay-as-you-go/use" business model. For example BMW is acknowledging this trend by offering a service called DriveNow in collaboration with the car rental company Sixt (Electric Carsharing by BMWi - DriveNow. n.d.). Consumers nowadays want to use a car but not necessary own one, which is spot on as the trend suggests. The DriveNow service has a one-time registration fee but after that, all car rentals are charged on a per minute rate. This way, consumers pay only for the actual usage of the car. In essence, this is the next step in evolution from the traditional car leasing model. For consumers living city centers, they may only need to use their car a few hours per week. Bughin et al. (2013) highlight the fact that this trend is just picking up steam. They claim that understanding of what's most amenable to being delivered as a service is still evolving as are the attitudes and appetites of buyers. That being the case, much of the disruption caused by this trend still lies ahead.

As Bughin et al. (2013) suggest, few companies can ignore *social technologies* in their field of business. The researchers give an example of a department store which decides the colors of their upcoming apparel lines based on Facebook likes. The same kind of

effect is spreading from retailing to the automotive business as innovative companies mine social experiences to shape their products and services. The researchers continue by explaining about a TV broadcasting company, which creates feedback loops in social media for popular shows. This trend has been gathering momentum in Finland too, as broadcasting channels include Twitter hashtags with popular TV shows for viewers to participate. In essence, this trend was started by the TV show *Big Brother* and it has now expanded to most primetime shows. But this is just the start. Bughin et al. (2013) explain about Kraft Foods, which has invested in a powerful social-technology platform that is used to assemble teams with specialized knowledge across the corporation. The researchers claim that moving from a traditional email-based company culture to a social-technology platform accelerates knowledge sharing, shortens product-development cycles, and makes competitive responsive times faster. As a result, spending most of one's workday bouncing emails back and forth is coming to an end. However, the researchers conclude that only 10 percent of executives surveyed in 2012 realized the power in connecting customers, employees, and business partners with social technologies.

Second, Bughin et al. (2013) list a trend which most readers are certainly familiar with – *Big data and analytics*. “Big data” has been floating around as a consultant-favorite buzzword for years, but few people understand the potential which lays ahead of us. The researchers highlight the fact that global data volumes are doubling faster than every two years. This data is gathered from social web sites, sensors, smartphones, and more. By analyzing this data, companies of tomorrow have the opportunity to customize their products and services according to ever-finer consumer micro-segments. Facebook has revolutionized advertising by providing companies highly accurate user data, which is then used to create these powerful microsegments. For example Audi could launch a global campaign targeting only BMW owners (or fans) from the age group of 50 to 60 years. Obviously this wasn't possible two decades before. Another example are retailers which most already have bonus or membership cards to keep detailed records of what each customer is buying.

But this type of data itself is not valuable, therefore analytics is needed. Bughin et al (2013) suggest that this data combined with data collected from the social media and news reports can be analyzed and used to boost corporate performance. The researchers conclude that despite the widespread recognition of big data's potential, the gap between leaders and laggards is opening up. This means that key players, such as Amazon, are getting further ahead on new ways to test, learn, organize, and compete using

big data. For companies trying to keep up pace, developing a big-data plan is becoming a critical priority. The researchers go on further and claim that creating such plan nowadays is equally important as was creating the first corporate strategy 40 years ago. In other words, it's not a matter of whether or not managers believe in Big Data or not, it's about creating a credible big-data plan and fast, because competitors are already jumping onboard.

In the field of sensors, we have just seen the first products of *wearable technology* come alive. Smartwatches are the obvious starting point, but there is much more to it. Google Glass was one of the most innovative products that took a major leap in the wearable technology scene. It has tons of features starting from HD video recording to running futuristic apps. But maybe the timing wasn't quite right as consumers didn't feel like walking around in town looking like Robocop's brother. However wearable technology is just taking its first baby steps. Roque et al. (2015) explain that police officers are already carrying small cameras hidden in their vests to provide a video feed to the precinct. The researchers point out a fact that people behave in a more positive manner when they are aware of a wearable camera. They claim it works both ways, whether a police officer is engaging with a suspect or a citizen reacting to the police officer. Health care business has already jumped on the wearable technology trend also. Patients at home are wearing heart rate monitors which stream data to the hospital for doctors to analyze. Roque et al. (2015) build on this and claim that health insurance companies are likely to charge a higher rate from individuals not living a healthy lifestyle and charging less from people embracing healthy habits.

Next trend which requires closer attention is called *Internet of things*. Like Big Data, Internet of things is one of the most hackneyed buzzword found on blogs and news sites nowadays. Moreover, the trend has escalated into jokes such as soon toasters and electric kettles will have Wi-Fi access included. But researchers and device manufacturers certainly see the trend as no joke. Roque et al. (2015) define the Internet of things as an environment where devices are networked and interact with each other. The researchers explain that in 2015 it was estimated that 9 billion devices had this function. By the year 2020, the number of connected devices is forecasted to reach 24 billion. Connected devices enable copying machines to email staff when ink levels are low, televisions to share recorded programs, and home lighting to be adjusted using a tablet and app as a remote controller. As Bughin et al. (2013) point out, companies are developing systems which not only monitor but make autonomous decisions based on the data received from these

smart networks. The researchers give an example of monitoring vehicle flows on streets and automatically reprogramming traffic signals based on real-time data. As discussed with the previous trend, this same logic could be applied by health insurance companies. As an example, the insurance companies could easily create a dynamic pricing model based on the fitness and health data gathered from clients.

Manyika et al. (2013) argue that *renewable energy sources*, such as solar, wind, hydro-electric, and ocean wave hold a great potential waiting to be unleashed. The researchers define renewable energy as energy that is derived from a source which is continuously replenished, such as the sun or wind. The adoption of renewable energy sources are depending on two key factors: the rising need of amounts of energy produced and the need to mitigate environmental degradation and climate change. As pollution has become a huge issue in India, China and in other emerging economies, rapid economic growth is forecasted in this sector. Major economies, such as the United States and China, have agreed to target a maximum global temperature increase of two degrees Celsius by 2050 to limit these changes. As a part of this effort, the United States plan to double its use of renewable energies by 2020, while the Chinese government has planned to meet at least 20 percent of the country's energy demand with renewables by 2020. (Manyika et al. 2013).

From a technical product point of view, particularly interesting is the trend of increased use of photovoltaics. In short, the technical evolution of solar panels and the increase in the efficiency of transforming light into current. The researchers explain that these panels are constructed of photosensitive materials such as crystalline silicon. The photosensitive panels then convert sunlight into electric energy. Solar panels can be used in small arrays to power a single building or summer cottage, or deployed in massive solar "farms" that feed into the power grid. (Manyika et al. 2013). Perhaps a more interesting idea is fitting solar panels as backup power sources to laptops, houses, power banks, electric cars, and smartphones. Imagine, for example, that driving on a sunny day could boost the range of an electric car by fitting a solar panel on the roof, or better yet, building the whole roof of photovoltaic materials.

The next trend highlighted by Manyika et al. (2013) is called *advanced robotics*. During the past decades, industrial robots have been used on various manufacturing and maintenance tasks. Common for these tasks is the fact that they are difficult, dangerous,

or impractical for humans – welding, handling heavy materials, lawn mowing, or vacuuming, for example. Manyika et al. (2013) highlight the fact that even though robotic vacuum cleaners have been around for years, sales of household robots are now growing rapidly, around 15 - 20 percent annually. The researchers explain that advanced robotics promises a world where robots could work even in chaotic conditions and alongside humans. Moreover, robotic human augmentation could lead to massive increases in productivity and even extend human lives. The physically handicapped and the elderly could live healthier and less-restricted lives using robotic prosthetics and “exoskeletons” that strap on like braces assisting the muscles and joints of the patient’s body to overcome the handicaps. The researchers estimate that the application of advanced robotics across health care, manufacturing, and services could generate a potential economic impact of \$1.7 trillion to \$4.5 trillion per year by 2025, including more than \$800 billion to \$2.6 trillion in value from health-care uses. (Manyika et al. 2013).

The adoption rate for advanced robotics depend on many factors, including labor market conditions. The researchers use China as an example of a market where wages, education levels and living standards are rising, so fewer workers are willing to accept repetitive factory work. At the same time workers are pressing for better working conditions so traditional “sweatshops” are getting harder and harder to keep in operation. Therefore Foxconn, a contract manufacturer employing 1.2 million workers, is heavily investing in robotics to assemble products such as the Apple iPhone. Manyika et al. (2013) argue that even faster growth in robotics can be achieved if general-purpose models can drive rapid adaptation in simple manufacturing and service work. Such a model is “Baxter”, a \$22,000 human-like robot developed by a startup company called Rethink Robotics. Baxter’s is best at performing simple operations such as picking up objects, moving them, and putting them down (see Figure 7). However Baxter has superior adaptability and modularity, which allows operators to install various attachments on its arms and teach a new routine to it without any programming skills. An operator simply has to guide Baxter’s arms through motions which are needed for the task, which Baxter then memorizes and nods its “head” to indicate that it has understood its new instructions. (Manyika et al. 2013).



Figure 7. Baxter at work

According to Manyika et al. (2013), *3D printing* is a powerful trend to consider. The researchers define 3D printing as machines that can print objects in a similar way that a traditional printer prints ink on paper. 3D printers operate using an additive process, which means that they build objects layer-by-layer rather than through moulding or subtractive techniques (such as machining). The researchers continue and explain that 3D printing is also effortless, because it skips many traditional manufacturing steps, such as prototyping, moulding, welding metal parts together, and assembling. With 3D printing, an idea can go directly from a file on a designer's computer to a finished part or product. 3D printing for producing complex, low volume, and highly customizable products is already picking up momentum. In 2013, Boeing printed 200 different parts for ten aircraft platforms. In health care, companies have been offering printed custom hearing aid earpieces, selling more than one million units in 2011. Moreover, the ability to print body parts from the patient's own cells could improve transplant success rates and prevent deaths for patient waiting for donor organs. (Manyika et al. 2013).

As a vision from the future, imagine a consumer wanting to buy a new pair of shoes. Instead of going to the store, they could buy a shoe design from Amazon or download one for free. With a few clicks, the consumer could send the shoe design file to a local 3D printing shop and pick up their perfectly fitting new pair of shoes the next day. In

short, 3D printing not only opens up new markets to competition from entrepreneurs, but it also has the potential to shift value directly to consumers as they learn how to produce things that they used to buy. Therefore 3D printing has a huge potential for causing a paradigm shift and creating a disruption in the manufacturing business. (Manyika et al. 2013).

After nearly two decades of shopping and hanging around on the Internet, customers expect services to be free, fast, and easy to use without instructions. According to Bughin et al. 2013, we are living in a *world of free*. This presents challenges to all businesses, since customers expect instant customer service and quality, from web sites to brick-and-mortar stores. Fail to deliver, and competitors' offerings are only an app download away. Perhaps the biggest challenge for traditional retailers is that they must "showroom" their products at physical stores but the consumer can then use a price comparison app and make the order online from a competitor, such as Amazon, for a lower price. This is nothing new, but the key point is that consumers will probably never pay for valuable technology-enabled services, such as search - and the list seems to be growing rapidly. The researchers argue that providers of these "free" services will have to innovate with alternative business models. A familiar example of this is Google, which offers its services free of charge for the consumer and gathers revenue by selling advertising and insights of customer behavior. (Bughin et al. 2013, Dahlström et al. 2013).

In a world of digitized instant gratification and low switching costs, companies are forced to seek these types of business models which provide more products and services free of charge or at lower cost. In mobile gaming, this type of "freemium" business model is a popular choice by companies. It typically allows the consumer to download and play the game for free, get addicted to it and then make the purchase for new levels or in-game resources to make it easier to proceed in the game. Spotify became known for using a similar type of business model with their music streaming app. They let consumers listen to all songs free of charge with ads. This is how they built a huge customer base early on as a startup company. Spotify then offered monthly subscriptions to their customer base, which allowed consumers access to additional features, such as a completely ad-free experience and higher bitrate audio quality. In short, to stand up against the low switching costs, companies of tomorrow must provide a polished and fast service which is cheap at first, if not free, and monetized right after the customer's trust is gained. (Dahlström et al. 2013).

Bughin et al. 2013 highlight a key technology trend which they call *automation of knowledge work*. It includes the advances of artificial intelligence, machine learning and voice recognition technologies, such as Apple's Siri and Google Now. The researchers explain that computers can already answer "unstructured" questions formulated in ordinary language by the operating personnel. Compared to precisely written software queries, this a breakthrough as employees or customers without specialized training can get information on their own. The researchers explain that the Google Now service can already anticipate user needs, interacting with their browser history, calendar entries, and current location. Google Now can remind the user that they have a flight to catch and because of routing and traffic information with real-time data, they recommend the user to leave earlier to the airport. (Bughin et al. 2013).

The researches continue and explain that in health care, oncologists use IBM's new supercomputer, Watson, to provide chronic care and cancer treatment diagnostics. Watson guides the doctors by accessing knowledge from 600 000 medical evidence reports, two million pages of text from 42 medical journals, and 1.5 million patient records and clinical trials in the field of oncology. It can then compare each patient's individual symptoms, family history, vital signs, medications, and much more to diagnose and recommend the best treatment with the highest probability of success. The researchers give another example from the field of law. Law firms are using computers to scan thousands of legal briefs and precedents to assist in pretrial research - work that would have previously taken hundreds or thousands hours of paralegal labor. Symantec's Clearwell system has been reported to analyze and sort more than 570 000 documents in two days. Once the favorite subject of science fiction writers, the rise of artificial intelligence is happening within this century. Soon it could very well be possible to create machines with processing powers that far exceed the human brain capacity. The researchers end the chapter with fascinating questions: How will these machines be harnessed? What capabilities will they have? Will machines become "smarter" than humans? (Bughin et al. 2013).

As a summary, the trends discussed above are labeled from T1 to T11, gathered into Table 5 and analyzed according to three illustrative criteria: speed, scope, and economic value:

		Illustrative rate or speed of technology improvement	Illustrative scope or range of impact	Illustrative scale of economic value
T1	Mobile internet	\$5 million vs. \$400 Price of the fastest super-computer in 1975 vs. price of an iPhone 4 today, equal in performance	4.3 billion People remaining to be connected to the Internet, potentially through mobile Internet	\$1.7 trillion GDP related to the Internet
		6x Growth in sales of smartphones and tablets since launch of iPhone in 2007	1 billion Transaction and interaction workers, nearly 40% of global workforce	\$25 trillion Interaction and transaction worker employment costs, 70% of global employment costs
T2	Cloud computing and XaaS	18 months Time to double server performance per dollar	2 billion Global users of cloud-based email services, like Gmail, Yahoo, and Hotmail	\$1.7 trillion GDP related to the Internet
		3x Monthly cost of owning a server vs. renting in the cloud	80% North American institutions hosting or planning to host critical applications in the cloud	\$3 trillion Enterprise IT spend
T3	Social technologies 1.)	12% vs. 31% Amount of SMEs using social media in the US in 2009 vs. 2011	More than 1.5 billion Number of social network users globally	\$0.9 – \$1.3 trillion Annual value waiting to be unlocked across consumer packaged goods, retail financial services, advanced manufacturing, and professional services
		31% Fortune 500 companies without any social media presence in 2011	230+ million Knowledge workers, 9% of global workforce	Up to 25% Potential improvement possible in knowledge worker productivity

T4	Big data and analytics 2.)	130 to 40 000 exabytes Digital data created, replicated, and consumed ("digital universe") in a single year 2005 vs. 2020	40% Amount of global data "touched" by cloud computing providers by 2020	40% Growth of infrastructure of the digital universe and telecommunications between 2012 and 2020 From \$2.00 to \$0.20 Investment per gigabyte from 2012 to 2020 From 36% to 62% Emerging markets' share of the digital universe from 2012 to 2020
T5	Wearable technology 3.)	Just 10% Amount of American adults who own a fitness tracker From 20% to 30% New rules of Obamacare that boost corporate welfare incentives and cash rewards which employers can issue to their staff	1.8 billion Smartphones in the world, with the potential of gathering data	\$2.6 trillion Annual health care bill of the US citizens mainly driven by obesity and diabetes
T6	Internet of things	300% Increase in connected machine-to-machine devices over past 5 years 80-90% Price decline in MEMS sensors in past 5 years	1 trillion Things that could be connected to the Internet across industries 100 million Global machine to machine (M2M) device connections across sectors	\$36 trillion Operating costs of key affected industries (manufacturing, health care, and mining)
T7	Renewable energy	85% Lower price for a solar photovoltaic cell per watt since 2000 19x Growth in solar photovoltaic and wind generation capacity since 2000	21,000 TWh Annual global electricity consumption 13 billion tons Annual CO ₂ emissions from electricity generation, more than from all cars, trucks, and planes	\$3.5 trillion Value of global electricity consumption \$80 billion Value of global carbon market transactions
T8	Advanced robotics	75-85% Lower price for Baxter than a typical industrial robot 170% Growth in sales of industrial robots, 2009 - 2011	320 million Manufacturing workers, 12% of global workforce 250 million Annual major surgeries	\$6 trillion Manufacturing worker employment costs, 19% of global employment costs \$2-3 trillion Cost of major surgeries

T9	3D printing	90% Lower price for a home 3D printer vs. 4 years ago	320 million Manufacturing workers, 12% of global workforce	\$11 trillion Global manufacturing GDP
		4x Increase in additive manufacturing revenue in past 10 years	8 billion Annual number of toys manufactured globally	\$85 billion Revenue from global toy sales
T10	World of free 4.)	Now Consumers want to interact anywhere at any time	2/3 Amount of customer decisions not driven by price	
		Can I Consumers demand new ways that create value for them		
		For me Content must be ultra-personalized		
		Simply Consumers expect all interactions to be easy		
T11	Automating knowledge work	400+ million Increase in number of users of intelligent digital assistants such as Siri and Google Now in past 5 years	230+ million Knowledge workers, 9% of global workforce	\$9+ trillion Knowledge worker employment costs, 27% of global employment costs
			1.8 billion Smartphones in the world, with potential to use automated digital assistance apps 3.)	

All data by Manyika et al. (2013), except

- 1.) Chui et al. (2012)
- 2.) Gantz et al. (2012)
- 3.) Olson, P. (2014)
- 4.) Dahlström et al. (2013)

Table 5. Speed, scope, and economic value of 11 key technology trends

5.2 Identifying key trends

The next step is to use the list of trends as an input to the framework gathered in section 3. As analyzed in section 4, the selected core competencies are **technical know-how** and **customer service**. Based on these, the analysis of relevant trends is presented in Table 6:

Ease of commercialization	High		T10	T2
	Medium	T9	T1, T5, T6	T3
	Low	T7	T4	T8, T11
		Low	Medium	High
		Strategic fit with core competencies		

Table 6. Identifying relevant trends for the case company

Interpreting the results, the trends on the bottom left corner require no further inspection. They are either of poor fit to the company core competencies and/or hard to commercialize. In contrast it's easy to pinpoint the trends on the top right corner which match the case company core competencies and at the same time have commercialization potential. The relevant trends are:

- T2: Cloud computing and anything as a service (XaaS)
- T3: Social technologies
- T10: World of free

As discussed earlier, trends chosen for this thesis are more or less overlapping. The XaaS macro-trend, *Social technologies*, and *Automating knowledge work* particularly have a lot in common. Generally, all of them are related to XaaS and social media platforms. In contrast, *World of free* is not a technology trend; it's more of a global business and marketing trend. Besides, it's a macro-trend which few companies can choose to ignore, regardless of their business. It could also be argued that these macro-trends are forming into a set of capabilities which most (if not all) IT companies must acknowledge and embed across functions and operations.

Looking at the bottom right corner of the chart, *Advanced robotics* (T8) and *Automating knowledge work* (T11) are trends which requires closer examination. It's obvious that the trends would be a strong fit with current case company core competencies, particularly the strong technical know-how, but commercialization might be impossible without heavy investments and sacrificing current businesses. *Mobile internet* (T1), *Wearable technology* (T5), and *Internet of things* (T6) can be found from the center of the chart. All have good fit with technical know-how and probably a medium fit with the other core competency, customer service. These three trends are global macro-trends and perhaps not easily commercialized by the case company. With this in mind, a medium-medium rating has been assigned to them. However these three trends cannot be completely ignored from the new business opportunity suggestions in the next section.

5.3 Summary of findings

Based on the analysis from the previous chapter, the most relevant trends for the case company are **Cloud computing and XaaS** (anything as a service), **Social technologies**, and **World of free** as highlighted on Figure 8:

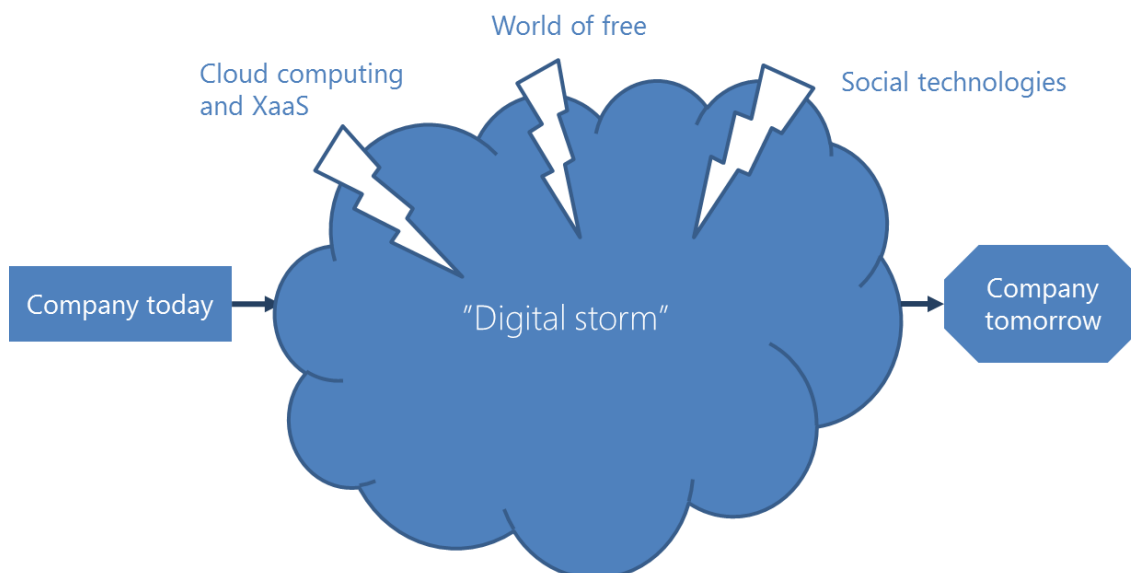


Figure 8. Trends and changes shaping the company of tomorrow

As discussed earlier, the macro-trend of treating anything as a service or offering a product as a “pay-as-you-go” concept is quickly picking up pace. As the case company is already providing trainings as on a service basis, this trend comes as no surprise. Consumers are shifting from purchasing and owning a product to simply paying for its use.

Once a status symbol of life quality, the trend of owning an expensive car has suffered serious inflation. Consumers can order a private driver from Uber using their smartphones, or pay a per-minute fee to rent a city car. For the Generation Y (consumers born between 1980s and the 2000s), changing winter tires, paying for car maintenance costs, and comparing insurance packages simply doesn't feel relevant any more. Instead, consumers demand flexibility, cost efficiency, and freedom of choice. In short, the attitudes of consumers are changing. However it's impossible to speculate about the total effect of this trend as most of the disruption still lies ahead.

On the other hand, consumers today and tomorrow have a tendency to demand ultra-personalized content for free. Providers of these "free" services must use the trend as an advantage to innovate with alternative business models. The top revenue-creating mobile games are thriving by using this type of freemium business model, where the game is ad-supported and free to play at first, but offers in-app purchases later on. A similar kind of model could easily be commercialized in the training business and it would be a strong match with the case company core competencies.

Building on the previous trends, collaborating between organizations is a key trend to consider. Generally, bouncing emails back a forth is not efficient use of work time. In contrast, connecting knowledge workers with a social platform and developing an environment where employees could rely on distributed problem solving is an interesting idea for the training business. Furthermore, as the case company has a large amount of silent technical know-how, unlocking the full potential of experts could reap great rewards. This is where huge productivity leaps could be gained, if a community of customers, employees, and business partners could interact efficiently.

6 Suggesting new business opportunities based on findings

6.1 Connecting knowledge workers via a social platform

As Weill (2015) points out, many corporations look to evolve from being a simple supplier to an omnichannel business model by further anticipating their evolving customer needs. Weill gives an example of a car insurance company, which evolved from providing simple yearly auto insurance deals from serving packages based on consumer life events, such

as buying a car, moving, getting married or having a child. Perhaps the same mindset could be applied to the training service business as well.

Although many companies use social technologies in some way, very few are anywhere near to achieving the full potential benefit. As previously discussed, there are huge productivity gains waiting to be unlocked amongst knowledge workers. As an average knowledge worker spends almost half of their workweek either managing emails or searching for internal information, messages posted on a social platform become content. This content makes silent knowledge searchable and accessible for managers, experts, and suppliers of the organization. This knowledge platform concept is illustrated in Figure 9:



Figure 9. Social platform concept for mass-collaboration between organizations

The platform would also be hugely beneficial for freelance knowledge workers, as they could create revenue by contributing and helping others. Based on the findings about *World of free*, fresh users or freelancers could be given an initial trial period for free. This

would help the platform to get a kick start and gather collaborating experts quickly. A rating or karma system could easily be implemented, where all platform users would earn a score based on their actions. Furthermore, users could achieve badges for their activity on the platform. In general, gamification is a common and powerful way to deeply engage users and to increase their amount of interactions. Organizations could then easily see which subject matter experts they would like to book for a specific project. A key for unleashing the potential of mass-collaboration would be to expand the concept across organizations.

However, achieving this type of mass-collaboration is not a straightforward task. Creating such a social platform requires the participating organizations to transform their processes, structures, and cultures; they will need to become more open and nonhierarchical in order to create a culture of trust between them. This type of open company culture with cross-organizational collaboration can feel impossible to traditional hierarchical organizations. This is worth mentioning although changing the culture of an organization is not in the scope of this thesis. Also some countries may have legal restrictions on how the salaries would be paid between partner organizations. Another challenge is convincing larger organizations to share their knowledge and to take part in this collaboration. Obvious risks include violations of privacy, potential loss of intellectual property, and damage to reputations. That being the case, are these not the same risks that threaten all companies today, should they choose to capitalize on social technologies or not?

There's no turning back, mass-collaboration is a trend which is already happening and gathering momentum. Social technologies have changed the way of how millions of people live their everyday lives. On social media, talented musicians who have never performed in public are now posting videos to YouTube and writers who have never been published are creating a name by writing blog posts. Furthermore, the traditional barrier between work and free time is being disrupted by social technologies. Employees want to stay in touch with their family and friends via social media during and after office hours. In essence, the global business environment is changing, it comes down to whether an organization is willing to embrace the change and make the most out of it or get stuck in the past. In order for organizations to stay relevant and perhaps ahead of the curve, they are required to make significant transformations in organizational behavior and management practices.

6.2 Productizing coaching model for ICT service companies

A key challenge in service business is to create a sellable product instead of claims and promises to deliver anything the customer wants. Instead of selling work hours, a service should be packaged into products that customers can buy off the shelf. In other words, do not sell time, sell results. Even if the core business is a service, a company should aim to productize it and create a model of that service. Services with most potential in productizing are ones which have close to identical inputs and outputs from project to project. The objective is not to make the service inflexible, but to systematize the service in a way that adds value both to the customer and the provider. As the case company has a proven track record of productizing their own training service, there could be a business opportunity in coaching other service companies to efficiently productize their services as illustrated in Figure 10:

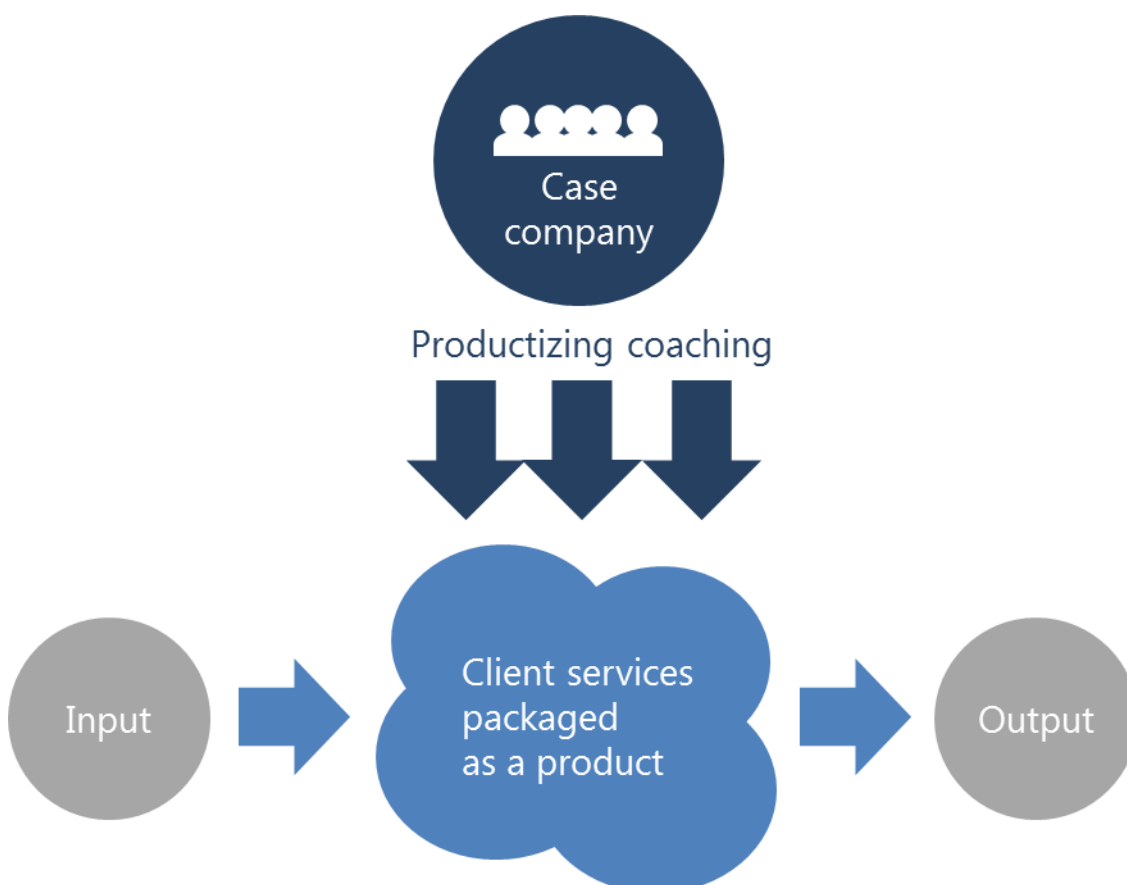


Figure 10. Model for coaching client companies to productize their services

Furthermore, the concept could be applied to most service companies, regardless of their segment and field of business. Most service companies struggle with the same problems: How to be more efficient? What could be standardized in our service? What parts should stay customizable? How to increase revenue generated per work hour? If a company heavily customizes their service for each client, time is wasted and profits are eaten up. In essence, the biggest advantage is switching from trading time for money to selling packaged products.

This model builds on the case company core competencies of *technical know-how* and *customer service*. As the case company has proven experience on both customer service and dealing with complex technical subjects, understanding and molding customer services as products could make for a true business opportunity. Accordingly, the case company could showcase their own services refined into products. This would create trust between the case company and their potential new clients. Subsequently, it would help the case company to market their new service and to land new clients.

The model also complies with the identified trend of *offering anything as a service*. The coaching model could be marketed to potential customer companies by providing a free consultation session at first. This would support the findings about the trend *world of free*. Furthermore, the case company could publish articles about the concept on their own web pages or on LinkedIn to make some noise and attract new customers. The case company could also help the customer in launching the newly packaged product by producing online video content or creating marketing campaigns. As the case company has experience with successfully running a technology training service business, sharing this knowledge as a consulting or coaching service could be a strong business opportunity.

6.3 Digitalization concept for healthcare and insurance companies

As discussed previously, the trends of *big data*, *wearable technology*, and *internet of things* are causing disruption for many companies and making traditional business models obsolete. Healthcare is one of the key business areas where this disruption is already in motion. Fitness trackers and wearable sensors are measuring our bodies and gathering accurate data of our health and lifestyle. This is called passive monitoring. In the near future, these sensors can be fitted in our jewelry, clothes, shoes etc. Furthermore, devices that can passively monitor what we eat and drink are also on the way. In summary, healthcare is moving from seeing a doctor when one gets sick to predictive care and

monitoring. As a bonus, when the employee visits the doctor, the hospital already has accurate data from the patient to help with the diagnosis.

The company can also issue bonuses for example when an employee rides a bike to work instead of taking the car. As fit employees are more productive and more likely not to switch jobs, these corporate-wellness programs are getting more and more popular. If designed correctly, these programs can also boost morale, reduce stress, increase vitality and diminish employee absenteeism. In this regard, the case company could partner up with a healthcare business and offer these types of corporate-wellness programs to new clients.

Furthermore, this data would be particularly interesting for health insurance companies. At the moment health insurance prices fluctuate once a year. Imagine if that rate could be changed each day? Or if smokers could be charged a premium for unhealthy lifestyle choices? Or what if walking or cycling to work instead of taking the car would lower the premiums? The possibilities are endless. In contrast, the pendulum swings both ways. If a customer does not exercise, the tracker will snitch them out and they will lose the discount. Second, the personal data - heart rate, preferred exercises, location of the gym, and time of exercise - will end up on the insurance company computers. These databases are naturally a perfect target for hackers. However, as the case company has a long track record in network security, they could help insurance companies to pay special attention to security measures and to keep their databases safe.

Inc. magazine conducted a survey for 500 CEOs in their September 2015 issue about sectors ripe for disruption: Healthcare came out on top of the list (The top 5 industries for disruptive growth in 2015). By definition, disruption means that a company creates an innovation which makes a competitor's business model or product obsolete. With this in mind, the case company has the core competencies to train healthcare and health insurance companies to jump on the disruption train. This business case is also supported by the findings of *offering anything as a service*. As the case company has relationships to companies operating in telecommunications and electronics manufacturing, they could act as consultants and find potential business partners for the healthcare and insurance companies. A part of the consultation service would be to inform and sell the concept to healthcare companies to make them realize that this kind disruption caused by *wearable technologies* is already happening and there's no turning back. Healthcare as a business

is without a doubt ripe for disruption. If current companies are not looking for a way to be a part of the disruption, there will be agile startups to reap the rewards.

6.4 Summary of business opportunities

The advantage a company had yesterday will be replaced by the trends of tomorrow. As long as competitors catch the trend wave and do it right, a company can quickly lose out and fail. As a rule, to be forced by others to change, is like being discarded. As Manyika et al. (2013) pointed out, time is the enemy when creating a strategy while the world is changing at Internet speed. The researchers conclude that business leaders must be prepared to disrupt their own businesses and make changes to keep up with the competition. Companies that reallocate resources early on to capture trends have higher returns and are more likely to survive long term. In essence, companies have to decide carefully whether they take a passive or reactive approach to trends.

This chapter has been discussing about capturing the most relevant trends from the case company point of view and suggesting business opportunities based on them. Based on the identified core competencies and key trends, three business opportunities is presented for the case company (Figure 11).

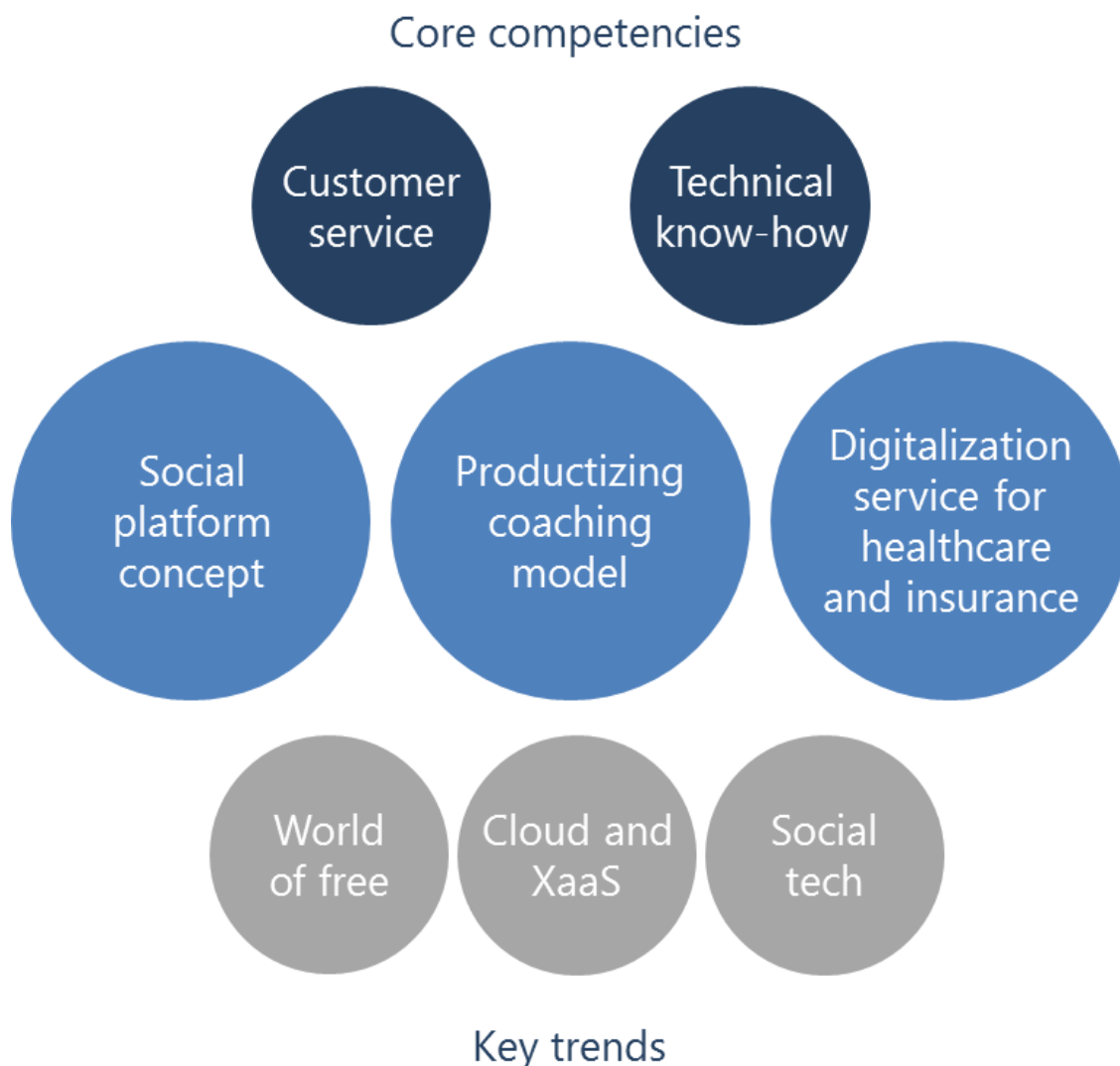


Figure 11. Summary of identified business opportunities

Based on the case company core competencies and relevant trends, the three business opportunities are a **social platform concept**, a **productizing coaching model**, and a **digitalization service for healthcare and insurance companies**.

The **social platform concept** seeks to connect knowledge workers and provide them with a platform to practise mass-collaboration. The objective is to boost knowledge worker productivity by reducing the amount of worktime they inefficiently spend bouncing emails back and forth, and searching for silent information from their peers and managers. In essence, all messages posted on the social platform becomes easily searchable content. Subsequently, this makes the silent knowledge of an organization efficiently

available for all users. The social platform would help in connecting clients, employees, and freelancers together. To further boost the potential of the social platform, cross-organizational collaboration is recommended. Freelancers would benefit from using the platform as they could easily contribute to the community and earn recognition in turn. Subsequently, the case company and its partners could easily spot the most competent subject matter experts and order project work straight from them. To summarize, researchers estimate that knowledge worker productivity could potentially be improved up to 25 percent with the use of social technologies.

The **productizing coaching model** aims to provide productizing consulting to other service companies. As most service companies struggle to package their services as sellable products, the case company could use their long track record on the subject matter to sell their consulting services. A common challenge for service companies is that they trade workhours for money. In order to be more efficient and actually sell an end product, most service companies are interested in switching from selling anything the customer wants to a packaged product with standard and customizable parts. The objective is not to make the service inflexible, but to make it more scalable and more profitable. As the case company has a long experience in creating online videos and product launch campaigns, the final part of the model could be to ensure that the client gets a running start with their new packaged service product.

As healthcare is one of the key business areas ripe for disruptive business models, the case company could use their expertise to provide a **digitalization service** to health insurance and healthcare companies. Passive monitoring is a trend which will cause disruption for traditional business models for healthcare and health insurance companies. We have only just seen the first waves of wearable sensors been launched for the consumer market, and the trend is only picking up steam. In the old days when an employee got sick, they visited the occupational health clinic to see a doctor. Nowadays, corporate-welfare programs encourage employees to wear fitness trackers and other sensors to encourage people to make healthy lifestyle choices by issuing bonuses and gift cards. This data is particularly interesting for health insurance companies too, as they could fluctuate their prices based on accurate, real-time data. As a summary, healthcare is evolving from a “guessing game” to a real-time, data based analytics business.

7 Conclusions

This section summarizes the study and suggests further research steps on the subject matter. Finally, this section evaluates the thesis comparing the outcome of the study with the initial objective, as well as evaluates the credibility of the thesis.

7.1 Short summary of the project

The objective of this research project was to explore relevant business and technology trends affecting the business of the case company as well as to identify the core competencies of the case company, and based on these, suggest new business opportunities. The case company of this thesis is a small technology training company operating with a B2B service business model.

Based on relevant literature, a conceptual framework was created. The conceptual framework consisted of best practices on identifying case company core competencies and key trends. The researcher gathered qualitative and quantitative data of trends affecting the case company business environment. The data was then analyzed to pinpoint the most relevant trends based on company core competencies and ease of commercialization. In essence, the input for the conceptual framework was the business context of the case company and a set of technology and business trends.

7.2 Feedback on identified business opportunities

The feedback round was undertaken by presenting the study along with the outcome to a case company board member. The objective of the feedback round was to get critique about the identified business opportunities from a B2B sales perspective as well as from a training service company veteran entrepreneur. Along with the study, the following set of questions were provided to the key stakeholder:

- What are the pros and cons about each business opportunity?
- Could the business opportunity be refined and developed into a sellable training service product in the future?
- Would it be possible to find a customer base for a training service product based on the business opportunity?
- Which of the three suggested business opportunities carries the most business potential?

Social platform (6.1)

The initial feedback from the key stakeholder about the social platform was positive and the upside of the platform business was seen as massive. However, the platform would require a substantial starting investment and time in order to become profitable. The other critique of the concept was whether the revenue would come from other companies (B2B) or individual customers. The issue with selling straight to consumers would be the same as highlighted in the trend *world of free*: consumers want their digital services to be free, without a monthly or yearly cost. Would individual consumers pay for using Wikipedia or LinkedIn? The key stakeholder concluded that the potential would be significantly higher, if the platform concept was developed further to provide additional value to companies and target employers instead of knowledge workers.

Productizing coaching model (6.2)

From a B2B sales perspective, the key stakeholder identified a challenge in the productizing coaching model. When the productizing coaching service is once purchased, how many clients would purchase it again? In other words, clients should be tied to a longer coaching contract. Another key challenge would be marketing and selling such a service. Generally, how could the case company easily showcase that the productizing coaching service actually works? How would the benefits of the service be presented to potential new clients?

Digitalization concept (6.3)

The main critique of the digitalization service was that it's often hard to convince product development companies to let suppliers interfere with their core competencies. In most cases services from 3rd party suppliers are hired to perform tasks outside the company's own core competencies. However, the key stakeholder highlighted the fact that such a model could be created where the digitalization know-how would be sold as a consultancy service and kept apart from the actual end product of the client.

7.3 Next steps

Despite the criticism, the business potential of the social platform concept remains strong. The latter two business opportunities relate to acting as a supplier for a product development company, and they do not carry the same business potential as the social platform. Furthermore, the potential customer base for this type of social platform is gigantic, as knowledge workers around the globe struggle with the same challenges.

To connect knowledge workers globally and get the social platform up and running, the case company would have to develop the concept further. The challenges identified by the case company key stakeholder remain. The initial investment in such social platform from a marketing and product development point of view is substantial. Furthermore, it could take several years for the platform to break even and eventually become profitable.

Organizations around the world struggle to improve the effectiveness of knowledge workers, whose job effectiveness is hard to measure. Furthermore, tackling productivity barriers for these types of jobs is key for many senior executives. That being the case, the case company could partner up with other companies to split these costs and get the social platform up and running. The concept could be sold to partners by highlighting the productivity increase potential of knowledge workers. Potential partner candidates could be companies that have experience in social media services, such as project management software developers or instant messaging service providers.

7.4 Further research suggestions

As the world is changing at internet speed, there are plenty of further research opportunities on the subject. Employees working with deep technical understanding in ICT will most likely spot these weak signals or trends earlier than their managers. It's typical for an organization to keep hold tight on their current business even though forces outside the "company bubble" would try to state the obvious.

Second, making these suggestions to managers and stakeholders is no trivial task. Lack of agility is a major reason why market leaders tend to fail when innovations occur in their area of business. There are many research opportunities related to change management and strategy in this era of service digitalization. In essence, even if a fresh digitalization strategy is created, it is often dwarfed by the old or current strategy. The underlying problem can be identified as inflexible company processes and a culture where taking risks is not encouraged. An interesting research question would be that is

it possible to create space for innovations at a large organization? Is it possible to change the course of the company when the existing clients are paying the bills? Should large organizations found startup companies or teams inside their own organization but without the heavy process structures? In short, can a technology organization be successful without agility and risk-taking mentality?

Third, a second research round concerning future trends affecting the company business environment is strongly recommended. Most likely some of the trends identified in this thesis will not pick up steam as projected and some dominant trends may rise outside the current horizon. In general, making multiple small corrections to the course of the company often enough is easier than making a U-turn in panic and forced by others.

Fourth, the case of scrapping traditional business strategy and forecast methods is growing stronger as disruptive innovations are pushing the pace. Has business strategy become obsolete in the ICT business? Does it make sense to create forecasts when a single agile startup company could potentially flush your business model down the toilet along with many others? In other words, is it possible to be strategic around disruption?

Fifth, potential new business models enabled by the cloud are fascinating. At the moment, data of a single consumer is shattered all over various cloud services. Huge value is there for the taking for an organization that could combine all this data and connect the dots. In general, digital services today are either free for the consumer but they have to give up privacy in return (Google). Other companies respect privacy and do not collect personal data, but instead collect a monthly fee. If personal data would be stored in one place, could a consumer decide how much they want to share with companies and how much they want to pay for the services in cash? In essence, could personal data be used effectively as currency for services or products?

Last, the identified business opportunities in this thesis provide several further research opportunities. The case company could benefit from research aiming to create a customer value proposition or a business model based on one of the three outcomes of this thesis. As the technology and business trend landscape changes rapidly, a second research round to update the situation on future technology and business trends is recommended.

7.5 Evaluation of the project

This section evaluates the research project by comparing the outcome with the initial objective of the thesis as well as evaluates the validity of the research and the reliability of the results.

7.5.1 Outcome vs. objective

The objective of this study was to identify new business opportunities for the case company. Currently, the case company acts as a training supplier for a few key client companies. Therefore it was identified that the case company should expand its customer base, find new business opportunities and reduce the dependency of these current key clients. The objective was to first identify the core competencies of the case company on which the business opportunities could be built on. To further boost the potential of the business opportunities, the objective was to gather trusted data about technology and business trends affecting the case company business.

Based on the strength of identified core competencies and key trends, a set of business opportunities was suggested. It could be said that that the outcome of this study did meet the objective, although the potential of the suggested business opportunities remains to be seen. After the case company further refines the most potential business opportunity as a sellable product or service, the final effect of the thesis outcome could be evaluated. In contrast, the trend mapping created as the pre-outcome of this study contains value even if the case company decides not to capitalize on the business opportunities.

The following subsection explores credibility concerns and will ensure that this research was conducted in an academic style.

7.5.2 Reliability & validity considerations

This thesis involves collecting and analyzing qualitative data. Patton (1999) recognizes that “issues of quality and credibility intersect with audience and intended research purposes”. According to him, the criteria for credibility of the research are:

- The researcher should use rigorous techniques and methods for gathering high-quality data
- The data should be analyzed with attention to issues of validity, reliability, and triangulation
- Credibility of the researcher in terms of training his/her experience, his/her track record, his/her status and presentation of himself/herself
- Analysis should be creative but also systematic
- Sufficient detail should be reported to allow others to judge the quality of the resulting product

Taking these points into consideration and linking it to this thesis, the technology and business trend data has been of high quality and gathered systematically from trusted sources. Furthermore, multiple sources of data were used to further ensure the credibility of data. The core competencies of the case company are based on documented best practices and are relevant as the researcher has worked over five years on customer projects at the case company. The identified business opportunities are built on the strength found from the conceptual framework of this thesis.

This study uses proper techniques and literature to base the outcome. As a summary based on the perspectives mentioned above, this thesis is credible.

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