WU Vienna University of Economics and Business

Master Thesis

The influence of an increasingly dynamic environment on the Viennese computer retailing sector

An empirical evaluation

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Abstract

The Viennese computer retailing sector is embedded in an increasingly dynamic and fast changing environment where from one year to the other much can change. Recent bankruptcies mirror that the sector has become unstable and is currently undergoing some state of upheaval. This has given rise to the question in what direction the sector is heading in the upcoming years. In an in-depth literature review the external environment of the sector has been analyzed on a global and national level and relevant trends and developments have been identified. In order to assess the future influence of these trends on the Viennese computer retailing sector, an expert survey with 27 respondents has been conducted. All respondents have been members of the "Fachgruppe Wien Handel Computer und Bürosysteme" of the Austrian Federal Economic Chamber, the cooperation partner of the study. Both, retailers and service providers operate within the sector, making it a highly heterogeneous one. The interviews have been conducted in a face-to-face setting using a standardized questionnaire with closed-ended and open questions. The results of the analysis show that the sector will be confronted with a number of structural changes, most notably a shift away from mere hardware retailing towards the increasing importance of services and consultation. Especially retailers will be hard hit by this development. In many cases they will be forced to adapt their business model towards a more service-focused approach to avoid closure. Specialization and in some areas niche occupation will become necessary – especially for smaller businesses – to survive in a highly competitive market. Companies will need to acquire expert knowledge in their field of specialization to provide their customers with high quality and individual service solutions and consultation. Thus, it will be vital to develop a deep understanding for customers' needs and desires. Direct selling and personal customer contact will continue to be of major importance. This high quality approach with a focus on services and personal customer care has been found to be the most promising strategy to succeed in a highly competitive environment. However, due to the ongoing emergence of new trends and developments a continuous observation of the market. Companies that are flexible enough to quickly adapt to a changing environment will see a bright future coming.

1. Introduction

Computers have become a standard tool in everyday life, not only for private usage but also in professional settings. The computer hardware and software market itself – as many other markets in the technology sector – is a highly dynamic and fast moving market, where from one year to the other its structure can look completely different. Recent developments have already considerably shaped the market. Whereas worldwide PC sales have been on a continuous downswing in the past years, mobile devices – such as tablets and smartphones – have experienced massive growth all over the world. With the increasing penetration of the Internet and digital devices, also the amount of data available has exploded, which, in turn, incrementally requires software, services and also qualified employees to make use of it. This vibrant market environment in terms of products and services has naturally also posed considerable challenges for computer retailers and service providers. What is more, digitalization has substantially impacted trade, giving rise to electronic and mobile commerce. Already over 40 percent of worldwide Internet users have bought at least one product or good online, with this figure set to increase in the future (eMarketer 2014a). Many new forms of distribution have developed, more and more also shaping stationary trade. Apart from digitalization, another far-reaching global trend that has affected whole nations, businesses and consumers is an increasing environmental consciousness and sustainability movement that has been driven by worldwide scarcity of resources and climate change. This has also impacted the computer and IT market, regarded as one of the most resource- and energy-intensive sectors in terms of production, usage and disposal. Many firms have already been induced to rethink and to make their business operations – including their computer hardware and IT – more sustainable.

These developments on a global scale do not spare Austrian computer retailers. Yet, the Austrian environment brings along a number of additional potential influencing factors on the sector. Recent bankruptcies and partly re-openings mirror the high degree of economic instability of computer retailing in Austria. While reasons may be found in some of the global developments, such as the rise of online commerce, also the weak economic situation and access to capital might have contributed. Also internal factors, such as management errors or too rapid growth, may be to blame.

At the beginning of this year, a study – *Strukturanalyse des Wiener Computerhandels* (Leimert 2015) – was conducted by the Vienna University of Economics and Business in

cooperation with the Austrian Chamber of Commerce. It already analyzed in-depth the current situation and structure of the Viennese computer retailing sector. Additionally, a comparison was made to the situation in 2003, which could be derived from a similar study conducted in 2003 (Schnedlitz & Teller 2003). However, the sector is embedded in an increasingly dynamic and changing environment with a number of developments potentially impacting it. This has given rise to the necessity to analyze this environment in more detail and to determine how the Viennese computer retailing sector is expected to develop in the future.

An empirical study should answer the following main research questions:

- *How do Viennese computer retailers perceive the increasingly dynamic environment?*
- *How will the Viennese computer retailing sector develop in the future?*

The underlying study builds on the *Strukturanalyse des Wiener Computerhandels* (Leimert 2015) and represents a collaboration with the *"Fachgruppe Wien Handel Computer und Bürosysteme"* of the Austrian Federal Economic Chamber.

The structure of the master thesis is as follows: In the course of the theoretical part, the external environment – first on a global scale and then on a national level – will be analyzed in terms of trends and developments potentially influencing the Viennese computer retailing sector. This will be followed by the definition of the internal environment of businesses operating in the sector and the deduction of respective research questions. The second part will then be dedicated to empirical research, comprising an empirical study in the form of expert interviews. The aim of the study is to answer the research questions mentioned above. The final part of the thesis will be the discussion of the research results as well as limitations of the empirical study and further research topics.

Relevant definitions

As already mentioned the underlying thesis constitutes a collaboration with the "*Fachgruppe Wien Handel Computer und Bürosysteme*" of the Austrian Federal Economic Chamber. The Austrian Federal Economic Chamber (de: *Wirtschaftskammer Österreich* or *WKÖ*) officially represents and coordinates the interests of Austrian businesses on a national and international level. The *WKÖ* itself serves as the umbrella organization for the nine state chambers, one in

each federal state. Each of the chambers is divided into seven different sectors, one of which is the trade sector. Each sector again is subdivided into different associations, which in the *WKÖ* are called "*Fachverbände*" and in the state chambers "*Fachgruppen*". Within the sector trade, the associations are mostly called "Gremien" (WKO 2015). The underlying master thesis will concentrate on businesses that are assigned to the "*Fachgruppe Wien Handel Computer und Bürosysteme*".

In the following the terms "Computer" and "office systems*" ("Computer und Bürosysteme")* should be clarified.

A "computer" can be defined as a *"machine that receives or stores or processes data very quickly according to a stored program"* (Collin 2002, p 84). A "Personal Computer" or "PC" refers to *"a computer designed for use by one person at a time. Also refers to a computer manufactured by IBM, or an IBM-compatible machine"* (Kajan 2002, p 404).

As no English definition for "office systems" could be found by the author, the two terms are explained separately. An "office" refers to a *"room or building where a company works or where business is done"* (Collin 2002, p 270). A "system" can be defined as *"any group of hardware or software or peripherals, etc., which work together"* (Collin 2002, p 372). Combining these two definitions, office systems can be understood as the hardware or software that is used in a company setting.

2. Analysis of the external environment

The Viennese computer retailing sector is embedded in an increasingly dynamic environment with a number of developments potentially influencing and shaping it (see graph 1). In order to obtain an overview of these developments that is as far-reaching and complete as possible, the analysis of the external environment will start on a global basis with identifying global mega trends that potentially impact the sector and the businesses operating within. The second step on a global scale will be the analysis of the global computer hardware and software market that brings along a number of evolutions that again may have an influence on the Viennese computer retailing sector. The analysis will then narrow down to the external environment in Austria; first to the economic landscape and further to the Austrian computer retailing sector. Just as the outer layers, also this country-specific layer yields developments that may affect the sector. In other words, each layer of the external environment may have an

influence on the next inner layer and finally on the internal environment which is represented by the Viennese computer retailing sector and the businesses operating within. Whereas the internal environment of businesses is potentially affected by the external environment without any control over it, they do, at least partly, control their internal environment.

In the following the external environment will be analyzed in a step-by-step approach.
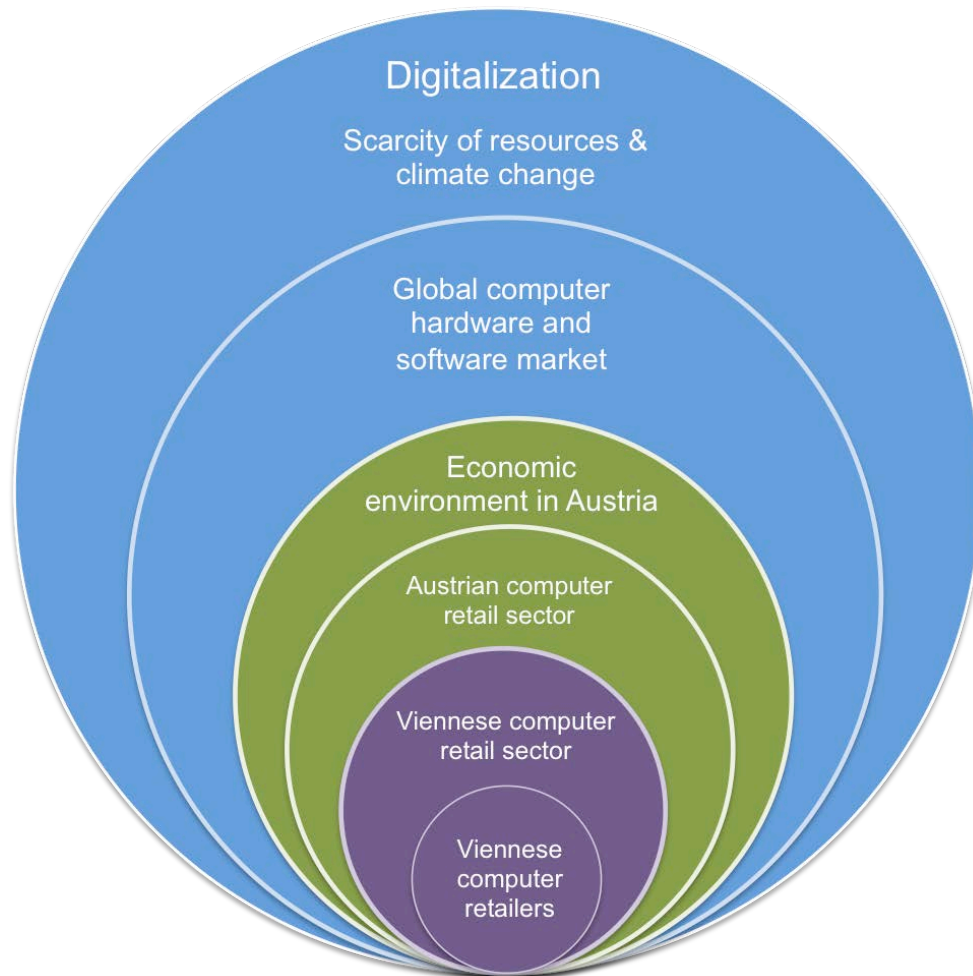
Figure 1: Model of the analysis of the environment

2.1 Global mega trends

We live in a world of constant motion and change, where the driving force can be attributed to a number of global developments, very often referred to as so called "megatrends". Megatrends can be defined as *"large, transformative global forces that define the future by having a far-reaching impact on business, economies, industries, societies and individuals* (EY 2015, p. 1)*."* The reason why these megatrends are so powerful is that they often yield

various opportunities but also risks for businesses (PWC 2015). Whereas all of these megatrends have the disruptive power to transform and reshape our world, they do not impact all industries, companies and individuals equally. Thus, in the course of intense literature review two megatrends, including a number of sub-trends and developments, have been identified to most likely have an impact on the Viennese computer retailing sector. First, digitalization with its far-reaching impact on communication and consumption, the emergence of new products and services as well as the evolution of digital commerce, and second the scarcity of resources and climate change with the resulting increase in environmental consciousness and sustainability. While each of the two megatrends stands on its own, they are also closely related to one another (EY 2015). In the following the relevance of these trends and the potential impacts on the computer retail sector will be described in greater detail.

2.1.1 Digitalization

"Digitalization transforms our society like only the industrial revolution did before in recent history (German Digitalization Consumer Report 2014, p 10).*"* Our lives are surrounded by digital products and services. We communicate via mobile devices, we work digitally on our computers, we shop digitally, we inform ourselves reading digital newspapers or using the Internet and we watch digital TV; there is hardly any area that has not been touched by digital innovation. Vor dem Esche and Hennig-Thurau (German Digitalization Consumer Report 2014) identify two peaks of digitalization, where the first one occurred with the broad distribution of the stationary Internet at the turn of the century, and the second one is approaching at a tearing pace, driven by the increasing distribution of the mobile Internet and the growth of mobile devices, as well as the a massive explosion of data. This has not only profoundly changed consumer behavior but has also opened up enormous opportunities for enterprises to take advantage from vast amounts of information, to enter new markets, to transform existing products and to introduce new business and delivery models. However, the rise of digital evolution also poses a number of challenges for companies, such as new competition, changing customer engagement and business models, unparalleled transparency, privacy concerns and cyber security threats (EY 2015).

2.1.1.1 Digitalization of communication and purchasing decisions making

One important stream of digital innovation is the digitalization of communication and purchasing decisions.

In 2014 the number of worldwide Internet users reached almost three billion, up from one billion in 2005. This corresponds to a worldwide Internet user penetration of 40 percent; 78 percent in developed countries and 32 percent in developing countries. With three out of four people using the Internet in 2014, Europe accounts for the highest Internet user penetration rate worldwide. Also the penetration rate of households having access to the Internet is highest in Europe (78 percent); the global average reaches 44 percent. Whereas the Internet could long only be used via fixed-broadband connections on desktop PCs, technological progress has allowed to access the Internet also via smartphones and other mobile devices (ICT 2014). In 2013 worldwide mobile phone penetration reached 61 percent, where 33 percent of them were smartphone users. As smartphones become more affordable, mobile users increasingly pick up smartphones, so that smartphone user penetration is expected to increase to almost 50 percent in 2017 (eMarketer 2014d). However, whereas in developed countries mobile-broadband penetration amounts to 84 percent, this number only comes to 21 percent in developing countries. With 64 percent, mobile-broadband penetration is highest in Europe (ICT 2014). Especially in countries where technological infrastructure is weak it has only been the mobile Internet that has made it possible to access the web. This is also the reason why in these countries the majority of Internet users access the web from their mobile devices; e.g. in the Middle East and Africa more than nine in 10 web users go online via their mobile phones. Whereas especially in Northern America and Europe growth of mobile phones and smartphones has slowed down as these devices are already ubiquitous, new users in developing regions, such as Asia-Pacific, Africa and the Middle-East, are expected to drive further increases of the market (eMarketer 2014e).

The increasing penetration and the rise of digital devices has allowed us to also communicate digitally. Astonishing 37 percent of daily communication is already digital, where there is no major difference between the digital share of private and of business communication (German Digitalization Consumer Report 2014). Also in Austria computers, smartphones and the Internet have comprehensively found their way into households and businesses. In 2013, 81 percent of Austrian households owned at least one computer, compared to only 67 percent in 2006 (Eurostat 2015a). 48 percent of the total population owned a smartphone, while 35 percent of Austrians aged between 15 and 59 own a tablet (Google 2013; Mobile

Communication Report 2014). Eight out of ten households have access to the Internet, where already 79 percent use broadband connections. However, Austrians not only use the internet at home or at work but 70 percent of the Internet users browse the web also on-the-go. This has mainly been enabled by the increasing distribution of mobile devices. 65 percent use their smartphone or mobile phone for this purpose, 38 percent their laptop or tablet (Statistik Austria 2014a).

Regarding online activities, the most prevalent purpose for Austrian Internet users to surf the web is the search for products and services (85 percent of Austrian Internet users). 67 percent of Austrian Internet users utilize the web to read the news, newspapers or magazines whereas 60 percent use it for online-banking purposes. More than half of the Austrians that have access to the web are active social media users (Statistik Austria 2014a). As the first number already indicates, more and more consumers are using the Internet to help make their purchase decision. In a German digitalization consumer study it was found that in 2014 already 25 percent of all decision-relevant shopping information comes from the Internet and social media (German Digitalization Consumer Report 2014). Almost half of Austrian Internet users stated to compare products, prices and features online for this purpose whereas 29 percent said they would look for opinions, reviews and advice online to help make their choice. Around a quarter gets inspiration and ideas online in the process of deciding for a product or service (Consumer Barometer 2014).

Especially smartphones have become an indispensible tool for most Austrian consumers to communicate, to search for information and to get entertained. 62% access the Internet everyday on their smartphone and 71% do not even leave home without their smartphone, which already shows the high relevance of smartphones for consumers. One major purpose for using the smartphone is communication. Here social networks are very popular; 75 percent of Austrian smartphone users who use the Internet in general access social networks via their smartphones and 44 percent do this at least once a day. However, smartphones are also increasingly used to research products and services; 80 percent of Austrian smartphone users who use the Internet in general have already researched a product or service on their phone. Thus, smartphones are more and more becoming our primary shopping companions (Google 2013). However, consumers do not only search the web for product and service information on manufacturers' or retailers' homepages, but they specifically look for electronic product reviews on websites and social networks. In some industries digital word-of-mouth is even more valued than face-to-face recommendations (German Digitalization Consumer Report 2014). The broad accessibility of consumption-related information has also

led to an almost perfect price transparency; this, on the one hand, is highly beneficial for consumers as it is easier than ever before to find the cheapest offer, but on the other hand has exerted a high level of pressure on companies and retailers (Rigby 2011). Especially traditional retailers are increasingly extorted to integrate an online channel in order to stay competitive (Heinemann 2015). 25 percent of Austrian smartphone users claim that they have already changed their mind on purchasing a product or service in a shop as a result of information that was gathered via the smartphone (Google 2013).

Also for companies the use of information and communication technologies has become indispensable – 99 percent have computers and 98 percent have access to the Internet, where nearly all of the companies use broadband Internet connections (96 percent). Overall, 19 percent of the employees are provided with portable devices (laptop, tablet or mobile phone) that enable a mobile Internet connection. Not only among consumers but also in the corporate world social media has more and more found favor, 41 percent of companies have engaged in social media in 2014 whereby social networks by far reach the highest usage rate (36%) (Statistik Austria 2014b).

The increasing penetration of the Internet and the growing distribution of mobile devices has led to a dramatic change in communication and purchase decision behavior. This has posed new opportunities and challenges for companies and retailers in terms of interacting with their customers. The question that raises is how relevant these changes are for Viennese computer retailers and how they would adapt to them.

2.1.1.2 Digitalization of commerce

Very closely connected to technologic innovations, the worldwide expansion of the Internet and consumers' increasing diversification of mobile devices is also the rise of purchase transactions made through PCs, tablets and smartphones. Electronic commerce or e-commerce can be defined as *"… the use of the Internet, the Web and apps to transact business. More formally, digitally enabled commercial transactions between and among organizations and individuals"* (Laudon & Traver 2014). The transition of e-commerce has led to an aggregation and accessibility of consumers that has probably never been reached in the history. This of course has opened up tremendous new possibilities of businesses to approach consumers and to distribute products and services to them.

However, e-commerce per se is nothing new; Heinemann (2015) identifies six different phases since its early beginnings in 1993. In the first phase from 1993 until 1999 most of today's top 10 e-commerce platforms, such as Amazon or eBay, were founded. It was a period of business vision, inspiration and experimentation (Heinemann 2015). However, many of these companies ran wild until a combination of ill-conceived strategies, speculative gambles and a slowing economy burst the dot-com bubble and wiped out half of all e-commerce retailers. This led to a shift towards economic reality (Rigby 2011). The second phase from 1999 until 2005 was characterized by the establishment of search engines and online marketplaces, such as Expedia. This was also the time when product rankings, ratings and reviews started. The third phase started in 2005 and has lasted until today; it has been the time of optimization and scaling. Many new system providers entered the field and online shops were optimized in terms of usability and user experience. In 2008, yet another phase of e-commerce started off; it has been considered being the start of digital commerce as we know it today and is characterized by communities, memberships and thus also user-generated content. Two years later, in 2010, m-commerce emerged and the fifth phase took off. Having started in 2013, the final phase of e-commerce that has been defined until now is the period of Omni-Channeling which is referred to the parallel usage of all information and shopping channels on behalf of consumers (Heinemann 2015). Thereby retailers have obtained the opportunity to interact with customers through countless channels – websites, physical stores, kiosks, direct mail or catalogs, call centers, social media, mobile devices, televisions and more (Rigby 2011). This has especially been enabled by the vast distribution of the mobile Internet and the rise of smartphones. The combination with Social Media and social networks that enable users to distribute their own content has led to revolutionary shopping behavior and the emergence of new business models (Heinemann 2015). Laudon and Traver (2014) even talk about a new and vibrant social, mobile and local model of e-commerce, the so-called "social e-commerce", that is growing alongside the more traditional e-commerce retail sales model.

The evolution of e-commerce has reshaped the landscape of distribution opportunities and has considerably intensified competition among online players and traditional retailers with physical outlets. Also consumer expectations have been redefined; they increasingly want the benefits of both worlds. They want broad selection, rich product information and customer reviews and tips which can be associated with online shopping, and on the other hand, they want personal service, the ability to touch products as well as shopping as an event and an

experience, something they typically get in physical stores. Indeed, different customer segments will value parts of the shopping experience differently, but all of them are likely to demand an integration of the online and offline world. Thus, as online players are gaining, in order to keep up especially traditional retailers are well-advised to pick up the pace of change and integrate digital commerce into their distribution strategy (Rigby 2011).

2.1.1.2.1 Global e-commerce development and outlook

"E-commerce is big business and getting bigger every day" (Nielsen 2014a, p 2).

According to eMarketer (2014a) worldwide business-to-consumer (B2C) e-commerce sales will reach 1.471 trillion US dollar in 2014 which would correspond to an increase of 20 percent over 2013. Although growth rates are expected to slow down to a level of 10 percent in 2018 as worldwide Internet usage continuously matures, global B2C e-commerce sales are forecasted to reach a peak of 2.356 trillion US dollar in 2018 (eMarketer 2014b). The main drivers of increasing sales are the expanding online and mobile user bases in emerging markets, advanced shipping and payment options as well as major brands pushing into new international markets (eMarketer 2014c). Comparing different regions North America (including only the US and Canada) is expected to remain the number one in global B2C e-commerce sales in 2014, accounting for about one third of all digital purchases. With an expected share of 31.2 percent of worldwide e-commerce sales in 2014, Asia-Pacific will be just behind North America. The third largest region accounting for 25.4 percent of global digital sales in 2014 is Western Europe. In 2015, eMarketer (2014c) predicts a change in the top; with a share of 33.4 percent the Asia-Pacific region will surpass North America accounting for 31.7 percent of global e-commerce sales. Together with Western Europe (24.6%) these three regions will dominate the global e-commerce market with a 90 percent combined share in 2015. Until 2018 only Asia-Pacific will manage to increase its share to 37.4 percent of global B2C e-commerce sales whereas North America as well as Europe will see their sales figures decline to 30.6 percent and 22.7 percent respectively. Lagging far behind, the regions Latin America, Central and Eastern Europe as well as Middle East and Africa are expected to account for only 4.3 percent, 4 percent and 2.3 percent each. Further forecasts show that these numbers will not change significantly in the future. Considering the worldwide digital buyer penetration, this number is predicted to increase from 42.7 percent in 2014 to 47.3 percent in 2018. In Western Europe 65.2 percent of Internet users made online purchases in 2014 while this number is expected to increase to 69 percent until 2018 (eMarketer 2014b).

Referring to the B2B e-commerce, around 95 percent of the trading volume in e-commerce is accounted for by the business customer segment. Especially efficiency and process optimization play a key role in B2B e-commerce (iBusiness 2013). What is more, also business clients, like consumers, increasingly use tablets, smartphones and social networks for purchasing, scheduling, exception handling and deciding. Additionally, enterprises more and more use social networks to build communities and enable collaboration among engineers, sales and procurement personnel (Laudon & Traver 2014). According to expert opinions also business clients become more demanding and wish to follow the B2C pattern in terms of shopping. Thus, online shops for business users should be informative but also user-friendly (intuitive browsing and convenient shopping) and offer business clients an involving purchasing experience, just like in the consumer world (iBusiness 2013).

2.1.1.2.2 Forms of e-commerce

In the course of digitalization, a number of business formats in e-commerce have emerged. Heinemann (2015) differentiates between the following types of digital commerce:

a. Pure online commerce

The so-called "online-pure-plays", such as Amazon or Zalando, distribute their products and services exclusively online and currently make the biggest group of online retailers. Despite the high concentration among pure plays, there is a considerable number of small online retailers that are very often start-ups or highly specialized providers. As it has become substantially easier to set up and run an online shop, the Internet appears to be the ideal retail format for smaller companies providing specialized offers. The main advantage of this format is the flexible adaption to changes.

b. Cooperative online commerce

Cooperative online commerce refers to online cooperatives that appear under a single e-store brand in the form of portals, offered by wholesalers, federations, manufacturers or independent institutions. These can be price comparison portals, mediation portals, booking portals or rental portals. Very common examples are Amazon Marketplace or eBay. Whereas Amazon Marketplace is linked to numerous foreign websites, eBay allows to quite easily and quickly transform an eBay shop into a complete individual e-commerce system. The main reason why so many sellers wish to establish cooperations with these commerce platforms is that they can profit from their trust potential, popularity and advertising strategies.

According to Heinemann (2015) portals and market places are among the top future trends in online retailing. In 2014 portals and market places already accounted for one third of total e-commerce sales in Germany. More and more manufacturers and retailers aim to seize the opportunity of reaching additional customers and increasingly integrate these portals, with Amazon and eBay leading the way, into their distribution strategy (Heinemann 2015). As customer acquisition is becoming increasingly harder, especially smaller retailers can profit from a higher number of potential customers at lower costs in online market places. According to expert opinion, particularly market places for niche products are likely to evolve into successful business models in the near future (iBusiness 2013).

c. Multi-channel retailing

Multi-channel retailing offers at least two possibilities to access products and services – a stationary outlet combined with an online channel – and is the retailing format that currently shows the strongest growth. As the Internet has become more popular and evolved, many traditional retail companies, so called brick and mortar vendors, have decided to take their product portfolio online – very often by means of acquiring existing online retailers – and thus have become so-called "click and mortar" vendors. The reason why so many stationary retailers additionally establish an electronic channel is most likely that is has opened up a completely new way of customer orientation and approach. Also stationary retailers with catalogue shopping, such as IKEA, have increasingly incorporated an electronic channel in their distribution strategy.

However, as most customers still make the actual purchase in stationary outlets, also retailers that were originally pure online players – such as Cyberport or Notesbookbilliger in terms of computer retailers – have started acquiring and/or opening stationary outlets. According to Heinemann (2015) the offline intentions on behalf of online pure plays can be regarded as one of the top future trends in online retailing. By the establishment of a stationary outlet also online retailers can satisfy the frequent consumers' desire of touching, feeling and trying a product before actually making a purchase. However, especially for online retailers that extend their distribution with traditional outlets, multi-channel systems bring along a number of challenges, such as assortment concepts and innovations as well as store management. Thus, it is more likely for smaller, specialized online players to become a multi channel retailer than for those who offer a broad and deep assortment.

d. Hybrid online retailing

Mail order companies that have incorporated an online shop into their distribution network are often falsely labeled multi-channel retailers even if they do not maintain a brick and mortar business. With the parallel operation of the catalog business and online retailing these companies form the hybrid online retailing format. For mail-order ventures it is probably the easiest to establish an Internet channel as they can profit from already established logistics and merchandize management processes as well as strengths in CRM in terms of the optimization of relationships with individual customers.

e. Vertical online retailing

Vertical integration is not only a trend in traditional retailing but has also found its way into online commerce. More and more manufacturers build their own online shops as an instrument to grow vertically. Whereas this development has been clearly noticeable in the fashion industry it now spans many different sectors. Especially companies that offer mass-customization or co-design opportunities require this vertical distribution structure as otherwise the engagement of customers would not be possible.

Referring to the computer industry, a prominent example for vertical online retailing is Apple. Although the company distributes its products also via authorized retailers, it has integrated a vast network of its own retail outlets, online and offline. Another example is Dell which has become well known particularly for its built-to-order approach for PC selling, allowing customers to get their individual PCs configured and delivered.

f. Mobile commerce

As already mentioned before, the Internet as a whole is growing with the mobile Internet showing the fastest growth (ICT 2014). There are predictions that in 2014 there were even more mobile Internet users than those accessing the web via a laptop or desktop PC (Heinemann 2015). Together with the rapidly increasing smartphone penetration, there is no doubt that our world has become more mobile than ever before. This has also been substantially impacting the retail sector and has opened up an additional channel for consumers to search for and buy products and services through their mobile devices. Whereas in 2013 74 percent of Internet users say they would use the web to search for products and services to buy, 34 percent said to do so via their mobile phone (Global Web Index 2014).

Mobile commerce, m-commerce or m-shopping, refer to online retailing or online shopping via a mobile device (smartphone or tablet). Thus m-commerce distinguishes from e-

commerce by the devices used; as in e-commerce a desktop PC or laptop (similar to a desktop PC in terms of display size and input options and thus excluded from m-commerce) is used to make a purchase, e-commerce can be regarded as stationary rather than mobile retailing (Heinemann 2015).

Taking into account the different devices to make an online purchase from, a recent study by Monetate (2014) revealed that 35 percent of e-commerce website traffic in the fourth quarter of 2014 was amounted to smartphones and tablets, up from only 18 percent in the same time period in 2012. However, when it comes to actually making a purchase, smartphones rarely close the deal; while the conversion rate of online shoppers – the percentage of consumers who browse for products and services, compare prices and finally make a purchase – for smartphones is only 0.92 percent, the rate comes to 2.86 percent for tablets. With 3.41 percent, computers reach the highest conversion rate (Monetate 2014). This means that despite smartphones become more and more popular to start consumers' purchasing process, they still turn to bigger devices to actually buy online.

Three different forms of m-commerce can be distinguished (Heinemann 2015):

a. Mobile-shopping website

Alternative to visiting a company's or retailer's website via a desktop PC or laptop, consumers can also access these pages through the web browser on their mobile devices. This, however, involves considerable differences in terms of the page and navigation structure as well as the output of content. Thus, many firms have already established mobile websites that are optimized to surf the web via a mobile device.

b. Mobile-shopping apps

In contrast to mobile websites, apps or applications are specifically developed for a certain operating system of a mobile device and in some circumstances access functions of a smartphones whereby a personalized usage can be enabled. In terms of digital media consumption in general, a study by comScore found that apps drive the majority of digital media consumption in the US, where 52 percent of the time spent using digital media would be accounted for by mobile app usage. Further 8 percent of the time spent using digital media can be attributed to the mobile web, so that the remaining 40 percent are made up by desktop-based digital media consumption. Comparing time spent consuming digital media on mobile devices, with 88 percent app activity is even higher on smartphones than on tablets (82

percent). Whereas the study shows that most of the time spent in mobile apps is used for social networking or gaming, only 5 percent are used for shopping (comScore 2014). What is of considerable importance in this matter is the direct connection to an online shop (Heinemann 2015).

c. Mobile-shopping in stationary trade

Mobile phones, especially smartphones, can also be a valuable addition in stationary trade. Although they are currently mainly used for research purposes, especially shopping applications, QR-codes and mobile payment functions continuously drive m-commerce (iBusiness 2013). This is also what a recent study about the future of stationary trade (Celko & Jánszky 2014) has found; it has been concluded that the mobile phone will be the centerpiece of stationary trade and the primary channel for customer approach by 2020. Two main areas of application can be distinguished; first the approach to customers outside a store and second the usage inside a store. In order to lead consumers into a store, many retailers offer a so called store locator as a function within an app. By localizing a consumer via the GPS signal on its smartphone and at the same time screening the environment, a consumer can easily be made aware of the closest store. However, the main disadvantage here is that only customers that intend to visit a store anyways can be reached. In order to overcome this issue and approach customers as soon as they are close to a store, companies can engage in location-based services or geo-targeting. If a customer has enabled this function, retailers can directly send information, current offers or coupons on a customer's phone. In the US for example the consumer electronics retailer Best Buy has equipped its stores so that it can inch-perfectly locate customers and send personalized vouchers directly to a customer's phone or show the availability of a requested product at the closest store (Heinemann 2015). This new approach of reaching and loyalizing customers by no means is only a trend observable in the US. In Austria the sports goods retailer Hervis uses so called beacons – small transmitter that send information via Bluetooth directly to a smartphone – together with its own app to inform its customers about exclusive offers, new products or product highlights (Placke 2015). The second major application of mobile phones is inside a store where a smartphone can considerable contribute to a customer's shopping experience (Heinemann 2015) (see: Side effects on stationary trade). According to Celko and Jánszky (2014), the mobile phone will become an intelligent shopping assistant that connects customers with their favorite products and brand at any time. In order to receive additional information about products – be it product information, usage instructions or product reviews – customers can use a barcode

scanner or a special software for automatic object recognition (Heinemann 2015). By integrating the mobile phone into their distribution strategy, retailers can profit from a continuous presence in customers' everyday life and an approach with personalized offers (Celko & Jánsky 2014).

What is more, also the payment process can be facilitated and speeded up by the usage of mobile applications. By using a self-checkout app, consumers can scan all the products they intend to buy with their smartphone while shopping and finally process the payment directly via the app. At the end of 2013 there were already 245 Mio. mobile payment users with this number being expected to increase to 450 Mio. users by the end of 2016 (Heinemann 2015). According to many experts the smartphone will become the wallet of the future. The most popular technology enabling mobile payment is the NFC technology; in 2014 already half of all smartphones worldwide had a NFC-chip. Already four years ago Google presented its mobile payment system Google Wallet for the Android operating system, which except of North America has only distributed marginally. A few months ago also Apple launched its own payment system, called Apple Pay. Although it is currently only available in the US, already two thirds of all smartphone transactions are carried out by Apple Pay. The third big player in the field is Samsung, which has recently acquired Loop-Pay, a company specialized in online payment systems. Other than Google's and Apple's systems, Samsung uses the so called Magnetic Secure Transmission software which imitates a credit or debit card at the terminal. This points to the main advantage of this technology; due to the compatibility with 90 percent of all payment terminals worldwide an exchange or upgrade of the terminals would not be necessary for retailers. A considerable barrier to this technology are privacy and security concerns that all providers need to sweep out of the way. Whereas Apple has guaranteed not to save any data on the devices or on servers, open questions regarding data storage remain especially with Google's technology. This is mainly because by offering mobile payment the company could gain and analyze customer data and thereby create targeted and personalized advertisements (Grech 2015). To sum up, while mobile payment technology seems to be ready for global penetration, only time will tell if substantial security concerns can be overcome and customer acceptance can be reached.

2.1.1.2.3 Future Outlook: No-line retailing

As consumers increasingly use different channels in parallel to gain information and to shop for products and services, it is becoming harder to determine as to whether a purchase has been made online or offline. This parallel usage of channels refers to so called omni-

channeling which is mainly driven by the increasing penetration of the mobile Internet and the rapid rise of smartphones. Whereas omni-channeling points to a new kind of consumer behavior in the purchasing process, the fusion and integration of all possible retailing channels can be labeled as no-line retailing. As distinguished from multi-channel retailing, no-line retailing requires – in addition to a stationary outlet and an online channel – also the availability of an m-commerce channel (Heinemann 2015). According to expert opinion, in the future multi-channeling will not be enough to persist in the market, but retailers would have to integrate all available channels to provide consumers with a holistic, consistent and transparent offer of products and services (iBusiness 2013). Also a recent study on e-commerce by Nielsen (2014a) concludes that it is now time for retailers to create omni-channel experiences for consumers.

The increasing importance of no-line systems can also be seen when comparing the different customer types in online retailing. With 58 percent the so called channel hoppers make the largest group of online shoppers in the non-food sector. These consumers are typically also labeled ROPO (Research Online and Purchase Offline) or ROMPO (Research On Mobile and Purchase Offline) customers. Only 8 percent take all steps in the purchasing process online whereas in contrast to that 30 percent are "loyal offliners", consumers that neither search nor purchase online. The final 4 percent can be attributed to showrooming which refers to consumers that almost exclusively buy online but visit a stationary store before actually making a purchase (DMC 2013). However, according to a recent study conducted by DMC (2013) this structure will change substantially by 2020. Whereas today around 88 percent of purchase processes are completed offline, this number is expected to decrease to 55 percent in 2020. Consistent offline purchases are estimated to amount to 20-25 percent, whereas ROPO purchases will account for 30-40 percent (DMC 2013). With regards to the computer industry, a recent study by Nielsen (2014a) found that especially electronic equipment, mobile phones as well as computer hardware and software are more conducive to online browsing than buying. As these products can carry a high price tag they often require to be tried and tested by consumers before buying them. While 38 percent of online consumers intend to browse the web for computer hardware and 35 percent for computer software in the next six months, only 30 percent they would intend to buy computer hardware and 27 percent computer software online in the coming six months. However, what is interesting is that the global average of online purchase intentions in the next six months for computer software increased from 9 percent in 2011 to 27 percent in 2014, for computer hardware from 18 percent in 2011 to 30 percent in 2014 (Nielsen 2014a). Referring back to the different customer types in online

retailing, the remaining 35-50 percent will be no-line purchases where researching and purchase preparation cannot be attributed to an offline or online channel. This can also include the already mentioned showrooming, where consumers research offline but purchase online (DMC 2013). As purchases can also be made online in a physical store via a mobile device, also showrooming can represent a no-line purchasing process. Thus, stationary stores are expected to transform into showrooms where consumers can touch, feel, try and experience the products. However, as in many cases there would only be one exemplar of a product, consumers would not be able to directly take these with them. If they decide for a product they can order the product, for example with their smartphone via a QR-code, and have it immediately delivered to the store, home or to every other location (Heinemann 2015). A prominent example for this new kind of interaction is the UK retailer Tesco. The company identified that its South Korean customers are particularly time-starved and therefore developed a way to speed up food shopping. In a pilot program the company covered the walls of subway stations with remarkably lifelike backlit images of supermarket shelves, thereby bringing the store to consumers at a point in the day when they had time on their hands. Consumers who wanted to buy a product simply had to scan each product's QR-code with their smartphones, Tesco then delivered the purchased products to the consumer's home within a few hours (Ribgy 2011). Consumers do not have to decide in the store but can also order the product online for example when they get home. However, they not necessarily have to decide to order at the retailer where they viewed the product but can make the purchase at whichever retailer has the best offer. This has and will put an incredibly high pressure on retailers to complete a purchase (Heinemann 2015).

Referring to computers and related devices, although online browsing appears to outweigh online purchases, as these showrooms emerge giving consumers the possibility to immediately make a purchase online after having tried a product, it is also likely that the number of online purchases for computers and related products will increase.

2.1.1.2.4 Side effects on stationary trade

The continuous rise of e-commerce and the increasing penetration of mobile devices and mobile Internet has also led to a state of upheaval in stationary trade. In order to stay competitive in the long run, traditional retailers need to develop new strategies and adapt to a changed consumer behavior (Celko & Jánszky 2014). However, as online players are gaining and volume sales of traditional retailer are declining, the response of the latter often comes almost automatic: they cut labor, reduce costs and sacrifice service. Yet, with this approach

differentiation between online and offline retailers diminishes even more. Customers focus increasingly on price and convenience which, in turn, again strengthens online players. Thus, stationary retailers are well-advised to turn their stores – the one big feature that pure Internet retailers lack – from a liability into an asset. Hereof the integration of digital commerce into stationary trade and the establishment of successful omni-channel strategies should not only guarantee the survival of offline retailers but should also meet consumers' increasing demand and expectations towards benefits of both worlds, online and offline. Thus, in the future digital and physical areas complement each other instead of competing, and retailers that learn to take advantage of both can be expected to be well positioned for success (Rigby 2011).

According to Celko & Jánsky (2014) the retail sector is currently experiencing a shift in values on behalf of consumers; whereas a few years ago one could clearly separate the different market segments, economy, standard and premium, in the future there would be only two main segments, the economy and the premium segment. The reason for the gradual disappearance of the standard segment would be that until now all segments have been determined by the identical rational logic, the quality-price comparison. While low quality and low prices would be associated with the economy segment, high quality and high prices would be found in the premium segment. However, according to Celko & Jánsky (2014) the economy and the premium segment will operate according to different logics. The economy segment will be shaped by the comparison of quality and price in different levels, as it can be found today in online comparison portals. By 2020 intelligent shopping assistants on consumers' digital devices will emerge. While a few years ago shop assistants and expert advisors enjoyed the highest trust, in many segments trust is expected to shift towards these intelligent shopping assistants on consumers' digital devices. On the basis of profound data analysis obtained from customers' devices these assistants will deeply understand customers' needs and behaviors – much more than a shop advisor could ever do – and will accordingly give individualized and personalized recommendations. This is extraordinarily beneficial for consumers as they will get apposite offers (see also: M-commerce). Thus, stationary retailers that position themselves in the economy segment are well-advised to integrate digital commerce into their distribution strategies. Here the mobile phone or smartphone will play a key role as an intelligent shopping assistant, not only during the time spent in a store but also in consumers' everyday life. In contrast to that, consumers in the premium segment will make their decision not on the basis of rational logic but in order to express their identity. Here the

smart shopping assistant is not of any importance because consumers would decide for a product or service that suits their identity regardless of the quality-price-ratio. Thus, for retailers that would like to focus on the premium segment, it is necessary to offer customers the chance to identify their identity in shopping at a specific store, buying a certain product or talking to a particular shop assistant (Celko & Jánsky 2014).

In the future, it will be of considerable importance, especially for those retailers who position themselves in the premium segment – to provide customers with an additional emotional value that goes beyond mere shopping. Events, in-store technologies or communities are suitable measures for retailers to act as a social platform where customers have the chance to experience brands, get entertained and connect to like-minded people (Celko & Jánsky 2014). By providing these additional values to customers stationary retailers can clearly differentiate from online players. However, as already mentioned before, also more and more online pure plays have realized the importance of stationary trade and have decided to establish physical stores in addition to their online presence. Referring back to the computer industry, Google has just opened its first ever branded shop, The Google shop, in London where it will sell its own range of Android phones and tablets, Chromebook laptops and Chromecast TV services. In addition to mere retailing the company will offer its customers to engage in the store and interact with the immersive technology. In addition, the shop will hold tutorials showing how to use the devices and the most important Google apps (Telegraph 2015). Thus, Google offers its customers a place where they can play, experiment and learn about its products; thereby the company is exactly aiming at the before described try-before-you-buy experience. Another example for this new kind of engagement of customers in offline stores is Samsung. Samsung has already opened 4,800 of its so called "Samsung Experience Stores" worldwide, therefrom 30 in Europe. In 2014 the company opened its first store in Vienna. In addition to retailing, again customers have the opportunity to try and experience the company's products. What is more, also repair services are offered (Futurezone 2014b). The most prominent example of computer retailers running experience stores is probably Apple, which opened its first store already in 2001. In 2014, there were 437 Apple stores worldwide (Apple 2014). Apple's success is frequently even attributed to its chain of brick-and-mortar retail stores which it plans, runs and controls down to the minutest details. In 2011, Apple's annual retail sales per square foot (excluding online sales) amounted to 4,406 US dollar which is far higher than sales per square foot of Best Buy, a US-American electronics retailer, accounting for 808 US dollar. Apart from the store appearance itself, Apple intensively controls how employees interact with customers and provides scripted trainings for on-site tech-support. To the outside

a carefree and casual atmosphere is generated where sales associates are there to understand customers' needs and to help solve their problems rather than to close a sale. This is what has made customer experience so casual despite being precisely controlled. Many retailers have tried to copy Apple's in-store customer experience but only few have gone to Apple's lengths in orchestrating every detail. This might have helped Apple to stand out at a time when many other retailers found themselves in periods of decreasing sales (The Wall Street Journal 2011).

Another field of operation where stationary retailers can easily outperform their competition on the Internet in the future is the focus on services. Whereas online retailers typically have advantages when it comes to a mere purchase of products or price comparisons, traditional retailers can accommodate customers' increasing demand for convenience by offering home delivery, construction and set-up of furniture and devices, maintenance, repair but also the consultation at a customer's home (Heinemann 2015). According to Heinemann (2015), it is of great importance that all these services from a single source rather than transferring these tasks to external partners. As a matter of fact, many retailers have increasingly reduced their services offered to customers over the years. However, in times when online competition becomes continuously more severe the sale of products is highly likely not to be sufficient in order to survive. Thus, especially specialist retailers may be well-advised to focus on offering a range of individualized customer services (Heinemann 2015).

2.1.1.3 Big Data and its impacts on retailing

Big data is a trend everyone is currently talking about. Gartner (2015c) defined big data as *"…high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making"* where volume refers to the massive amount of data available, velocity to the unprecedented speed at which data is streaming and variety to the different types of formats data is generated.
Especially innovation of technology and the rapid rise of the mobile Internet and mobile devices has led to a tremendous growth of data (Heinemann 2015). Global data is expected to grow by a factor of 10 from 4.4 trillion gigabytes in 2013 to 44 trillion in 2020. Interestingly, the division of generated data between mature and emerging markets will switch from 60 percent accounted for by mature markets to 60 percent coming from emerging markets in the time period from 2013 until 2020. In 2013 only 22 percent of global data would be useful if it was tagged or characterized (a practice that results in metadata) and only 5 percent of that was

analyzed as it was found especially valuable. This percentage of useful data is forecasted to increase to 35 percent until 2020. One major reason for this rise is probably the growth of the so called Internet of Things (IoT). The IoT can be defined as a network connecting, wired or wireless, devices (things) and being characterized by automatic provisioning, management and monitoring. In other words, the IoT describes the computerization and the addition of software and intelligence to things. This has been a major growth spurt for the digital universe and has already become visible in the increase of data from embedded systems from only 2 percent in 2013 to estimated 10 percent in 2020. The IoT also goes hand in hand with new consumer and business behavior which will increasingly demand intelligent industry solutions. This, in turn, has opened up a tremendous growth potential for IT-vendors and companies that take advantage of the IoT (EMC 2014) (see The Global Software Market).

Thanks to enterprises increasingly exploiting analytics technologies also the percentage of so called "target rich" data is estimated to rise to over 10 percent until 2020. As global data continuously increases also the need for digital storage capacities goes up. However, the available storage capacity is growing slower than the digital universe; while in 2013 only 33 percent of global data could be stored, this percentage is forecasted to decrease to less than 15 percent by 2020 (EMC 2014). This has also led to a strong boost of cloud services, where a cloud can refer to any kind of network that is connected to the Internet (PCMag 2015b). Gartner (2015d) defines cloud computing as *"a style of computing in which scalable and elastic IT-enabled capabilities are delivered as a service using Internet technology."* In 2013 less than 20 percent of the data in the digital universe was either – perhaps temporarily – stored or somehow processed by the cloud. This percentage is estimated to double by 2020 (EMC 2014).

This already gives a hint on the tremendous and far-reaching consequences of Big Data. Despite affecting many markets, sectors and business areas, in the course of this master thesis the question arises how the massive availability of data may impact the retailing, and in more detail the computer retailing sector. The situation is relatively clear-cut; although the utilization of big data has just started out, it will play a key role in e-commerce in the future. With every click, every purchase and every "Like" online retailers easily collect a multitude of customer data. This gives them an obvious advantage over traditional retailers with physical outlets. However, in order to take advantage of the enormous amount of data a thorough analysis is necessary, something many enterprises have been struggling with. Yet, if companies manage to do so, big data can bring along a number of benefits, such as higher sales due to cross- and up-selling, fewer returns due to unique offers, more specific targeting

due to individualized banners or newsletters as well as eventually higher customer loyalty. In order to make a more targeted approach it will become more and more important for companies and manufacturers to predict customers' purchasing behavior; this goes hand in hand with assessing which measures cause which additional value for which customer segment at which cost. This, in turn, requires a quick analysis of the growing real-time data which has driven the demand for analytics and intelligence systems for simulation and prediction. Only by doing so, big data can be transformed into smart and useful data (iBusiness 2013). However, not only the demand for the corresponding software and systems but also for data analysts and IT-specialists is expected to grow substantially (Heinemann 2015). Here a major issue might be the persisting shortage of skilled staff; in the US alone the number of deep analytics roles is expected to grow to 181,000 by 2018 and five times that many positions will be required with related skills in data management and interpretation (IDC 2014d) (see The Global Software Market; The Economic Environment in Austria).

2.1.2 Scarcity of Resources and Climate Change

Another global development that has an exceptionally far-reaching and profound influence on our world as whole, nations, societies, businesses and consumers is the increasing scarcity of resources and climate change. Our world is characterized by depleting resources, however, as population will continue to grow potentially reaching 10 billion in 2050 so will the demand for energy, food and water. By 2030 global demand for food is expected to grow by 35 percent, whereas demand for energy is forecasted to rise by 50 percent (PWC 2015). Although technologic innovation has allowed to access to resources previously thought impractical or impossible to recover, our earth has only a finite amount of resources that can be used to satisfy this demand (EY 2015). The interconnectivity between resource scarcity and climate change only amplifies the impact; climate change could, for example, reduce agricultural productivity by up to a third in large parts of Africa over the next 60 years (PWC 2015). The ongoing mitigation of resources has given rise to its strategic value and competition so that governments will increasingly make efforts to secure their resources by means of taxes and regulations; protectionism and community activism are likely consequences. Thus, greater energy and resource efficiency are required at national, corporate and consumer levels (EY 2015).

Especially companies can play a leading role in mitigating environmental damage; here sustainability and CSR measures are regarded as a vital move as a response to profound environmental changes. The UNIDO (2015) defines CSR as the following,

"Corporate Social Responsibility is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. CSR is generally understood as being the way through which a company achieves a balance of economic, environmental and social imperatives ("Triple-Bottom-Line-Approach"), while at the same time addressing the expectations of shareholders and stakeholders."

By properly applying CSR concepts, companies can substantially profit from a number of competitive advantages, such as better access to capital and markets, increased sales and profits, cost savings, enhanced productivity and quality, efficient human resource base, improved brand image and reputation, higher customer loyalty, better decision making and risk management processes (UNIDO 2015). According to PWC (2015) CSR used to be a "luxury" companies liked to speak about, whereas now it is becoming the lens through which a business is judged by consumers, employees, investors and society. A study conducted by Nielsen (2014b) found that sustainability is among the factors that influence purchase decisions; 55 percent of global online consumers across 60 countries say that they are willing to spend more on products and services provided by companies that are committed to positive social and environmental impact.

Very closely connected to an increasing demand for energy and natural resources is also the usage of computers and ICT equipment. Around 8 percent of total energy expenditure within the European Community is accounted for by the operations of ICT equipment (Compuritas 2015). Continuous technologic innovation in recent years has led to a massive production and consumption of computing equipment (CPSR 2015). However, as digitalization takes its course, energy expenditure and the use of respective resources is expected to further increase in the future. The whole lifetime of a computer – its production, use and disposal – makes it closely tied to the environment. Although the use of computers drives energy expenditure, the major environmental impacts stem from its creation and disposal. Its production involves trace metals and also other substances – such as antimony, arsenic, cadmium, chromium, cobalt, lead, mercury and selenium – that may pose health hazards. What makes the impact of

computer production so environmentally harmful is also its energy-intensive and materials-intensive production. For an average 24 kilogram desktop computer at least ten times of this weight of chemicals and fossil fuels is required, whereas in contrast to that an automobile or refrigerator need only one to two times their weight in fossil fuels (Gajjar 2010). Then at the end of their lifetime – which can be quite short due to the rapid rate at which they are replaced by newer devices – computers create disposal challenges. Mountains of electronic garbage emerge, polluting the environment. Posed by hazardous materials recycling has often been impossible, which is why computers have long been treated as disposable items (CPSR 2015). However, recycling of computers has gained momentum in the sustainability movement. Indeed, a completely new movement of sustainability in the IT sector emerged, which can be labeled as "Green IT". Gartner (2007, in Jana 2008) defines green IT as the *"optimal use of information and communication technology (ICT) for managing the environmental sustainability of enterprise operations and the supply chain, as well as that of its products, services, and resources, throughout their life cycles."* Whereas, years ago computers were made out of un-recycleable parts, manufacturers have made attempts to reduce or even remove environmentally harmful materials from new devices. This has made many products more eco-friendly and also easier to recycle (Leader 2010). What is more, if computers and other electronic devices are recycled, less materials need to be obtained from nature which, in turn, decreases the impact of computer production on the environment (Gajjar 2010). ICT usage per se can lead to environmental benefits by enabling for example "paper-less" offices or online conferences and meetings. Also the increasing usage of cloud computing can help to improve sustainability (see Cloud Computing). By applying cloud services companies can reduce the number of internal servers which, in turn, reduces energy costs. Cloud providers, on the other hand, can consolidate their energy usage and make it more efficient by supporting numerous cloud customers with server capacity and application services, such as software-as-a-service. Also infrastructure-as-a-service via the cloud can do something environmentally good; cloud providers supply the infrastructure needed to support businesses running their own applications without requiring them to bring hardware services in-house (Savvas 2014).

The green movement of today has in many cases led to a rethinking of product evaluation; products are often not rated anymore on the basis of cost and benefit but rather based on the whole product life cycle, including production and disposal and its impacts on society and the environment. This has especially touched the computer and IT sector, being industries that are characterized by energy- and resource-intensive production, usage and disposal. This has

given much room for a potential ecologization of these industries (Compuritas 2015).

2.2 The Global Computer Hardware and Software Market

The next layer is the global computer hardware and software market which has especially been influenced by technologic innovation and the rise of digitalization. As retailing of computer hardware and software often represents the core business of Viennese computer retailers this layer is highly relevant for their internal environment. In the following, the major developments in the hardware and the software market will be described in greater detail.

2.2.1 The Global Computer Hardware Market

The computer market, as many other markets in the technology sector, is a highly dynamic and fast moving market. While global PC shipments recorded a strong increase of almost 21 percent from 296.1 million units in 2009 to 358 million units in 2010 peaking at 364 million unit shipments the year after, a sharp downswing started in 2011. In 2013, total PC shipments even slumped by almost 11 percent to a level of 315.1 million units, where desktop PCs comprised 136.7 million and portable PCs accounted for 178.4 million units (IDC 2014a). One major factor that has substantially influenced the shrinkage of the PC market was the introduction of new product types, such as tablets. Tablets refer to portable devices based on a touchscreen display and include an on-screen keyboard for content entry (Gabler Wirtschaftslexikon 2015a). When tablets became popular in 2010 and consumers started diversifying their device portfolios, the outlook for desktop and other portable PCs has been somewhat dampened. Whereas worldwide tablet shipments comprised only 19 million units in 2010, two years later this number already stood at 145 million shipped units. The desktop and portable PC displacement by tablets peaked in 2013 when worldwide around 220 million tablets were shipped. This corresponds to a growth rate of over 50 percent (IDC 2014b). However, as penetration in key markets increases, tablet sales growth is declining and consumer spending is slowly shifting back to PCs, especially in the USA and Western Europe (Gartner 2015). Whereas according to IDC worldwide PC shipments amounted to 308.6 million units in 2014 which corresponds to a decline of 2.1 percent compared to the previous year, Gartner calculated only a slight decrease of 0.2 percent to a level of 315.9 million unit shipments (Futurezone 2015). In the fourth quarter of 2014 worldwide PC shipments even experienced a slight increase of 1 percent compared to the same period in 2013, reaching a level of 83.7 million units according to Gartner (2015). IDC calculated worldwide PC

shipments being around 80.8 million units in the fourth quarter of 2014. Although, according to Gartner (2015) this indicates a slow but consistent improvement of the PC market, overall volumes declined the third consecutive year and also long term PC sales are expected to decrease to a level of around 290 million units until 2018 (IDC 2014a). Comparing the markets, especially mature markets such as Western Europe and the United States show an ongoing trend of positive growth. In the United States PC shipments even grew by 13.1 percent from the fourth quarter of 2013 to the fourth quarter in 2014 which represents the fastest growth in the market in the last four years. This strong increase is attributable to the sale of mobile PCs which includes regular notebooks, thin and light notebooks and two-in-ones (laptops with a detachable or bendable screen) (Gartner 2015). Also the Windows XP to Windows 7 upgrade in the business segment supported the positive development (IDC 2015). IDC expects the US PC sales to slightly grow in 2015 thanks to ongoing replacement of older PCs, the slowdown in the tablet market and the launch of Windows 10. Also in Europe, Middle East and Africa PC shipments experienced a slight growth of 2.8 percent from the fourth quarter of 2013 to the same period in 2014, driven by strong sales of low priced notebooks in Western Europe. Consumers were especially interested in replacing older tablets and notebooks with two-in-ones that combine features of both devices. Also the Asia-Pacific region showed an increase of 2 percent of PC shipments from the fourth quarter of 2013 to the fourth quarter one year later. However, whereas in more mature markets replacement demand seems to be recovering, PC sales in emerging markets (especially in China and India) remain weak (Gartner 2015). According to Gartner (2015) this is attributable to the prevailing affinity towards smartphones and tablets combined with a limited disposable income.

With a market share of 18.8 percent (59.4 million PC shipments) Lenovo was the top-selling PC vendor in 2014, followed by Hewlett-Packard (HP) reaching a market share of 17.5 percent (55.3 million units). With a market share of 29.2 percent in the fourth quarter of 2014 HP was again ahead of competition in the United States reaching market leader position. Whereas on a global basis Dell ranked as the third largest PC vendor accounting for 12.8 percent of worldwide PC shipments, it constitutes the second largest vendor of PCs in the US (22.6% market share in the fourth quarter of 2014) followed by Apple (11.7%) (Gartner 2015). Also IDC (2015) ranks Lenovo, HP and Dell as the top three PC vendors in 2014, reaching a market share of 19.9, 19.7 and 13.5 percent respectively. However, with a market share of 7.7 percent the Acer Group takes the fourth position in the IDC ranking, ahead of Apple with a market share of 7.1 percent (IDC 2015).

Massive growth of mobile devices

The evolution of new product types, such as the tablet, as well as the strong growth of smartphones has considerably influenced the conventional PC market in the last few years. Especially the introduction of the **tablet** has put a damper on PC sales. Gartner defines a *media tablet* as follows (Gartner 2015b):

*"A **media tablet** is a device based on a touchscreen display, typically multitouch, that facilitates content entry via an on-screen keyboard. The device has a screen with a diagonal dimension that is a minimum of five inches. Media tablets feature connectivity via Wi-Fi or via 3G/4G cellular networks. Tablets typically offer day-long battery life, and lengthy standby times with instant-on access from a suspended state. Examples of media tablets are the Apple iPad, Samsung Galaxy Tab, Acer Iconia HCL ME X1, Micromax Funbook, Milagrow TabTop."*

Whereas some companies had already produced tablets in the 1980s, this new device only found extensive favor with consumers in 2010 when Apple launched the first touchscreen tablet, the iPad. With the introduction of the iPad, which sold 19 million times only in 2010 and generated billion dollar revenues for Apple on a quarterly basis since then, a true tablet hype emerged. Due to Apple's rapid success with the iPad, also other companies, such as Samsung, Lenovo, Asus and Amazon, wanted a share of the pie and started introducing their own tablets. However, none of them has managed to reach a market share anywhere near Apple, making it the leading tablet vendor since the launch in 2010 (Statista 2015a). Indeed, increasing competition did have an impact; whereas in the second quarter of 2011 Apple held a market share of 61.5 percent, followed by some ups and downs, its share decreased to 28.1 percent in the fourth quarter of 2014 (IDC 2015b). Apple's closest competitor is Samsung which saw its market share rise from 7.3 percent in the second quarter of 2011 to 14.5 percent in the fourth quarter of 2014, peaking at 22.3 percent in the first quarter of 2014. Overall, with a focus on mid to high tier tablets Samsung managed to sell more than 40 million units in 2014. Lenovo (4.8%), Asus (4%) and Amazon (2.3%) round out the top five tablet vendors, where only Lenovo managed to grow compared to the holiday quarter in 2013. Lenovo offers a very deep assortment with tablets of almost all screen sizes and on both operating systems Android and Windows.

In 2013, worldwide tablet shipments comprised 220 million units, where over 25 percent (58.5 million units) were shipped in the Asia/Pacific region, making it the number one region

for tablet shipments. Until 2017 shipments in this area are expected to further grow and even reach 100 million units by then. Ranking as the second largest region for the shipment of tablets, Europe is expected to increase its tablet shipments from 61 million to 101.7 million units in 2017 (IDC 2015b).

However, considering recently published sales figures it can be concluded that the market has slowed down and the hype around tablets is more or less over. According to IDC (2015b), worldwide tablet and two-in-one device shipments in the fourth quarter declined at a rate of 3.2 percent from 78,6 million devices in 2013 to 76.1 million devices in 2014, which represents the first decrease of tablet shipments since the market's inception in 2010. Despite the negative growth in the holiday period, the global market increased by 4.4 percent in 2014, reaching a level of 229.6 million shipped units. In order to counteract the slowdown of the market and to withstand increasing competition from low-cost vendors as well as cannibalization from the iPhone and the Mac, market leader Apple kept older iPad models and reduced the entry price point. However, these efforts were not enough to drive iPad sales. Also Samsung has struggled against increasing sales of low-cost tablet vendors showing that the tablet market has changed with consumers increasingly opting for cheaper devices (IDC 2015b). However, despite the slow-down of the market, according to IDC (2015b) tablet sales will grow in 2015, mainly spurred by Microsoft's new Windows 10, larger tablets and new technology innovations, e.g. gesture interface, that may be introduced in tablets.

As already mentioned, also the introduction and the growth in popularity of the **smartphone** has considerably influenced the computer market. A smartphone refers to a mobile device that runs an advanced operating system – Apple's iOS, Microsoft's Windows and Google's Android being the most popular ones these days – and that offers similar functions to those found on PCs (Phone Scoop 2015). Whereas with this new device type the phone function only plays a secondary role, a smartphone allows its users a number of additional functions and features, such as web-browsing, e-mail services, an integrated camera, a music player and GPS navigation. What is more, there are mobile applications (apps) – free and paid – that can be downloaded and used on the smartphone (PCMag 2015). In 1994, IBM and BellSouth introduced the first touchscreen phone, the Simon Personal Communicator, which was later touted as the first smartphone. In addition to receiving and making phone calls, this new device was able to send e-mails, faxes and messages as well as featured applications such as a calendar, an appointment scheduler, a calculator and a world clock (Spin Fold 2015). However, it was only in the mid to late 2000s when smartphones – such as Microsoft's

Windows Mobile, the BlackBerry or Nokia's Symbian Devices – started to gain popularity, prevalently among business users though. In 2006, Nokia launched entertainment-focused smartphones which were operated by the Symbian operating system. Nokia's devices attained great success and allowed the company to dominate the global smartphone market until 2010, reaching a peak of almost 60 percent market share in the fourth quarter of 2007 (Statista 2015b). However, this success ended dramatically as in 2007 Apple introduced its iPhone, a smartphone as it is widely known today, featuring a HD touchscreen, high-speed mobile Internet and numerous mobile applications. Sensing the huge potential of this new device, also other firms, such as Samsung, HTC and Sony Ericsson – being mainly operated by Google's Android – entered the market (Statista 2015c). Whereas at the beginning of 2009 Android's global market share accounted for not even two percent, Symbian operated devices reached almost 50 percent market share. After a rapid increase, Android took the lead already in late 2010 and has continued its rise since then (Statista 2015d). With the aim to make a comeback in the smartphone market, Nokia changed the operating system of its devices from Symbian to the Microsoft operating system in 2011. However, also this switch could not stop Nokia's dramatic downfall in the smartphone market (Statista 2015b).

While in 2009 global smartphone shipments comprised 173.5 million units, the smartphone market experienced an incredible growth year after year, surpassing the one billion mark already 4 years later in 2013 (Statista 2015e). Thanks to holiday seasonality, strong end user demand and a deep selection of models, also 2014 showed another year of sustainable growth with global smartphone shipments growing by 27.6 percent to a level of 1.3 billion units. However, reaching a growth rate of 40.5 percent in 2013 one can clearly notice that the market has slowed down. Indeed, as penetration in mature markets increases smartphone vendors are evermore dependent on replacement purchases rather than first-time buyers. This is also expected to be mirrored in a slight decline of global shipments in 2015. From then on, the market is expected to return to positive growth, partly fuelled by the high percentage of first-time buyers in emerging markets. However, the focus has shifted towards low-cost devices which has created a different dynamic for local and global vendors (IDC 2015d). Yet, positive growth is expected to maintain with global unit shipments reaching 1.87 billion in 2018 which would correspond to a tenfold increase compared to 2009 (Statista 2015e).

Although the smartphone market is relatively young its vendor scenario has already seen some considerable shake-ups. While in its early years Nokia dominated the market and BlackBerry found a substantial foothold prevalently in the business segment, both vendors only play a minor role in today's global smartphone market. On the other hand, there is

Samsung which managed to continuously expand its market share and emerged as the number one smartphone vendor as measured by unit shipments. While Samsung mainly battles with Apple in the high end smartphone market, there is increasing competitive pressure rising from low-cost vendors such as Lenovo, Huawei and Xiaomi (Statista 2015f). With unit shipments of 318.2 million and a market share of 24.5 percent Samsung remains the market leader in the global smartphone market in 2014. However, considering the fourth quarter of worldwide unit shipments in 2014 this was just a very tight win, with Apple reaching a new quarterly shipment record of 74.5 million units compared to Samsung's 75.1 million unit shipments. Led by the launch of its new iPhone generation featuring larger screens, Apple managed to increase its unit sales by 44 percent in the US, being considered a mature market, and by astonishing 97 percent in the BRIC (Brazil, Russia, India, China) countries, where especially China is characterized by a high local dominance of smartphone vendors as well as high price sensitivity. What can also be considered remarkable is that with its new iPhone models Apple even increased its average selling prices in a market that is characterized by rapidly declining prices on an average. All this allowed the company to reach a market share of 14.8 percent shipping 192.7 million units in 2014. Thanks to the acquisition of Motorola, Lenovo managed to surpass Huawei by shipping 96.5 million units in 2014 and thus accounting for a market share of 7.4 percent. By emphasizing its mid-range and high-end smartphones Huawei reached a volume share of 5.7 percent and thus ranks fourth among the top smartphone vendors in 2014, followed by LG accounting for 4.6 percent of the market (IDC 2015d).

With regards to smartphone operating systems, by reaching a combined market share of 96.3 percent of total shipments in 2014 Android and iOS again inched closer to dominate the global smartphone market. With unit shipments of over one billion – a unit mark it passed for the first time – Android accounted for a market share of 81.5 percent with Samsung remaining the number one Android operating smartphone vendor. Although Samsung shipped more smartphones than the Asian vendors Huawei, Lenovo, LG Electronics, Xiaomi and ZTE together, they were the ones which mainly drove Android's growth in 2014. Fueled by the launch of its larger smartphone devices, Apple managed to increase its iPhone shipments by 25.6 percent to 192.7 million units in 2014 while its market share faced a slight decline to 14.8 percent. Ranking third among the leading operating systems, Windows saw a slight decrease of its market share to a level of 2.7 percent in 2014 and also only experienced a small increase in unit shipments of 4.2 percent. After having finalized the acquisition of Nokia, Microsoft no more only offers rather high-end devices with Samsung and HTC being the most important vendors but has extended its range to entry-level devices. While shipping

19.2 million smartphones in 2013, BlackBerry experienced a considerable decline in shipments of 69.8 percent to a level of 5.8 million units in 2014, accounting for a total market share of only 0.4 percent (IDC 2015c).

All this again stresses that today's smartphone market is highly dynamic and continuously shaped by competitive pressures.

Since the introduction of the smartphone, vendors launched devices with continuously larger displays which has emerged as a whole new category of device, labeled "**phablet**". Phablets refer to smartphones with screen sizes between 5.5 and 7 inches, thus represent a mixture of usual smartphones and tablets. In 2014 worldwide phablet shipments are forecasted to reach 175 million units which would be just below global unit shipments of portable PCs. Also the upcoming years are expected to see a substantial growth of phablet unit shipments; until 2018 unit shipments are forecasted to increase more than three-fold to a level of 592.9 million. As also Apple's new generation of the iPhone features a larger display, phablets appear to become the new norm in the smartphone market (IDC 2014c). IDC (2014c) forecasts phablets to account for 14 percent of the global smartphone market in 2014 as well as more than a duplication of this number to a level of 32.2 percent in 2018. With an expected 318 million unit shipment of phablets, they will most likely surpass global tablet shipments (233 million units forecasted) already in 2015. This illustrates the pressure this new device has already put on the global tablet market. As more and more consumers choose phablets as their preferred smartphone device, they will most likely prefer larger-sized tablets to replace their older devices. This is already mirrored in a slow-down of smaller-sized tablet sales and a general slow-down of the whole tablet market.

According to IDC (2014c), consumers in mature markets are expected to own a combination of PCs, tablets and smartphones with the smartphone most likely being the connected device of choice. This can also be seen when comparing total unit shipments of desktop PCs, portable PCs, tablets (including two-in-ones), phablets and smartphones, where already in 2014 smartphones and phablets together are expected to account for 70 percent of the so called "Smart Connected Device market". This number is forecasted to increase to 75.6 percent by 2018 (IDC 2014c). To sum up, the global computer hardware market is a vibrant market and has been continuously stirred up by technologic innovation and the corresponding emergence of new devices. This not only requires computer hardware manufacturers but also retailers to quickly adapt to new market dynamics and consumer demands.

2.2.2 The Global Computer Software and IT-Services Market

The global software market has evolved from non-existent into a multi-billion dollar industry in less than a century. Today, software is the basis for numerous devices, such as the PC, tablets or smartphones (Statista 2015g). Trends like digitalization, big data and mobility have considerably influenced the global computer software market and are also predicted to do so in the future. New technologies emerge on a continuous basis and it is the task of the IT-organization to integrate these in the enterprise. Also the decreasing barriers between private and business IT increasingly challenge IT departments (Computerwoche 2014). What is more, as devices and appliances increasingly transform into "smart" devices, the global software market will continue to rise and evolve in the future (Statista 2015g).

According to Gartner (2014a), the global software revenue totaled 407.3 billion US dollar in 2013, which corresponds to a 4.8 percent increase in revenue from 388.5 billion US dollar in 2012. IDC (2014e), on the other hand, calculated a total market size of 369 billion US dollar on the basis of revenues for 2013 and a corresponding growth rate of 5.5 percent compared to 2012 revenue of 349.6 billion US dollar. For 2014, IDC forecasts that the global software market will grow by 5.9 percent in terms of revenue and it believes that the compound annual growth rate for the 2013 to 2018 forecast period will remain close to 6 percent (IDC 2014f). The top five worldwide software vendors in 2013 on the basis of revenues were Microsoft, IBM, Oracle, SAP and Symantec. With revenues of almost 66 billion US dollar reaching a market share of 18 percent, Microsoft is well ahead of its competitors. The company is followed by IBM and Oracle which are nip and tuck in terms of revenue share – both account for around 8 percent market share – so that Gartner (2014a) and IDC (2014e) rank it in different positions; in Gartner's ranking Oracle is number two whereas this position is acquired by IBM in IDC's ranking for 2013. In both rankings SAP (4.9%) takes the fourth place and Symantec (1.7%) ranks fifth, whereas other companies amount to a compound market share of almost 60 percent (Gartner 2014a; IDC 2014e). A more recent development shows that at the other end of the scale in the global software industry there are more and more freelancers working on an independent basis to create software, particularly various apps for smartphones and tablets. As the penetration of computers and especially the Internet rises, programming has become far more accessible (Statista 2015g). However, due to the shortage of app developer talent, IT-organizations cannot keep pace with the exploding demand for mobile apps. The result is a backlog of mobile apps – many of which are replacements for existing apps – that need to be built. However, it has also been found that a

major driver for this problem is that many IT-organizations are still overly dependent on their internal resources. In order to tackle this issue IT-organizations would be well-advised to, at least partly, outsource their IT development (channelinsider 2014).

When considering the different operating systems markets for PCs, tablets and smartphones they tend to be dominated by a few large companies, as already described in the previous chapter. The leading global IT service vendors in 2012 were IBM, HP, Fujitsu, Accenture and CSC (Statista 2015h).

On the basis of thorough literature review, the following key developments have been identified within the global software and IT-services market. For clarification, Gartner (2014b) defines a strategic technology trend *"… as one with the potential for significant impact on the organization in the next three years. Factors that denote significant impact include a high potential for disruption to the business, end users or IT, the need for a major investment, or the risk of being late to adopt."*

Big Data Analytics

The phenomenon of Big Data has already been described in the course of the digitalization trend and will be carried on in the context of the global software market. In 2012, the global Big Data market was estimated to reach 11.3 billion US dollar, a rise of 58 percent compared to 2011 figures. Projections show that rapid growth will also continue in 2013 (growth rate of 59%) and 2014 (54%) before the market will slow a little. Until 2017 the market is forecasted to amount to almost 50 billion US dollar. In terms of global revenues, in 2012 the three most important segments in the global big data market were professional service accounting for 34 percent, computing accounting for 22 percent, and storage accounting for 16 percent (Wikibon 2013).

In order to make sense of Big Data more and more firms engage in sophisticated business analytics software. This brings along tremendous opportunities for IT service providers (Laudon & Traver 2014). However, as the volume of available data increases, also security concerns arise. In 2015, the application for holistic and integrated security breach prevention will be of considerable importance for enterprises. On behalf of consumers, the increasing demand in privacy will drive tools and services that enable consumers to determine if and how their data is shared (IIA 2014). However, not only data analytics and security programs but also buying and selling of data will gain in importance. According to IDC (2014g), in 2014 already 70 percent of large organizations purchased external data and 100 percent said

that they will do so by 2019. At the same time, more and more organizations are expected to start selling their own data (IDC 2014g). According to IIA (2014), investments in the generation of new and unique data by companies will double in 2015.

Very closely connected and commonly regarded as an integral part of Big Data are also the following two trends: The Internet of Things and Cloud Computing.

The Internet of Things

The Internet of Things (IoT) has already been briefly mentioned in a previous chapter (see Big Data and its Side effects on stationary trade). It is often referred to as the Industrial Internet and in simple terms describes the use of the Internet to connect a wide variety of devices, machines and sensors. Increasingly, Internet technology is spreading beyond computers, tablets and smartphones to consumer electronics, cars, medical devices utility systems, machines of all types and basically to anything that can be equipped with sensors. These sensors collect data and connect to the Internet so that data can be analyzed by analytics software. Among the main drivers for the rise of the IoT are the availability of low-cost sensors, the decrease in price of data storage, the development of Big Data analytics software as well as the implementation of IPV6 which enables the assignment of Internet addresses to all those new devices. The top regions for IoT funding and research are the European Union and China as well as in the US companies such as IBM. As more and more intelligent "things" are invented, this development is set to considerably influence several industries in the future (Laudon & Traver 2014). Especially IT-vendors are highly likely to substantially profit from this development (EMC 2014). Although it will take some time until the IoT is fully realized, according to predictions already in 2020 there could be up to 100 billion uniquely identifiable objects connected to the Internet (IEEE Computer Society, in Laudon & Traver, 2014, p. 136).

Cloud Computing

Another major trend that is set to substantially impact many industries, especially the global software and IT services market, in the future is cloud computing. Gartner (2010) defines cloud computing *as a style of computing where scalable and elastic IT-related capabilities are provided as a service to external customers using Internet technologies."* In simple terms, cloud computing refers to software, services and computing power that is offered to firms and individuals over the Internet via network-based distribution channels. Thus, in cloud computing the purchase and installment of hardware and software on individuals' or firms'

own computers is not necessary. Enterprises can profit from cloud computing in terms of a reduction of hardware and software costs through licensing via the web instead of owning, as well as in terms of reduced labor costs as firms do not need to hire IT staff to support the infrastructure (Laudon & Traver 2014). Whereas in public cloud computing services are delivered to external customers by third-party providers, in private cloud computing services are delivered to internal customers by IT (Gartner 2010). Referring back to retailing, cloud computing also has many significant implications for e-commerce. As necessary hardware infrastructure and software of building and operating websites can be licensed from IT service providers at much lower cost than purchasing these services as products, cloud computing can radically reduce costs for companies engaging in e-commerce. Consumers, on the other hand, can profit from cloud computing in the sense that they do not require a powerful, expensive PC anymore to engage in e-commerce but can use less expensive tablets or smartphones (Laudon & Traver 2014). Although companies can potentially save money by engaging in public cloud computing, there are still concerns about security, data management, trust, control and performance (Gartner 2010). What is more, another severe risk might be the increasing dependence on cloud service providers when engaging in cloud computing (Laudon & Traver 2014).

Around the world more and more businesses and individuals are switching to cloud based services. According to Gartner (2013a) cloud computing is currently the fastest growing form of computing with an estimated market size of global public cloud computing of around 131 billion US dollar in 2013, up from 111 billion US dollar in 2012. The market is expected to further rise to almost 210 billion US dollar in 2016 which would correspond to a CAGR of 17.7 percent from 2011 to 2016 (Gartner 2013b). Between 2013 and 2016 Gartner predicts that overall 677 billion US dollar will be spent on cloud services worldwide, the main growth drivers being the increasing demand for cloud services from end-user organizations as well as the adoption of cloud services for production systems and workloads.

In the cloud computing market it can typically be distinguished between different sectors, among which the most prominent ones are Software as a Service (SaaS), Infrastructure as a Service (IaaS), Platform as a Service (PaaS), cloud advertising and cloud business process services (BPaaS). With an expected growth rate of 47.3 percent in 2013 from 6.1 billion US Dollar in 2012 to 9 billion US Dollar in 2013, the IaaS, including cloud compute, storage and print services, is the fastest growing segment. The largest segment, on the other hand, is cloud advertising, which comprised 48 percent of the total market in 2012. Accounting for 28

percent of the total market in 2012, BPaaS is the second-largest market segment, followed by SaaS (software provided over the Internet) comprising 14.7 percent, IaaS (infrastructure services) accounting for 5.5 percent, cloud management and security services at 2.8 percent and PaaS (cloud application infrastructure services) at one percent (Gartner 2013a). For companies especially SaaS is believed to have a major impact. The reason for that is that as opposed to IaaS which offers only a few, very specific applications, SaaS applications can quickly be implemented and rolled out on a global basis (Praxmarer 2014).

Although forecasted growth rate for cloud services is generally high across all regions, the market size and growth can vary greatly across nations. While the emerging markets in Asia/Pacific, Latin America, Eastern Europe, the Middle East and North Africa show the highest growth rates, they represent the smallest overall markets, with the only exception China being a large and growing market. On the other hand, mature markets in North America, Western Europe, Japan and countries in Asia/Pacific represent larger but slower growing markets. Accounting for 59 percent of all new spending on cloud services from 2013 until 2016, North America will remain the leading region also in the future. With a share of 24 percent of worldwide spending in the same time period, Western Europe is the second largest region. Yet, in terms of growth rates, the emerging regions of Asia/Pacific, Greater China and Latin America will lead the ranking also in the future. IT service providers that aim to establish a stake in the global cloud services market need to take into account these considerable differences (Garnter 2013a).

Also Austrian businesses have already engaged in cloud services. In 2014, 12 percent of Austrian enterprises used fee-based cloud services on the Internet, whereby company size made an important difference here (24% of the large, 17% of the medium-sized and 10% of the small companies use these services). The most prevalent usage area for Austrian companies is the storage of data (54% of companies that use cloud services), followed by e-mail services (51%). 33 percent use office software in the cloud, 31 percent use it for corporate data bases and 23 percent engage in finance or accounting or CRM software in the cloud. 16 percent of companies that engage in cloud services use it in order to gain computing capacity for their own software. Also among Austrian consumers the usage of cloud services becomes more and more popular; every third person used it between April and June 2014. The number of cloud users is highest in the age group between 16 and 24 (69%). Overall 23 percent of the 16 to 74 year olds used cloud services, where the purpose ranged from saving and sharing photos (82%) to text documents, tables or presentations (60%) to music (32%). 75

percent used these services in order to access the data from different places or different devices while 72 percent appreciated the convenient sharing of data with others (Statistik Austria 2014a).

IT Outsourcing and Rural Sourcing

IT outsourcing or offshore outsourcing refers to the use of service providers for delivering IT enabled business processes, application services and infrastructure solutions. According to Gartner (2013c) the worldwide market for IT outsourcing services can be valued at around 288 billion US dollar in 2013, a 2.8 percent increase compared to 2012. Although SaaS impacts the IT outsourcing market it is not included in this estimate but rather is considered part of the software market. In comparison, after a Forrester Research (2013) the business and government spending on IT outsourcing and hardware maintenance – including spending on networks and other outsourcing, infrastructure outsourcing, hosting, computer hardware and support services and application management – is estimated to amount to more than 400 billion US dollar in 2013. According to both sources, global IT outsourcing is expected to grow in the next few years. In 2012, the top locations for offshore outsourcing for Western European companies were India, Poland, Brazil and China (Gartner 2012a). However, especially in the US rural sourcing – where IT is outsourced to a domestic external service provider – has become an attractive alternative to offshore outsourcing. The main advantage is the combination of the value of a domestic provider, such as compatibility in terms of language, business culture and time zone, corporate social responsibility, data privacy regulations and geopolitical stability, and the advantage of lower cost labor (Gartner 2012b). According to Stan Lepeak, global research director for KPMG Advisory, some companies may decide to insource IT services that have been outsourced before (CIO 2014).

With reference to Austrian companies, IT outsourcing generally only seems to play a minor role. Whereas programming services of standard software are frequently outsourced to low-cost countries, more complex IT services are mostly operated by companies themselves. According to a survey among Austrian executives, not even every third would outsource operation, support and maintenance. Also system support and diverse network services are rather subject to in-country execution (AMS 2015). However, rural sourcing might rather be an option for Austrian companies.

2.3 The Economic Environment in Austria

After a thorough description of global trends that potentially influence the Viennese computer retailing sector, the analysis will be continued on a national level. As a first step, the Austrian economic environment will be described. Naturally, economic developments impact companies that operate within this environment making it relevant subject of analysis.

The Austrian economy is currently in a period of stagnation with only moderate economic growth forecasted for 2015 and 2016 (IHS & WIFO 2014, in Sklenar 2015, p. 8). According to WIFO (2014, in Sklenar 2015, p. 8) the Austrian economy experienced only a small increase of 0.4 percent in 2014; the main reasons for this being the continuous reluctance to invest on behalf of companies, weak consumer demand and only sluggish developments in foreign trade. With a forecasted GDP growth rate of 0.5 percent by WIFO (2014, in Sklenar 2015, p. 8) and 0.8 percent by IHS (2014, in Sklenar 2015, p. 8) for 2015 and 1.1 percent and 1.6 percent respectively for 2016, economic growth will remain moderate. One driver for this development is weak private consumption, which is expected to grow by only 0.4 percent in 2015 and 0.7 percent in 2016 (WIFO 2014, in Sklenar 2015, p. 8). This, of course, considerably impacts also the retailing sector. The restrained consumer demand can be partly attributed to the moderate income development. Inflation accounted for only 1.5 percent in 2014; however, this number is still higher than the average in the European Union (0.6%) and the euro zone (0.4%) (Eurostat 2015b). The subdued inflation can mainly be attributed to the sharp drop in the oil price at the end of 2014. IHS (2014, in Sklenar 2015, p. 9) and WIFO (2014, in Sklenar, p. 9) forecast inflation to 1.6 or 1.5 percent for 2015. What is more, any easing is not expected to take place at the labor market. The strong increase in labor supply keeps unemployment at a high level. WIFO (2014, in Sklenar 2015, p. 9) calculated an unemployment rate of 7.6 percent for 2014 and expects this number to increase to 8.9 percent in 2015 and 9.3 percent in 2016. With an unemployment rate of 11.6 percent in 2014, the number of jobless people is highest in Vienna. Regarding company insolvencies, the situation slightly improved in 2014; with a total number of 5,423 there were 0.7 percent less insolvencies than in 2013. However, unlike the nationwide development, the number of firm bankruptcies in Vienna increased by 4.1 percent in 2014. Nationwide, also the number of insolvencies of private individuals and former self-employed people decreased by 7 percent in 2014 (8,414 in total). One reason for the reduction of bankruptcies may be the cautious granting of credits on behalf of Austrian banks since 2008. Referring to former self-employed people or firms that are liable for their debts, they represent 30 percent of all cases but 70

percent of total debts. Prevalent reasons for insolvencies were mistakes in terms of formation, a lack of capital or managerial failures (Sklenar 2015).

Referring back to Vienna, according to Michael Häupel, mayor in Vienna, it is of considerable importance to invest rather than to save money in order to escape the crisis (in Sklenar 2015, p. 12). In terms of investments, the focus is on the growth areas Life Sciences and ICT. According to Gerhard Hirczi, head of the Wirtschaftsagentur Wien, the positioning of Vienna as a leading hub for start-ups in Europe is of great importance to strengthen its economic situation and development (in Sklenar 2015, p. 12). In 2014, 37,120 new firms were founded in Austria, where Vienna accounted for 8,150 new foundations (WKO 2014). However, what might somewhat put a damper on this goal, is the underdeveloped venture capital market in Austria compared to other countries in the European Union. Venture capital investments only accounted for 0.009 percent of the GDP in 2013. The main barriers can be regarded as the unfavorable legal framework as well as structural problems such as unwillingness of venture capitalists to invest in early stages and ambiguity in terms of the treatment of non-incorporated firms as venture capital funds. This may substantially hurt the growth prospects of new companies which may be vital for long-term growth of the Austrian economy (Marketline 2014). Also the limited access to capital, as mentioned above, might be a major barrier for companies to grow (Sklenar 2015).

Thus, it can be concluded that companies operating in Austria encounter a well-diversified market economy with strong macroeconomic fundamentals. However, there are some barriers and hurdles – such as weak consumer demand and the access to capital – that firms face and need to overcome.

2.4 The Austrian computer retailing sector

As a next step the computer retailing sector and in the broader sense also the electronics retailing sector in Austria will be shortly described. All the before mentioned global and national developments and trends have been impacting and consequently stirring up the Austrian computer retailing sector. In the following the most important characteristics and developments will be explained.

Structure and competitive landscape

In terms of the number of retail outlets, the Austrian electronics retail sector is dominated by Electronic Partner, Red Zac/Euronics Austria and Expert. These three groups of companies account for 700 of the currently 940 retail outlets in Austria, thus making a share of over 70 percent. Another important player in the sector is Hartlauer with 140 retail outlets in Austria. With 50 outlets, the company is followed by Media Markt and Saturn which both belong to the Metro group. Although in terms of physical locations the Metro group only accounts for a 5 percent share in the market, it is one of the biggest players when it comes to revenues (RegioData 2014). In 2013, Media Markt and Saturn together reached a market share of 23 percent (Futurezone 2013). In general terms, what is observable in the sector is a continuous reduction of retail outlets over the years. Whereas about five years ago there were about 1,200 retail outlets of organized electronics retailers, more and more shops have closed over time. A main driver of this development is the considerable number of insolvencies in the sector, the most prominent examples being DiTech, Cosmos and Niedermeyer; together these retail chains amounted to 150 outlets that had to be closed (RegioData 2014). But also other retail chains that still operate have considerably reduced the number of their physical outlets between 2005 and 2013; the number of Electronic Partner outlets decreased from 750 to 610, those of Red Zac from 230 to 181 and the ones from Expert from 220 to 187 outlets. Only Hartlauer, Media Markt and Saturn as well as Conrad increased the number of physical stores in this time period (RegioData 2013).

Whereas in the offline world an increasing concentration towards larger retail chains seems to take place, severe competitive pressures have been coming from online players such as Amazon. Accounting for around 26 percent of total sales in the electronics and computer sector in Austria in 2013, online retailing has already established as a major distribution channel in the sector and is expected to become even more important in the future (RegioPlan Consulting 2013). Whereas some retailers integrated an online channel right from its early beginnings, others it took longer. Despite the considerable competitive pressures from online retailers such as Amazon or eBay, Europe's biggest consumer electronics retailer, Media Markt-Saturn, has entered late into the Internet business. Whereas Saturn established a multi-channel distribution system in 2011, Media Markt opened its online shop in early 2012 (Futurezone 2014a). However, the intended affiliation of the online and offline channel did not leak to consumers which is why the retail group developed a new multi-channel strategy in 2014. According to Ditmar Krusenbaum, CEO of Media-Saturn in Austria, all stationary outlets will be modernized in a step-by-step approach and will be equipped with screens so

that shop assistants as well as customers have the possibility to check the availability of products. The aim would be to show a pre-selection of products in stores and to offer all products online. Customers would have the possibility to pick up products at a Media-Saturn store that have been ordered in the online shop, but also to have products delivered home that have been seen in a store (Elektrojournal 2014a). In order to overcome the often criticized time span between ordering a product online and having it delivered, the electronics retail group opened a drive-in system in Germany. This gives online shoppers the opportunity to order a product online and within one hour having it available for collection at the drive-in counter. The company group is currently testing this new retail system in Ingolstadt but is confident to introduce it to other cities and countries as well (Computerbild 2014). Another part of the group's growth strategy is also the expansion of its presence in the online pure play market. On the one hand, the group's subsidiary redcoon would be expanded and on the other hand specialized online shops would be established targeting different customer groups (Elektrojournal 2014b). In 2015, it has been known that Media-Saturn has also incorporated yet another form of online retailing, namely the cooperative online commerce. Both, Media Markt and Saturn now offer their products – in total more than 93,000 products – also in their own eBay web shop and can thereby potentially even reach more consumers (PC Magazin 2015). With all theses measures Media-Saturn is increasingly trying to merge its distribution channels and thereby stay competitive towards large online retailers.

However, as already mentioned in a previous chapter, more and more online retailers start to open their own physical retail outlets. This trend also does not leave the Austrian computer and electronics retailing sector untouched. In order to allow customers to touch, try and experience a product before buying and thereby appeal to even more consumers, many electronics retailers – such as e-tec, electronic4you and Cyberport – have entered the offline retail world. Also Amazon is highly likely to adapt this strategy and open physical stores any time soon (Kurier 2015). This already gives a hint on another major development in the e-commerce business, namely the internationalization of digital commerce. In the course of globalization, more and more international online players will make attempts to gain a foothold also in the European and thus also in the Austrian market. Also the Alibaba group – one of the largest e-commerce companies headquartered in China – has already announced its entry in the European market (Kurier 2015).

All this has lead to a highly competitive landscape that is likely to even intensify in the future. Thus, local players need to quickly adapt and develop profound strategies to resist these competitive pressures and operate successfully in the future.

Expected investments and demand for skilled labor in the IT sector

The economic crisis in 2008 and 2009 put a considerable damper on the Austrian IT sector and led to a strong decrease of job vacancies. Whereas in 2013 labor demand in some areas of the IT sector was still on the decrease, an improvement of the economic situation is expected to positively impact the employment prospects until 2017. Generally speaking, the IT market in Austria is expected to rise by 2.9 percent in 2014 compared to 2013, where growth is mainly driven by the increase in cloud computing, mobile applications, data management and security solutions. Consequently, there will be an ongoing high demand for skilled labor, especially for highly skilled college and university graduates, in the next years.

As mentioned before, the rise of digital innovation has caused a substantial demand in the development of mobile applications. Therefore, strong efforts are taken to establish a cluster for IT companies that are dedicated to app development in the area around Vienna and Bratislava. This, in turn, will drive demand for skilled IT staff. Another driver of growth is the management of the enormous amount of data. Thus, there will be high demand for experts in the field of data organization and maintenance. What is more, many Austrian companies are expected to invest in the optimization and acceleration of internal business processes as well as in security measures by means of IT integration. This again is likely to increase demand for qualified IT specialists in the upcoming years (AMS 2015).

Digitalization has also found its way into governments, which is commonly referred to as e-government or electronic government. It basically means the utilization of the Internet and Information and Communication Technologies to improve the efficiency and effectiveness of the services delivered in the public sector (United Nations 2014). Especially the inter-linkage of local and regional authorities will lead to high investments and consequently also to an increase of skilled labor demand (AMS 2015).

However, due to the high number of retirements and the lower birth rates in later years, a considerable shortage of skilled labor is expected starting in 2016. What is more, with a share of women of only 14 percent, the Austrian IT sector is characterized by a substantial gender imbalance. Also among those with college or university degrees in field of IT, women make only 26 percent (AMS 2015). Thus, it will be of great importance to heavily invest in education and training of qualified employees as well as to persuade more women to start off their career in the IT sector.

3. Analysis of the internal environment

After having analyzed the external environment, it can be concluded that there is a number of trends and developments potentially impacting the internal environment of companies operating in the Viennese computer retailing sector.

As already mentioned, in the beginning of this year a study, *Strukturanalyse des Wiener Computerhandels* (Leimert 2015), was conducted by the Vienna University of Economics and Business in cooperation with the Austrian Chamber of Commerce, that analyzed the current situation and structure of the Viennese computer retailing sector. The study shows that the Viennese computer retailing sector is a highly heterogeneous industry, with not only computer retailers but also IT service providers and consultants actively operating in the sector. More than half of the respondents have one to three employees or operate the business themselves and over 60 percent have no business location at all. Nearly all companies offer services where especially installation, maintenance and consulting have shown to be of considerable importance. In terms of distribution, the by far leading channel is direct selling whereas only minor importance is attached to an online shop. Most businesses focus on the B2B customer segment. Regarding communication tools, most respondents visit customers in person or apply personalized e-mails. The study has shown that especially the retailers are affected by the structural changes in the sector; especially the economic situation, the shortage of skilled labor and declining trade margins are considered as negative influencing factors on companies' past sales development. Positive influencing factors are, on the other hand, new customer acquisition, customer service and consulting. The most severe competition for retailers stems from foreign online shops and specialist stores. Technology-driven innovations in the field of IT services – in particular cloud services, big data and storage – are perceived to open up new areas of operation, also the focus on service, consulting and long-term customer loyalty appear to be of considerable importance. Threats are considered to stem from low trade margins and an increasing price transparency as well as the partly reluctance of new technologies in the B2B segment. The financial and economic situation is perceived as a major barrier for the development of the whole sector.

This should have given a glimpse on how the internal environment is currently looks like and which developments have influenced it in the past years. The aim of this research is to provide a view to the future how the sector will develop, how the external environment is perceived and how companies adapt their internal environment to it.

Three main research areas have been developed. The first research area is the sector perspective which aims to clarify how the experts assess the development of the whole sector and which the most relevant influencing factors will be. The second research area is the company perspective which will bring forth how the experts estimate the development of their own company's internal environment. The final research area is represented by an evaluation of the ideal computer retailer of the future.

The following exact research areas will be analyzed. Each of them will put forth concrete research questions:

3.1 The sector perspective – Framework conditions

The first research area is the sector perspective. The relevant sector is the Viennese computer retailing sector that comprises retailers and service providers. The aim is to uncover how the sector as a whole will develop in the future and how different framework conditions will influence this development. Framework conditions refer to conditions or factors that are given and cannot be influenced. In the context of the master thesis framework conditions are derived from the external environment. As they potentially influence the internal environment of businesses they need to be continuously be evaluated and analyzed. This has derived the following research question:

How will the Viennese computer retailing sector develop in the upcoming three to five years? What are the most important framework conditions that will impact the Viennese computer retailing sector?

3.2 The company perspective

3.2.1 Development of sales

A major part of the internal environment is the financial situation which in the course of the underlying master thesis is determined by the companies' net sales development. Sales figures are also often adduced to determine the size of a business entity (WKO 2013). Sales can be defined as *"… the total revenue derived by a firm from the sale of goods and/or services in the normal course of business"* (Obenaus & Weidacher 2006, p. 605). While gross sales include returns, discounts and value added tax, net sales are calculated without these items.

What is more, sales always relate to a specific period of time (Obenaus & Weidacher 2006). This enables the comparison of sales figurers from one period to another. Sales can also be put in relation to certain reference values, such as offered products and services or different customer segments. Here the percentage share of sales volume is calculated (Wirtschaftslexikon24 2015). A firm's sales figures are dependent on a number of factors that need to be identified for sales planning which, in turn, determines product, distribution, communication and price policies (Leibenger 2003). This poses the following research questions:

How are sales expected to develop in the upcoming two to three years and what will be the most important influencing factors? Which area of business dominates in terms of sales? How are sales divided among customer segments?

3.2.2 Product policy

A firm's product mix relates to the full range of products and services offered. In strategic terms, it is essential for every company to determine an optimal product mix in terms of profit, growth and risk, which in general can be referred to as product policy. Related decisions include what products to buy and to sell (breadth and depth of product range), product diversification or simplification (offering a wide range of products and services or concentrating on one's core business) as well as product innovation (Obenaus & Weidacher 2006). As the analysis of the external environment has shown, the global computer market is characterized by a continuous emergence of product innovations and new services. The analysis has also identified an increasing importance of green IT. This has given rise to the following research question:

Which offered products and services will become more or less important and how will the product range develop in the upcoming two to three years? What will be the importance of green IT in the upcoming two to three years?

3.2.3 Distribution policy

Distribution comprises all economic activities to transfer goods from manufacturers to final consumers and thus provides a link between production and consumption. Retailers typically are the last link in the chain of distribution, catering to the final consumer. Distribution

creates value by making products and services available to consumers when they are needed, rather than by changing their form. However, retailing is not an exclusive domain of retailers as any company can sell to final consumers (Obenaus & Weidacher 2006). Especially direct distribution by manufacturers seems to be on the rise in the global computer market, as it has been identified in the analysis of the external environment. What is more, in the course of digitalization many new distribution formats have been popping up, such as e-commerce and m-commerce, that also may have been or will be integrated by Viennese computer retailers. The following research questions have been derived:

Which distribution channels are used by Viennese computer retailers and how will their importance change in the upcoming two to three years? What relevance will be attributed to e-commerce and m-commerce?

3.2.4 Communication policy

Communication policy, marketing communications or promotional mix refers to *"… the combination of promotional tools, viz. advertising, public relations, personal selling, sales promotion, and direct marketing, used by a firm to inform, persuade and influence a particular target group it has identified"* (Obenaus & Weidacher 2006, p. 562). As it has been identified in the analysis of the external environment, digitalization has led to completely new ways of communication and has opened up numerous new possibilities for companies to approach their customers. These aspects create the following research question:

Which communication tools will be used by Viennese computer retailers in the upcoming two to three years?

3.2.5 Management activities

Management refers to all activities that are involved in running a business organization. This mainly includes preparing and making decisions, identifying goals as well as ensuring that they are carried out and reached (Obenaus & Weidacher 2006). As it has been identified in the analysis of the external environment, Viennese computer retailers are embedded in an increasingly dynamic environment which potentially also causes higher expenditure of management activities. Thus, the following research question is raised:

Which management activities will require the most time, resources and energy in the upcoming two to three years?

3.2.6 Investments

Investments are defined as the action of investing money in order to obtain profitable or useful results in the future. This can be the flow of expenditure designed to maintain or expand the stock of capital goods, but can also involve expenditure on, for example, education training or related activities (Obenaus & Weidacher 2006). Similar to management activities, the increasingly dynamic environment might also require Viennese computer retailers to make additional investments in the future. The following research question has been derived:

How will the investment volume develop in the upcoming two to three years and what will be the most important areas of investment?

3.2.7 Employees and employee training

Among others, the number of employees can determine the size of a business; it is considered the most expressive among different evaluation criteria. Whereas from zero to nine employees a business is defined as a microenterprise, from 10 to 49 as a small business, from 50 to 249 as a medium-sized business and from 250 onwards as a large business (WKO 2013). Particularly the research area of employee training will be given special importance. This is due to the identified shortage of skilled labor in this field. These aspects create the following research questions:

How will the employee situation develop in the upcoming two to three years? What role will employee training play and which areas will require the most trainings?

3.2.8 Growth opportunities and competitive threats

In a dynamic environment it is of considerable importance to continuously observe and assess one's opportunities and threats. In the course of this master thesis which points to the future especially new growth opportunities as well as competitive threats stemming from other market players will be assessed. This leads to the following research questions:

Which areas of operation are considered to yield the highest growth opportunities and which other market players will be the most serious competitors in the future?

3.2.9 Corporate Social Responsibility

Corporate Social Responsibility (CSR) refers to a firm's commitment to be accountable to all of its stakeholders. The aim is to achieve sustainability in all dimensions – economic, social and environmental – of corporate operations and activities (Obenaus & Weidacher 2006). Environmental pollution has often been held against the computer and IT industry due to its resource rich and partly harmful production, use and disposal. In the course of the global sustainability movement also the computer and IT sector has been considerably impacted. However, there still appears to be much room for an ecologization of the sector. These aspects have brought forward the following research question:

What role will CSR play for Viennese computer retailers in the upcoming 2-3 years and which actions will be taken?

3.3 The ideal computer retailer of the future

The final area of research will be the identification of the ideal computer retailer. Many computer retailers have appeared to struggle operating successfully in the Austrian computer retailing sector, shown by a high number of recent bankruptcies. The increasingly dynamic and also competitive landscape has probably even made it harder for companies to stay competitive. Thus, the study should determine how the ideal Viennese computer retailer looks like and how he operates. This should especially give guidance to existing Viennese computer retailers to determine future success strategies. The following research question has been derived?

What characterizes the ideal Viennese computer retailer of the future?

4. Empirical Research

The following chapter is dedicated to the description of the empirical research that has been conducted as well as the disclosure of the corresponding results.

4.1 Research Design

As already mentioned, this master thesis builds on two prior studies that in each case analyzed the current structure of the Viennese computer retailing sector in a quantitative way. The aim of this research is to provide an outlook of the sector development in the near future. For this purpose, **personal expert interviews** have been chosen as the most appropriate research method to reach this aim.

An expert can be defined as someone who possesses clear and accessible knowledge on a specific area. What is more, an expert's opinions are based on secure allegations and his claims are no mere guesswork or tentative assumptions. Thus, experts are interesting as representatives of a certain group rather than as individuals. Expert interviews are a special form of guided interviews in qualitative research. Qualitative research is typically characterized by a small sample size; thus the data gathered from the sample is not representative for the whole population. Indeed, also qualitative research aims at generalization and the comparability of results. However, if certain results are found to be applicable to different situations and times, this has to be justified in every case (Mayer 2009).

For this master thesis it has been decided to use a **standardized questionnaire** as statistical tool for the personal interviews. The two main reasons for this have been, on the one hand, to guarantee a better comparability of the data and, on the other hand, to establish a connection to the previous studies. A part of the questions that were asked in the prior studies have been adapted – especially in terms of new insights that have been gained in the course of theoretical analysis as well as regarding the orientation of the questions towards the future – and integrated in the questionnaire (see Appendix). In addition, new questions have been derived through literature review. The questionnaire represents the operationalization of the research questions that have been defined in the previous chapter. It includes a combination of open and closed-ended questions which have been read aloud by the interviewer to the respondents. For some questions supporting materials such as scales and lists of statements have been used (see Appendix). Whereas the data gathered from the closed-ended questions

has been analyzed on the computer with the help of SPSS and Microsoft Excel, the answers given to the open questions have been analyzed in a qualitative way. Before going into the field a pre-test was conducted.

4.2 Data Collection

In total **27 personal interviews** with industry experts have been conducted in the period between April 20 and May 13 2015. The requirement to be part of the sample has been the membership of the "Fachgruppe Wien Computer und Bürosysteme" of the WKO, as such being computer retailers, IT service providers or consultants. The WKO provided a list of 83 recommended experts; hence a conscious selection of interview partners took place rather than random sampling. The list included the name of the contact person, the company name, the company location as well as the telephone number and e-mail address. Additionally, the dominant area of business, retailing or the provision of services, was provided. This information was especially relevant in order to ensure an even distribution of retailers and service providers within the sample. In a first approach all potential interview partners were contacted via e-mail, explaining the research purpose and announcing to contact them via telephone the week after. Unfortunately, many contacts turned out to be no longer current so that some extra time was needed to update the contact list. Finally, 27 personal interviews – most of them took place at the companies' premises – could be realized. 14 of those count as retailers and 13 as service providers. Two of the retailers are manufacturing companies. On average the interviews took 49 minutes. The longest interview took 90 minutes and the shortest one took 27 minutes.

4.3 Sample Description

In total 27 companies participated in the survey. The majority of the interviewees are company owners or partners (70,4%, n=19), seven occupy the position as general manager (25,9%) and one expert is an executive employee in the field of product management (3,7%).
All of the experts have had more than 10 years of experience in the sector (n=27).
All of the respondents work in independent companies (n=27; no chain operators or franchisees).

In terms of the **total number of employees**, 14,8% (n=4) operate as one-person-enterprises and as such do not have any employees (figure 2). Around 44,4% (n=12) have 1-9 employees. Hence, the majority of interviewed experts work in microenterprises (59,2%, n=16). 5 companies (18,5%) can be labeled as small businesses employing between 10 and 49 people, and three companies (11,1%) each as medium-sized (50-249 employees) and large businesses (over 250 employees). The highest total number of employees is 5.500.

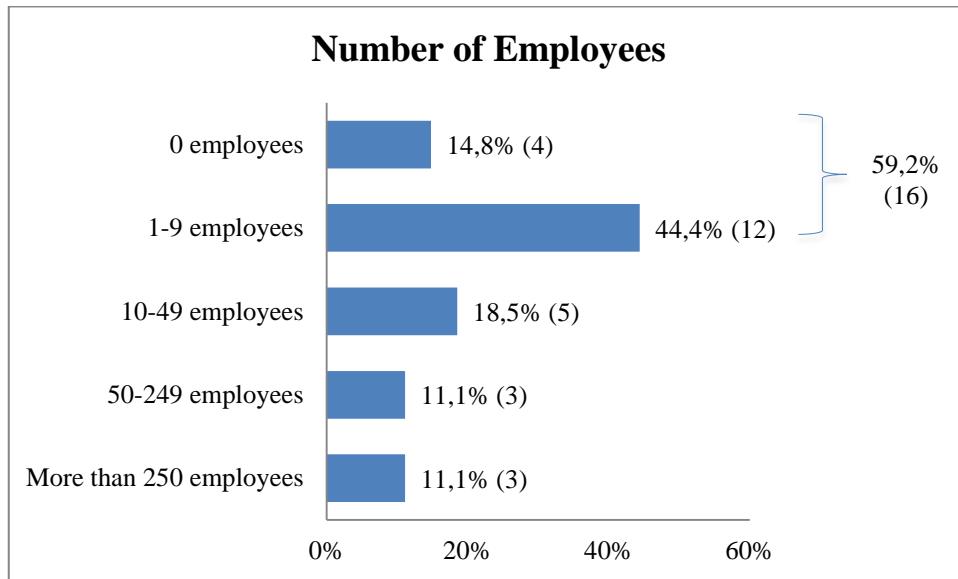Figure 2: Number of Employees

In terms of **net sales** of the company location, in 2014 29,6% (n=8) earned under 500.000 Euro, 11,1% (n=3) between 500.001 and 1 Mio. Euro, 25,9% (n=7) made 1-5 Mio. Euro and another 29,6% (n=8) earned over 5 Mio. Euro in 2014 (figure 3). One respondent did not want to provide information about net sales. Hence, net sales are relatively evenly distributed among companies.

Net Sales Company Location 2014

Category	Value
Over 5 Mio.	29,6% (8)
1-5 Mio.	25,9% (7)
500,001-1 Mio.	11,1% (3)
Under 500,000	29,6% (8)
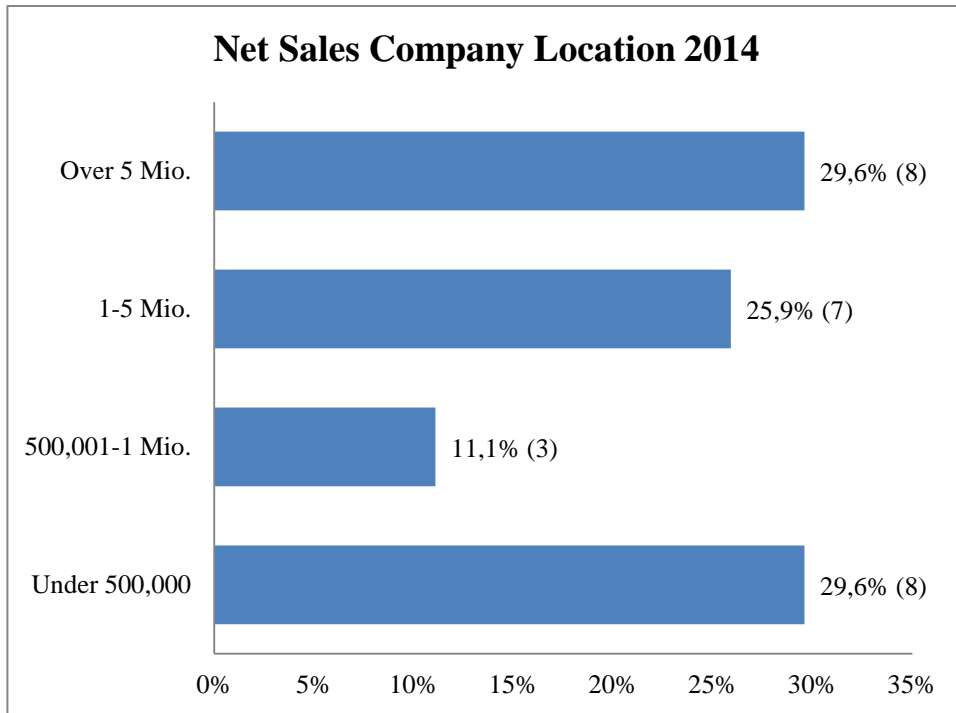
Figure 3: Net Sales Company Location 2014

Concerning net sales of the whole company in 2014, the majority (59,3%, n=16) made under 5 Mio. Euro whereas two (7,4%) companies earned 5-10 Mio Euro (figure 4). Another 29,6% (n=8) even made over 10 Mio. Euro in 2014. This big difference in sales can probably be explained by the majority of very small companies, with no or only a small number of employees on the one hand, and the larger companies with up to 5.500 employees in total on the other hand.

Total Net Sales 2014

Category	Value
Over 10 Mio.	29,6% (8)
5-10 Mio.	7,4% (2)
Under 5 Mio.	59,3% (16)

Figure 4: Total Net Sales 2014

As part of net sales it has also been asked which business area made over 50 percent of net sales in 2014. For 48,1% (n=13) of the experts' companies retailing was the **dominant area of sales** in 2014. Around a quarter (25,9%, n=7) made the largest part of sales with services whereas two experts (7,4%) earned more than 50 percent of sales with consulting. If the latter two categories are consolidated it can be said that 33,3% (n=9) made their largest part of sales with 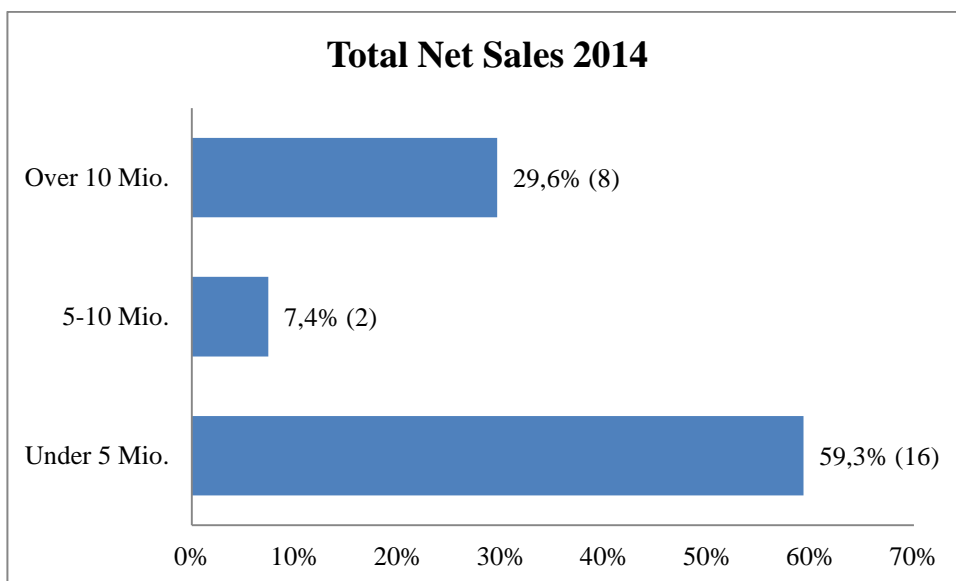the provision of services. 5 experts (18,5%) could not name any dominant are of sales generation which means that sales are more evenly distributed between retailing and service provision. This categorization will be used in further analyses to investigate as to whether there are differences in the answers of retailers and service providers.

As far as the different **customer segments** are concerned, a clear domination of sales generation with business clients can be witnessed; on average 78,8% of sales in 2014 were generated with selling to business clients. On average 13% of sales were made with institutional clients (government, municipalities, universities, etc.) and 8,2% with private customers. 63% (n=17) of the interviewees do not sell to private customers at all.

4.4 Results

This chapter will present the results that have been gained from the 27 conducted expert interviews. The presentation of the results will be structured in three parts and in accordance to the research questions: the sector perspective, the company perspective and the ideal computer retailer of the future.

4.4.1 The sector perspective

The following results refer to the experts' opinions and assessments related to the whole sector and its estimated development in the next 3-5 years.

In terms of the experts' estimation of the sector development in the next 3-5 years, the answers do not yield a clear picture (figure 5). Whereas there is a slight tendency towards a "good" or "very good" development (37%, n=10), 29,6% (n= 8) think that the sector will remain unchanged and another 29,6% (n=8) state that it will worsen. However, no one says that the sector will develop "very bad". Overall, the future of the Viennese computer retailing sector appears to be uncertain so that it is hard to make a clear-cut estimation.
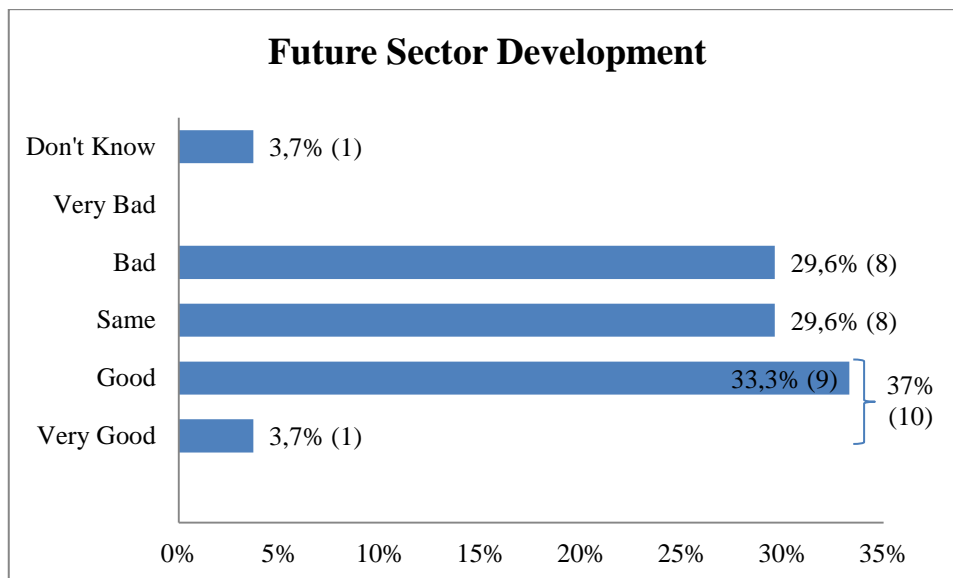
Figure 5: Future Sector Development

In order to dig deeper into how the experts estimate the future sector development the following question has been asked:

How do you think computer retailing in Vienna will look like in 3-5 years? Which scenario is most likely?

Overall, 23 of the 27 experts make statements about a changing sector whereas only two say that there will not be any alteration in the next 3-5 years and another two mention that they cannot give any estimation due to the dynamic and fast changing environment.

From those experts that refer to a changing sector in the near future, two different scenarios can be identified:

The first scenario relates to the consumer segment (B2C). Here the experts estimate some kind of "adjustment" which will mainly affect pure hardware retailers. The following quote of one of the experts mirrors this view very well:

"Consumers do not require any consultation any more. The PC has become a product that is taken from the shelf. Consumers can inform themselves in advance and the final decision is usually based on price. In former times purchasing a computer was a matter of trust but nowadays computers are bought online or at big retail companies such as Saturn."

Some years ago consultation by shop assistants has usually been an essential part in the purchasing process of a computer. However, due to the vast availability of product and price information enabled by the Internet, consumers themselves are very well informed and often do not require any additional advice from shop assistants to make their purchase decision. Especially the younger generation already grows up with all these technologies. Once they have decided for a certain product they search for the cheapest offer which they usually find on the Internet or at one of the bigger retail chains. Thus, in this scenario many specialist retailers will be forced to shut down if they do not adapt to a changing market. Especially in the consumer segment a clear dominance of online retailing can be expected. If not online, computer hardware sales will be made through bigger retail chains that increasingly also integrate online channels. The respondents also expect that consumers tend to replace their computers rather than to get them repaired. The only chance for smaller retailers to survive in such a competitive environment is – according to the experts – to position themselves in a niche and to offer services in addition to hardware sales.

The second scenario refers to the B2B segment. Similar to the consumer segment, those businesses that focus on mere hardware retailing will see a hard time coming. According to the experts' opinion, many retailers will go bankrupt if they do not change their business model. A possibility for hardware retailers to maintain their position in the market is the additional offer of services, so that business clients can receive everything from one source. Due to the increasing penetration of IT in enterprises the demand for IT related services and consultation is expected to rise considerably. Thus, there will be a rising demand for IT-specialists that offer competent consultation and a full range of services. The IT service that is considered to yield a huge potential is cloud computing. Hence, IT service providers who offer cloud services to their customers are expected to face a rising market. One expert also mentions that more and more companies will decide to outsource uncritical processes to external IT companies who provide and manage these processes as cloud services. On the other hand, companies will aim to insource critical processes.

"Austria is a late adopter. Retailing in general will decrease and hardware and software will migrate to the cloud. Such rental models will definitely increase. Uncritical processes will be outsourced to external IT companies whereas critical processes will be tried to be integrated into the company. Austria simply cannot compete with low-wage countries but has to differentiate on quality."

What is more, according to the experts, the retail as well as the IT services market will face an intensive competitive environment where larger companies – also from abroad – are likely to have an advantage over smaller firms. Hence, it will be of great importance for Viennese companies to offer high quality services and individual solutions.

In order to find out the main influencing factors on the future sector development the experts have been asked to name three factors that in their opinion will influence the sector development particularly positive and three factors that will have a particular negative influence on the sector development in the upcoming 3-5 years.

The most frequently mentioned **positive** influencing factor is the increasing penetration of IT in Austrian companies which goes hand in hand with a rising demand for IT services. In this connection, cloud services are named several times but also security and storage solutions are mentioned. What is more, one expert states customers' increased importance of trust towards providers as a positive development. Another positive influencing factor that is named several times by the experts is the emergence of new products and services especially enabled by digitalization. Hence, companies will face a certain pressure to innovate. However, with the rise of new products and services also new opportunities come along. Products that are expected to potentially boost the market are Windows 10 and the "re-discovery" of inkjet printers. Also the "Kassasteuer" is named as a potential stimulating factor as companies would need to purchase the corresponding hardware. What is more, increasing e-commerce is named two times as a positive influencing factor. Other single namings are an improved economic situation and competitiveness, new companies that enter the market, broadband expansion, cheaper hardware, easier procurement due to the European Union and the Euro, longer products life cycles which provides stability and finally an increasing demand for home automation.

In terms of **negative** influencing factors on the future sector development, the condition that is named most is online retailing where especially foreign online retailers will drive competition. Also the missing Austrian online retailers are mentioned in this respect. What is more, price comparison websites and the consequential price pressure are brought up as negative influencing factors. What is more, decreasing trade margins and the devaluation of hardware are named several times to have a negative impact on the future sector development. Whereas some experts name technological innovation and the corresponding emergence of new products and services as a positive influencing factor, there are also experts that consider

it to be negative. The reasons that are mentioned in this respect are that less staff will be required and that some new developments – such as cloud services – will have a rather negative impact on hardware retailers. It is also brought up that the whole sector will have to continuously adapt in order to profit from technological innovation. Other factors that are considered to have a negative influence on the sector development are tax burdens, the "Bundesbeschaffungsgesetz", the shortage of skilled labor, the financing possibilities for enterprises and the general economic situation. Further single mentions are the required night work in the IT sector, the reluctance to invest on behalf of client companies, the minor appreciation of services as well as the dependence on IT.

In addition to the open question, the experts have been asked to assess as to whether a number of pre-defined framework conditions will have a "rather positive influence", a "rather negative influence" or "no influence" on the sector development in the next 3-5 years. Also the answer "don't know" has been possible (figure 6). The named framework conditions have been derived from the theoretical analysis.

According to the experts' opinions especially the demand for security solutions (88,9%, n=24), the focus on consultation (85,2%, n=23) and specialization (85,2%, n=23) will influence the sector development in a **positive** way. Other developments that will clearly influence the sector positively are the Internet of Things (70,4%, n=19), the demand for services for data analysis (66,7%, n=19) and the demand for cloud and hosting services (66,7%, n=19). What is more, also multi-channeling, the high demand for mobile devices, the demand for individual software as well as IT-Outsourcing (63%, n=17 respectively) are considered to positively impact the Viennese computer retail market in the future.

On the other hand, with 92,8% (n=25) decreasing trade margins stand out as a negative influencing factor on the future development of the Viennese computer retailing sector. Other factors that are perceived to have a negative impact in the upcoming 3-5 years are the weak consumer demand (77,8%, n=21), the shortage of skilled labor (74,1%, n=20) but also the ability of consumers to make online comparisons of product features and prices (70,4%, n=19). 63% (n=17) of the experts consider the shift towards e-commerce and m-commerce to have a rather negative impact on the future development of the whole sector. More than half of the experts estimate that also the economic situation and the access to capital will impact the sector rather negatively (59,3%, n=16 respectively).

Influencing Factors

Factor	Rather positive influence	Rather negative influence	No influence	Not specified
Demand for security solutions	88,9%		7,4%	3,7%
Demand for services for data analysis	66,7%	3,7%	22,2%	7,4%
Demand for cloud and hosting services	66,7%	18,5%	11,1%	3,7%
High demand for mobile devices	63%	18,5%	14,8%	3,7%
Decrease in demand for PCs	11,1%	51,9%	37%	
Specialization	85,2%	3,7%		11,1%
Focus on consultation	85,2%	11,1%		3,7%
Recycling of old devices	40,7%	11,1%	48,1%	
Demand for individual software	63%	7,4%	25,9%	3,7%
Opening of offline stores by online retailers	25,9%	40,7%	33,3%	
Access to capital	22,2%	59,3%	18,5%	
IT-Outsourcing	63%	22,2%	14,8%	
The Internet of Things	70,4%	11,1%	14,8%	3,7%
Big Data	48,1%	14,8%	37%	
Increasing awareness for sustainability	48,1%	3,7%	48,1%	
Weak consumer demand	3,7%	77,8%	18,5%	
Decreasing trade margins		92,6%	7,4%	
Economic situation	29,6%	59,3%	11,1%	
Shortage of skilled labor		74,1%	25,9%	
Increasing variety of products	37%	37%	22,2%	3,7%
Concentration of the sector	25,9%	40,7%	29,6%	3,7%
Multi-Channeling	63%	14,8%	22,2%	
Shift to E-Commerce and M-Commerce	25,9%	63%	11,1%	
Online comparisons by customers	18,5%	70,4%	11,1%	
Social Media	11,1%	51,9%	3,7%	

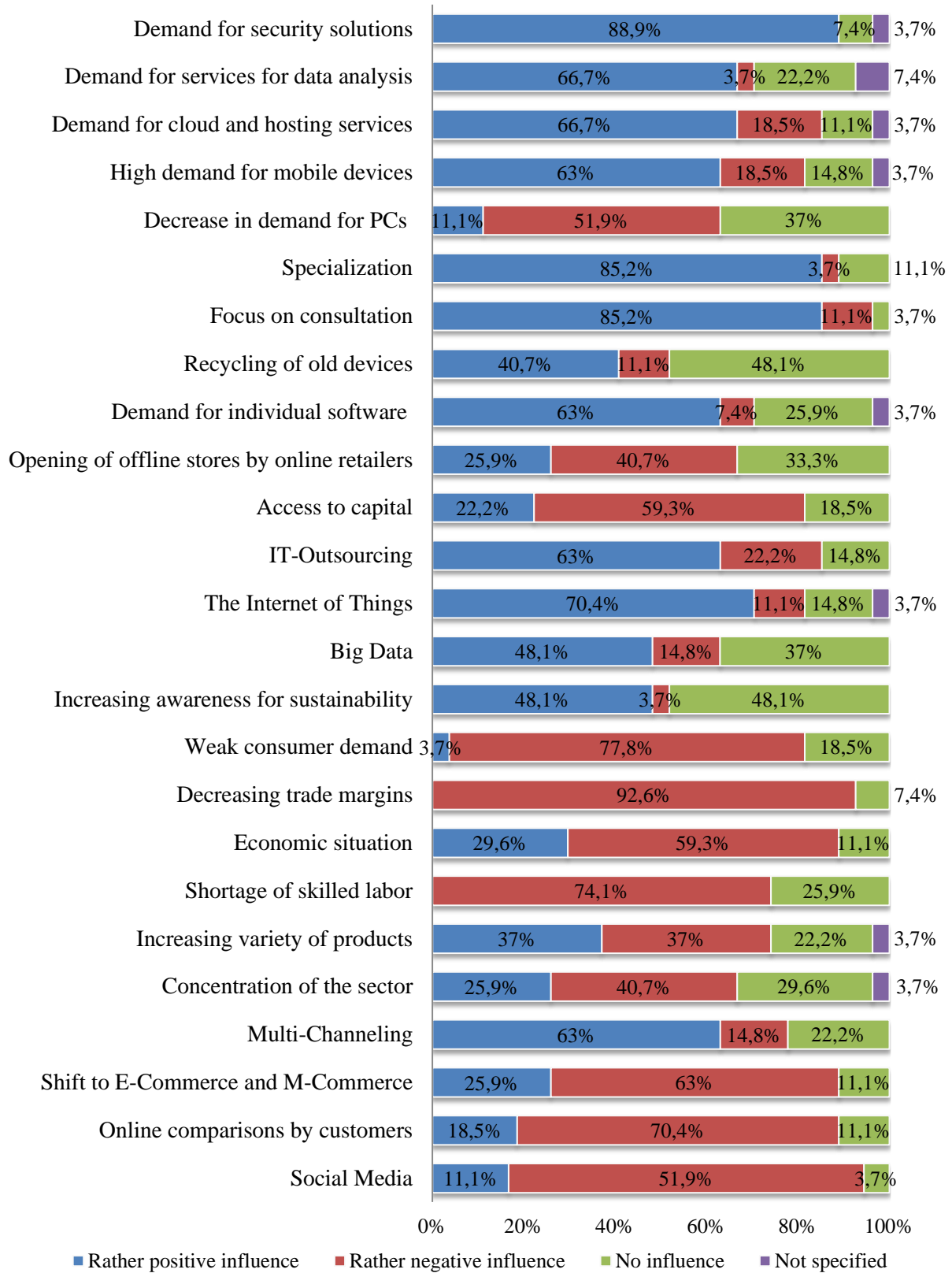■ Rather positive influence ■ Rather negative influence ■ No influence ■ Not specified

Figure 6: Influencing factors on the sector development

Overall, the factors that are perceived to have a rather positive or rather negative impact on the future development of the sector balance each other.

In order to investigate as to whether retailers and service providers assess the influence of the named framework conditions in a different way a comparison has been made. As already mentioned in the sample description there are also five experts that work in companies with no dominant area of operation (retailing or service provision). In order to make a valid comparison between groups of approximately the same size, only retailers (n=13) and service providers (n=9) have been taken into consideration.

Differences can be observed in the assessment of the following framework conditions:

1. Access to capital
2. The Internet of Things
3. Shortage of skilled labor
4. Shift to e-commerce and m-commerce
5. Social Media

Whereas among service providers the influence of access to capital on the future development of the sector is clearly negative (77,8%, n=7), nearly 40 percent (n=5) of the retailers estimate that access to capital will have a rather positive influence in the next three to five years (figure 7).
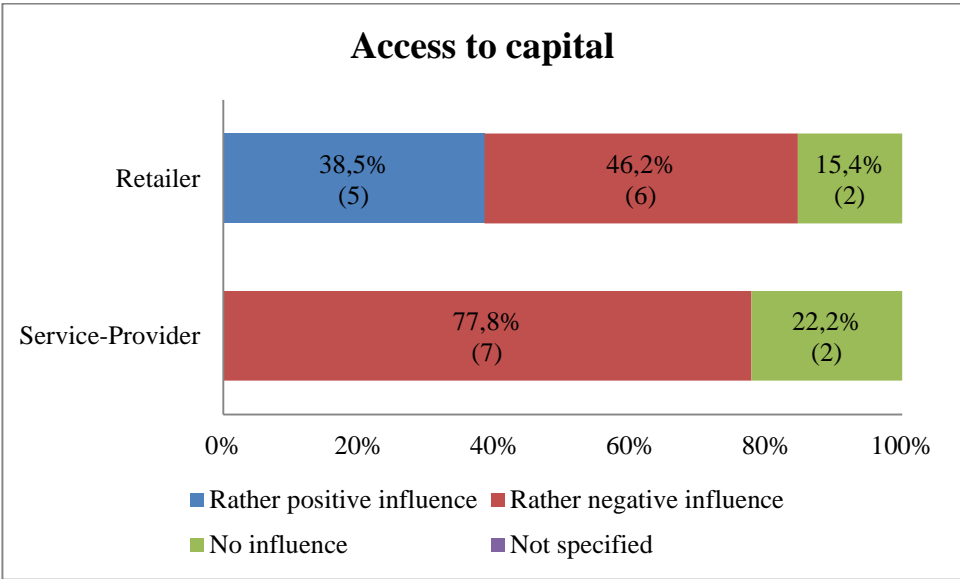

Figure 7: Access to capital as influencing factor, differentiation retailers and service providers

Another differentiation can be observed with regards to the Internet of Things (figure 8). All of the service providers (n=9) attach a rather positive influence to the Internet of Things while among retailers the influence appears to be not as clear-cut. Around half of the retailers (n=7) estimate that the IoT will have a positive impact, around a quarter (n=3) think that it will have a rather negative influence while two of them (15,4%) assess that it will not have any influence on the sector development. This explicit positive assessment by service providers is probably due to the number of business opportunities that emerge with it.
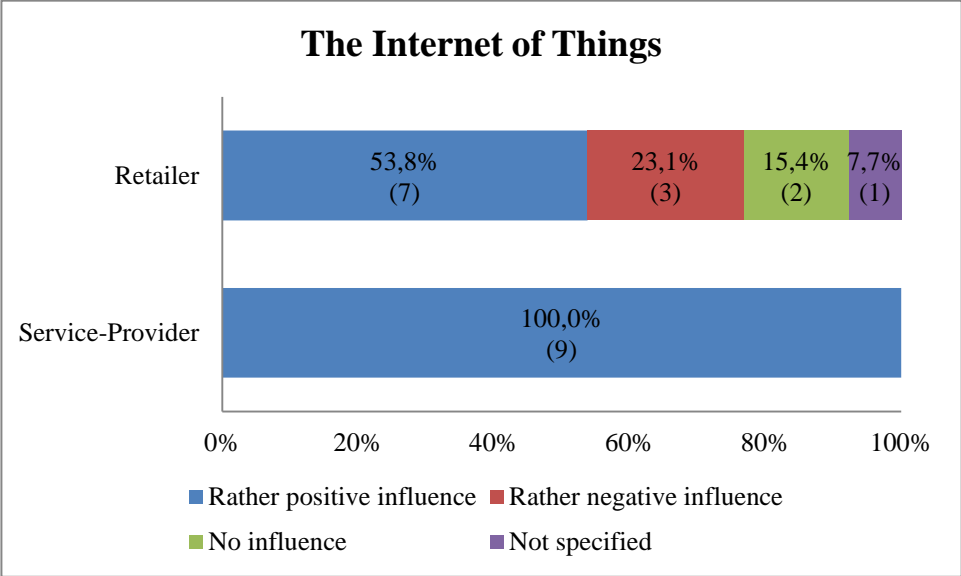

Figure 8: The Internet of Things as influencing factor, differentiation retailers and service providers

What is more, retailers and service providers assess the impact of the shortage of skilled labor differently (figure 9). Nearly all retailers (92,3%, n=12) think that the shortage of skilled labor will have a rather negative influence on the sector development in the upcoming 3-5 years. Among service providers, around half of them (55,6%, n=5) estimate that it will have a rather negative influence while the other half (44,4%, n=4) think that it will not influence the sector at all. This might imply that especially retailers will be confronted with the shortage of skilled labor.

Shortage of skilled labor

Retailer	92,3% (12)	7,7% (1)
Service-Provider	55,6% (5)	44,4% (4)

■ Rather positive influence ■ Rather negative influence
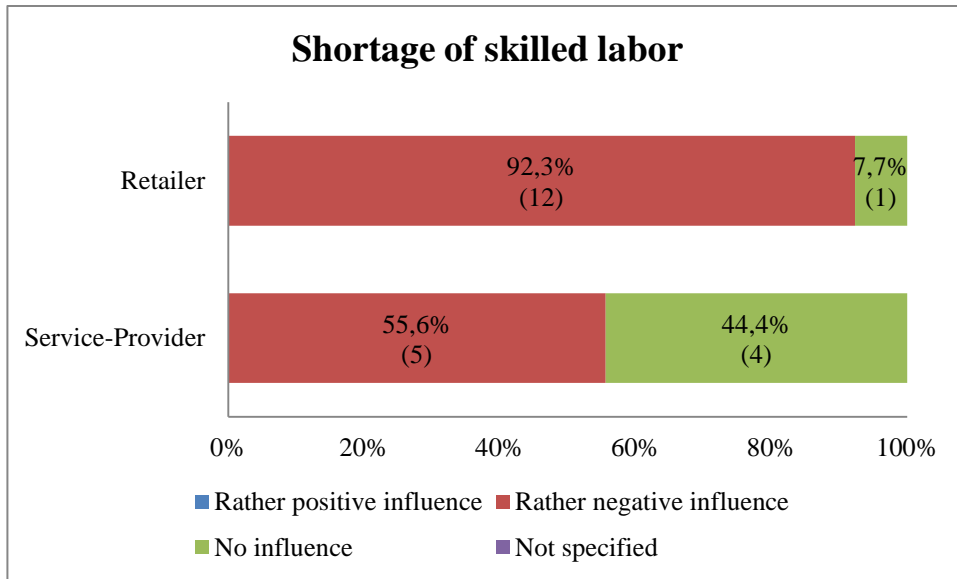■ No influence ■ Not specified

Figure 9: Shortage of skilled labor as influencing factor, differentiation retailers and service providers

With regards to the shift towards e-commerce and m-commerce, it appears to be considered having a rather negative influence especially among retailers (76,9%, n=10) (figure 10). On the contrary, among service providers no definite opinion can be drawn from the answers; in each case 33,3% attach either a positive, a negative or no influence of the shift towards e-commerce and m-commerce on the future sector development. This result does not come very surprising, as for service providers distribution via an online channel is mostly inappropriate.

Shift towards e-commerce and m-commerce

Retailer	23,1% (3)	76,9% (10)	
Service-Provider	33,3% (3)	33,3% (3)	33,3% (3)

■ Rather positive influence ■ Rather negative influence
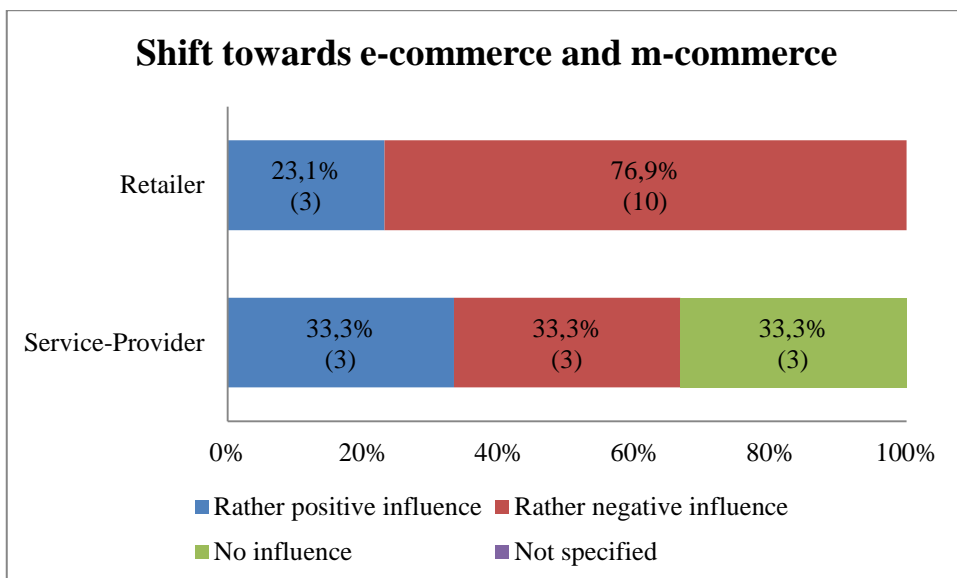■ No influence ■ Not specified

Figure 10: Shift towards E-Commerce and M-Commerce as influencing factor, differentiation retailers and service providers

Finally, a difference can be observed when it comes to the influence of social media (figure 11). While 77,8% (n=7) of the service providers think that it will have a rather positive influence on the future sector development, not even half of the retailers (46,2%, n=6) are of the same opinion. Approximately 40 percent (n=5) assess that social media will not impact the sector at all in the future. This may show that social media activities will be of greater importance for service providers in contrast to retailers.
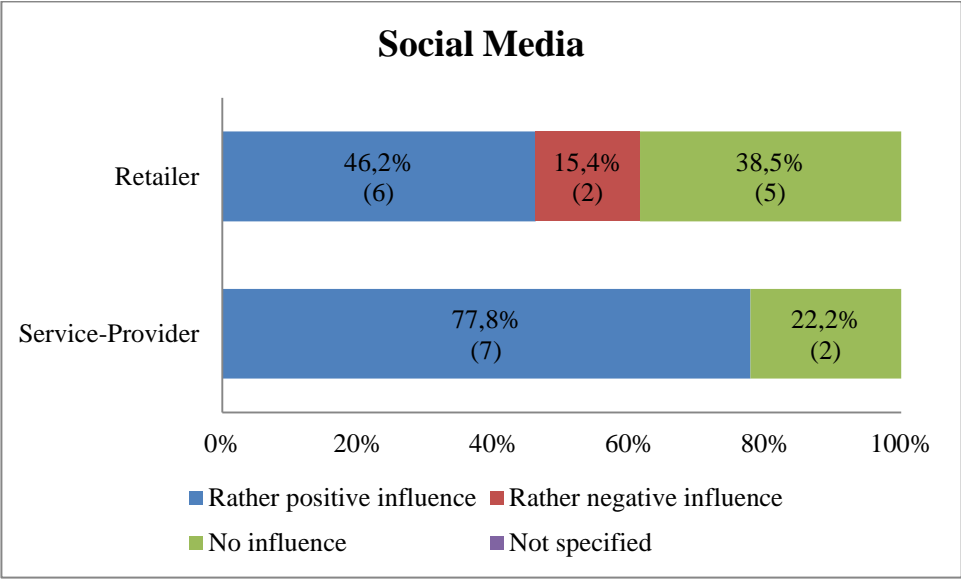
Figure 11: Social Media as influencing factor, differentiation retailers and service providers

4.4.2 The company perspective

Besides the perceived impact of different factors on the future development of the whole sector, the underlying master thesis also aims at uncovering the companies' internal changes and developments in terms of the financial situation as well as in relation to activities and strategies in the upcoming 2-3 years. Hence, the next chapter deals with the company perspective. The answers given by the experts all refer to their own businesses. The results will again be described in accordance to the research questions.

4.4.2.1 Development of sales

In the course of this master thesis the before mentioned financial situation is assessed in terms of the expected development of sales (figure 12). Almost half of the experts estimate that sales will increase within the upcoming 2-3 years (48,1%, n=13), where the majority expects sales to rise slightly between one and 10 percent (25,9%, n=7). 37% of the respondents say

that their companies' sales will stay the same (n=10) whereas only four experts expect a decrease (14,8%).
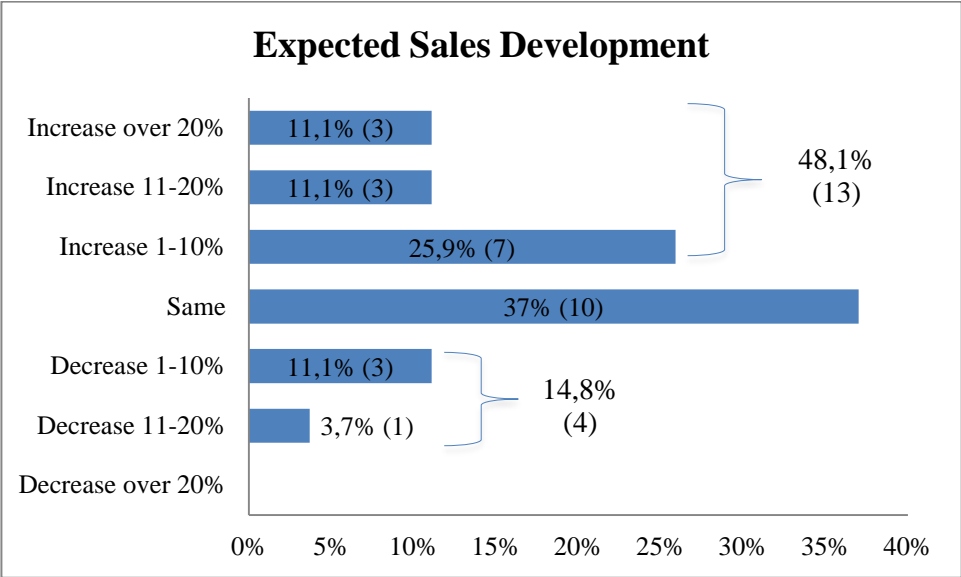

Figure 12: Expected Sales Development

The experts have also been asked about factors that will influence their companies' sales development rather positively and rather negatively.

Referring to the rather **positive** influencing factors on sales, there are two factors that clearly stand out as measured by the frequency of mentions. The first positive factor is the emergence of new products and services. Products and services that are named in this context are "cloud services", "the Internet of Things", "smart home", "inkjet printing", "data security and data analysis" as well as "the switch to leasing models". The second condition can be labeled as personal consultation and service. Mentions in this regard are "personal service", "service excellence", "demand for specific expertise" and the "demand for a personal contact on behalf of the customers". Other than that, also online retailing is mentioned as a positive influencing factor on sales. Single mentions include the economic situation, the focus on the B2B segment, recycling, new purchasing sources, financing opportunities, own marketing and advertising activities, the closure of big companies, the industry focus and the own shop location.

Also for the **negative** influencing factors a similarly clear picture can be drawn. The by far most frequently named negative influencing factors are the economic situation and political framework conditions. Factors that are named in this context are "insecurity of the sector development", "shortage of skilled labor" as well as "suboptimal environment for

investments". Another frequently mentioned negative influencing factor on sales development is the low demand. Mentions in this regard comprise "the decline of SMEs who disappear as customers", "the disappearance of whole markets such as Eastern Europe", "the decline of PC sales" but also "the missing willingness to invest on behalf of customers". What is more, also increasing competitive pressures especially from foreign companies, online retailing as well as decreasing trade margins are mentioned several times as negative influencing factors. Single namings include the shift into the public cloud, data protection problems as well as a high pressures to continuous innovation.

Overall, it can be said that the results from the sector and the company perspective correspond to a large degree.

4.4.2.2 Product policy

In order to assess which product and service categories will become more and which ones will become less important in the next 2-3 years, the experts have been asked to estimate the sales development within the different product and service categories.

As expected from the theoretical analysis, especially the sales of desktop and notebook PCs are expected to decrease in the upcoming years (figures 13 & 14). Nearly half of the respondents (48,1%, n=13) will not offer desktop or notebook PCs at all. In terms of desktop PCs, overall 33,3% (n=9) expect a decrease of sales whereas for notebook PCs 29,6% (n=8) estimate the same level of sales and 22,2% (n= 6) estimate a decrease within the upcoming 2-3 years. For tablets the expectations of an increase of sales clearly dominate (figure 15). 22,2% (n=6) of the experts estimate that tablet sales will remain the same and 29,6% (n=8) expect an increase. The sales of server is given a similarly positive assessment as with tablets (figure 16). Although the majority of experts (51,9%, n=14) will not offer servers, 25,9% (n=7) estimate the same level of sales and 18,5% (n=5) expect an increase of sales with server products. When it comes to other offered hardware products, 29,6% (n=8) expect the same level of sales and 25,9% (n=7) expect an increase (figure 17). Among the mentioned other hardware products are especially printer, scanner, copier and router. Finally, in terms of accessories, expectations towards constant sales levels dominate (37%, n=10) (figure 18). 25,9% (n=7) of the respondents estimate an increase.
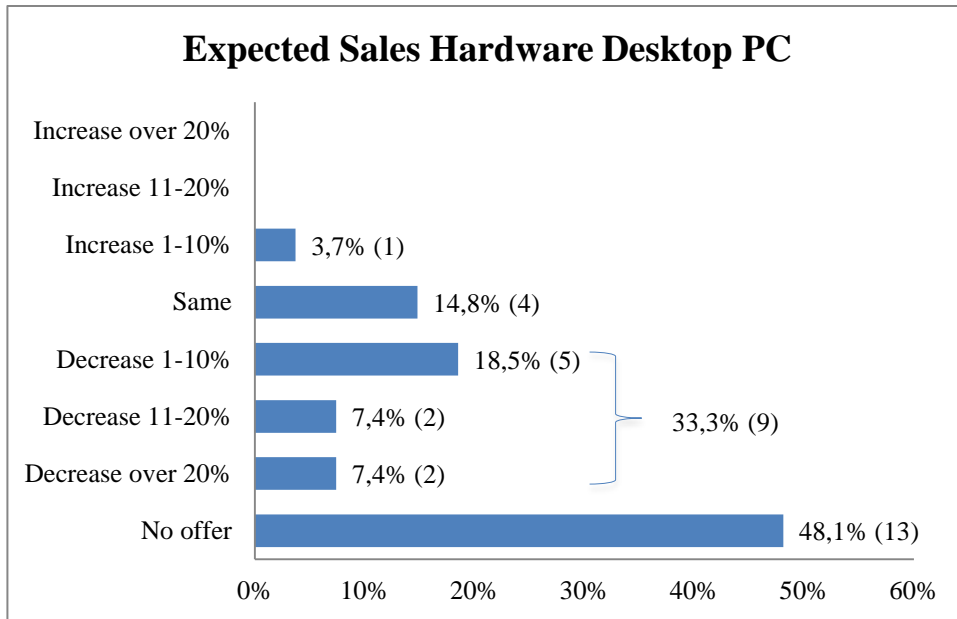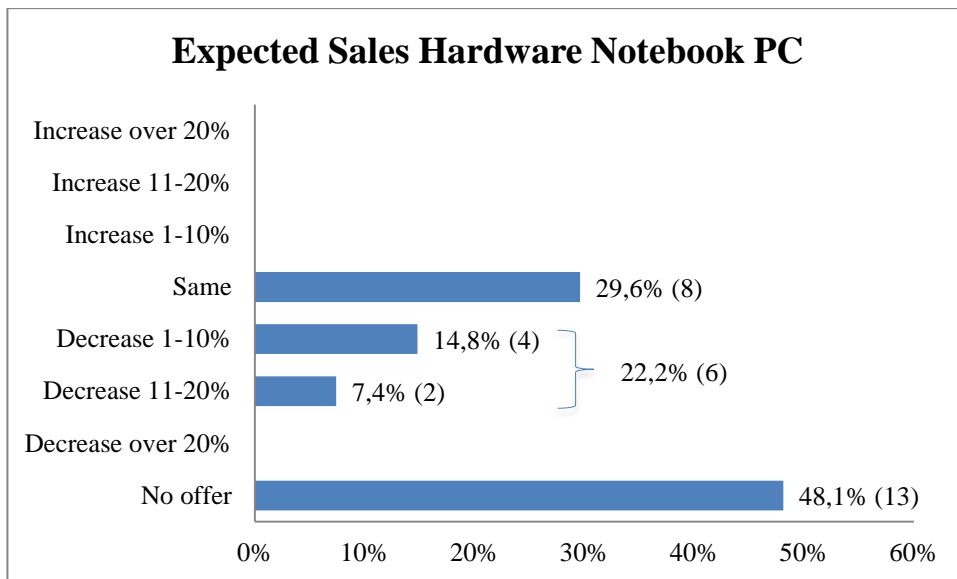
Figure 13: Expected Sales Hardware Desktop PC

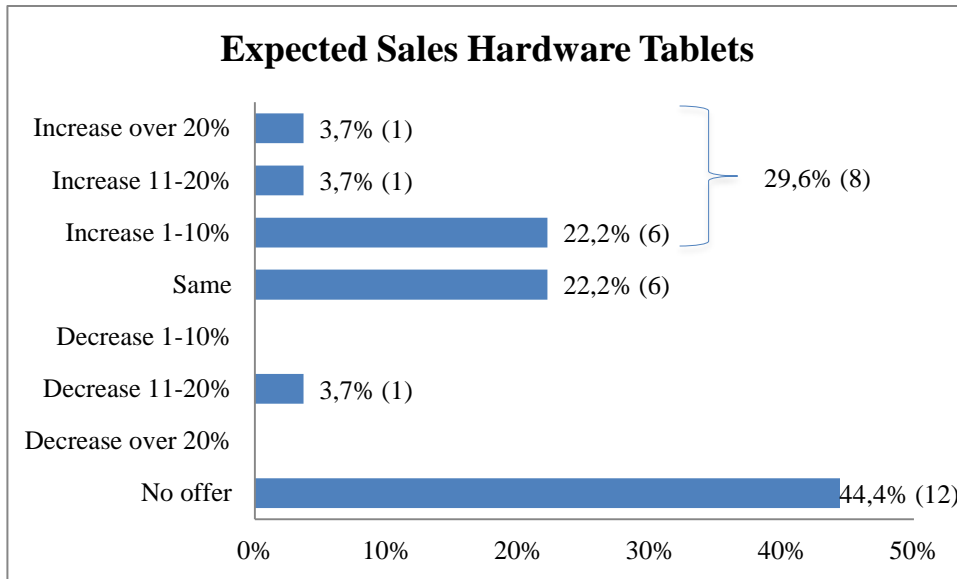Figure 14: Expected Sales Hardware Notebook PC

Figure 15: Expected Sales Hardware Tablets
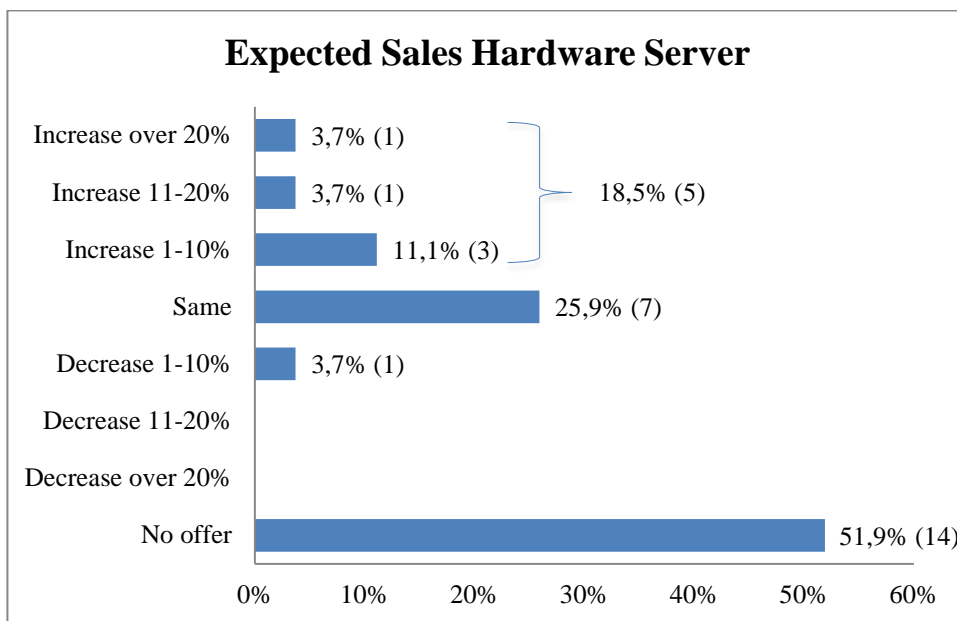
Figure 16: Expected Sales Hardware Server

Expected Sales Hardware Others

Category	Value
Increase over 20%	7,4% (2)
Increase 11-20%	7,4% (2)
Increase 1-10%	11,1% (3)
	25,9% (7)
Same	29,6% (8)
Decrease 1-10%	7,4% (2)
Decrease 11-20%	
Decrease over 20%	
No offer	37% (10)
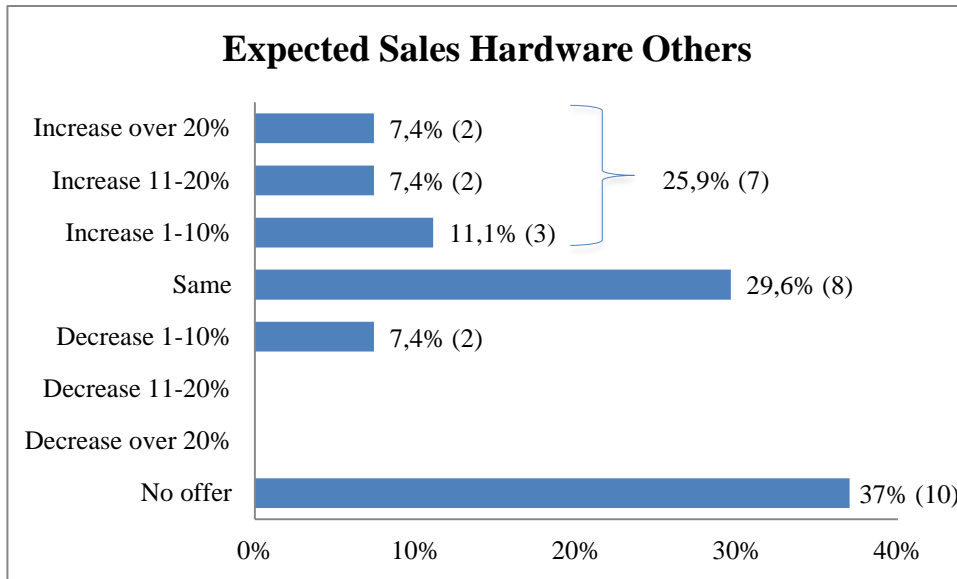
Figure 17: Expected Sales Hardware Others

Expected Sales Accessories

Category	Value
Increase over 20%	7,4% (2)
Increase 11-20%	
Increase 1-10%	18,5% (5)
	25,9% (7)
Same	37% (10)
Decrease 1-10%	3,7% (1)
Decrease 11-20%	
Decrease over 20%	
No offer	33,3% (9)

Figure 18: Expected Sales Accessories

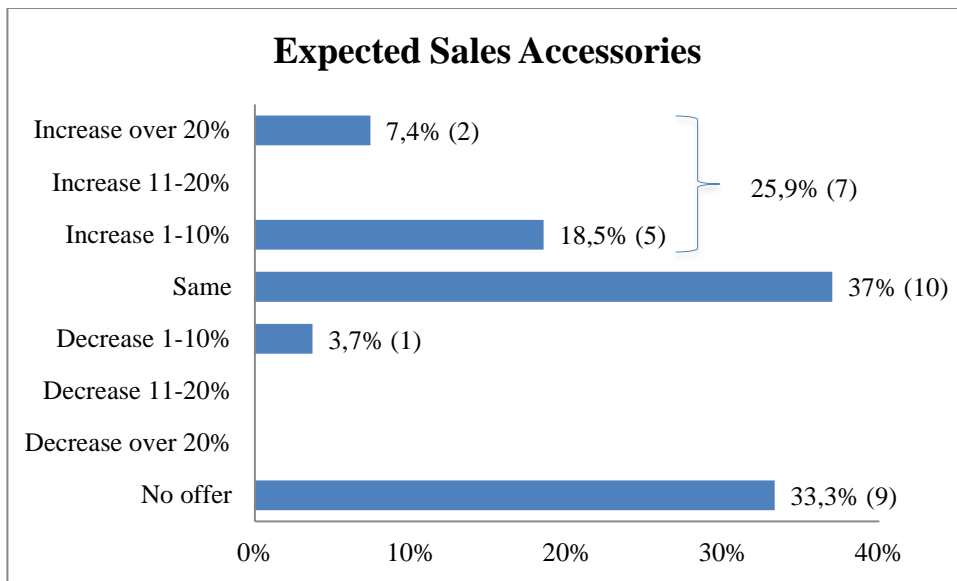Overall, 66,7% of the companies will offer software (figure 19). The expectations towards increasing sales of software dominate; 44,4% (n=12) estimate an increase. Five experts (18,5%) think that sales of software will stay at the same level.
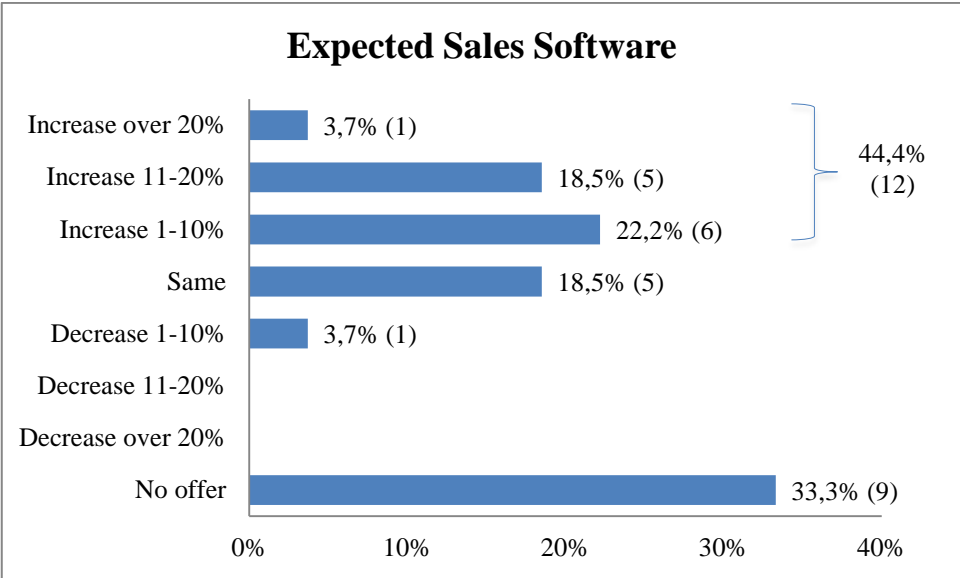

Figure 19: Expected Sales Software

Next, the expected sales development of different services will be taken into closer consideration. Remarkably, especially consultation as well as hardware installation and repair will be offered by most of the experts' companies; 74,1% will offer consultation services and 77,8% hardware installation and repair services. In both cases the expectations of sales development towards an increase dominate (figures 20 & 21). For consultation services 59,2% (n=16) of the experts expect an increase where most of them (33,3%, n=9) estimate an increase between one and 10 percent. With regards to hardware installation and repair services, 33,3% (n=9) of the experts think that their sales will increase whereas 29,6% (n=8) of the respondents expect sales to remain at the same level, 14,8% (n=4) expect sales of this service category to decrease. Whereas compared to the other services only 59,3% will offer software development and programming, also in this service category the expected increase of sales clearly dominates; 48,1% (n=13) expect an increase and the remaining 11,1% (n=3) expect sales to remain the same (figure 22). Other mentioned service categories comprise cloud services, trainings, maintenance contracts or IT service packages (figure 23). Also here the experts who expect an increase (33,3%, n=9) exceed those who estimate the same level of sales (3,7%, n=1) and those who expect a decrease (3,7%, n=1) by far.
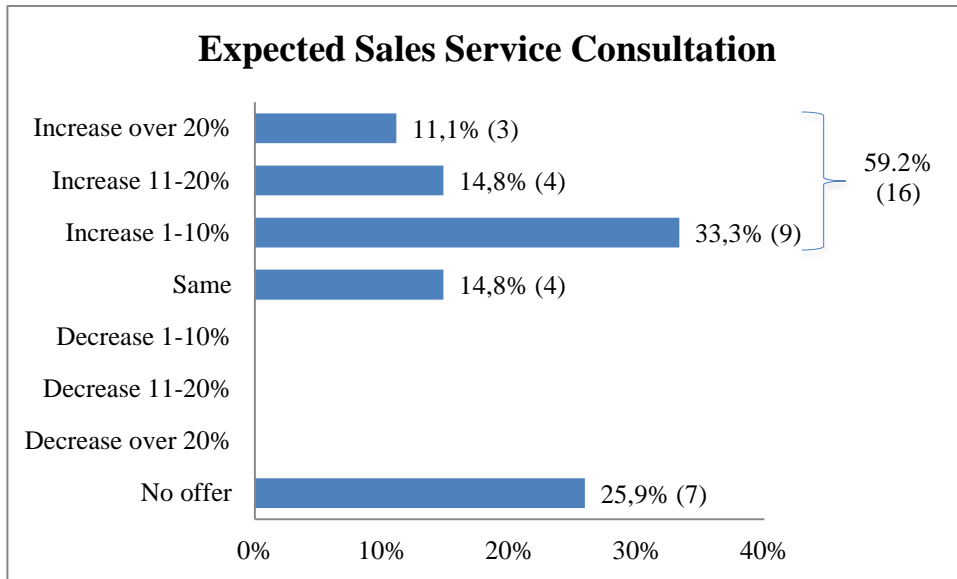
Figure 20: Expected Sales Service Consultation
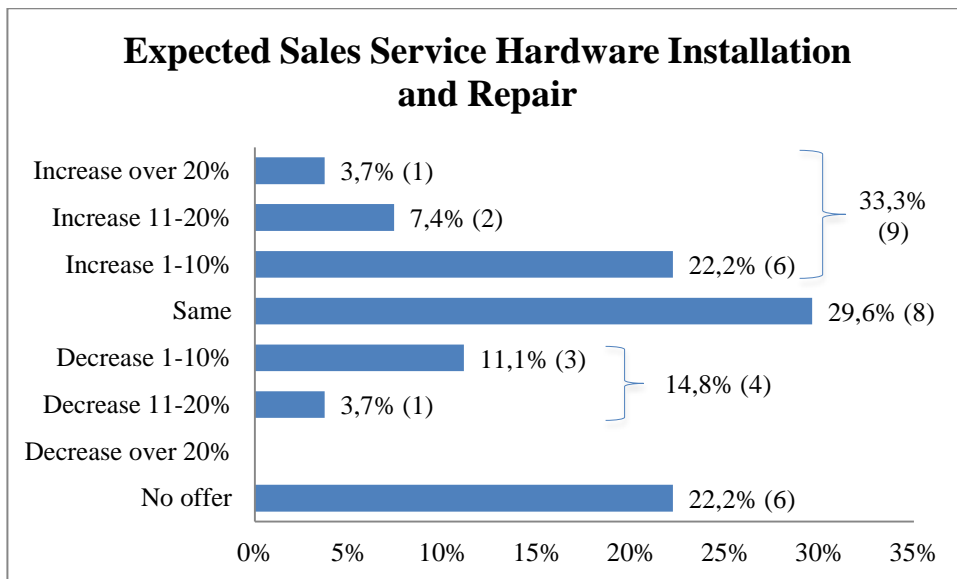
Figure 21: Expected Sales Service Hardware Installation and Repair
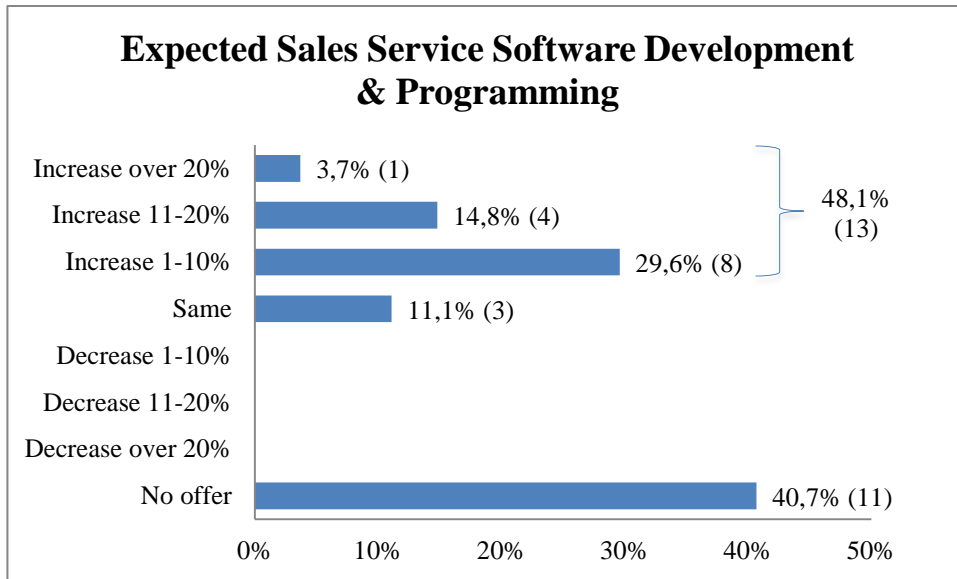
Figure 22: Expected Sales Service Software Development & Programming
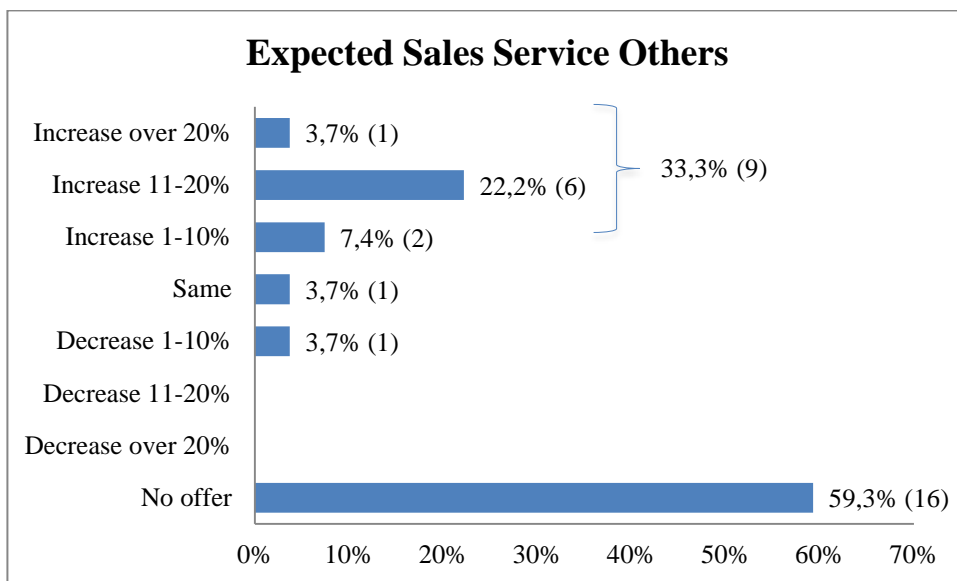
Figure 23: Expected Sales Service Others

As it has been shown in the preceding study by Leimert (2015) as well as mirrored by the results that have just been described, the offer of services has and will become more important for Viennese computer retailers and IT service providers.

Among the top services that are currently offered by the respondents' companies are delivery services (85,2%, n=23), maintenance (77,8%, n= 21) and installation (74,1%, n=20). 55,6% (n=15) currently offer cloud services (figure 24). The services that according to the experts will become more important in the upcoming 2-3 years are especially services for data

analysis (90,9%) which at the moment only 37% (n=10) offer, hosting (81,8%), system integration (81,3%), online ordering (81,3%) and cloud services (80%) (figure 25).

Offered Services

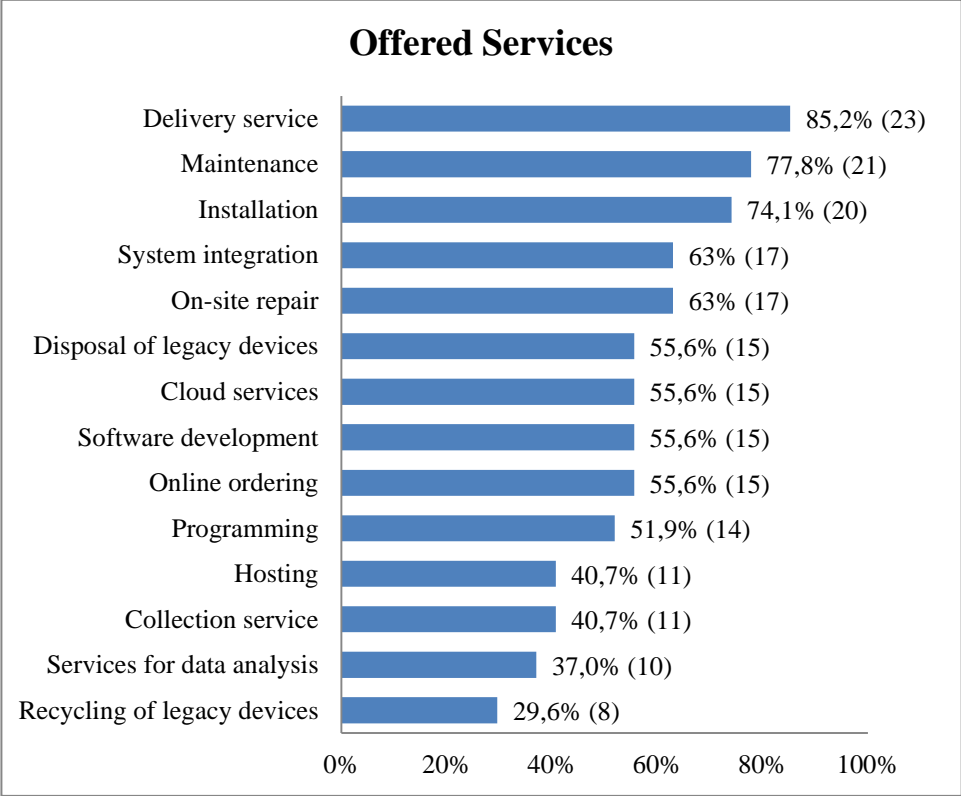| Service	Value
Delivery service	85,2% (23)
Maintenance	77,8% (21)
Installation	74,1% (20)
System integration	63% (17)
On-site repair	63% (17)
Disposal of legacy devices	55,6% (15)
Cloud services	55,6% (15)
Software development	55,6% (15)
Online ordering	55,6% (15)
Programming	51,9% (14)
Hosting	40,7% (11)
Collection service	40,7% (11)
Services for data analysis	37,0% (10)
Recycling of legacy devices	29,6% (8)

Figure 24: Offered Services
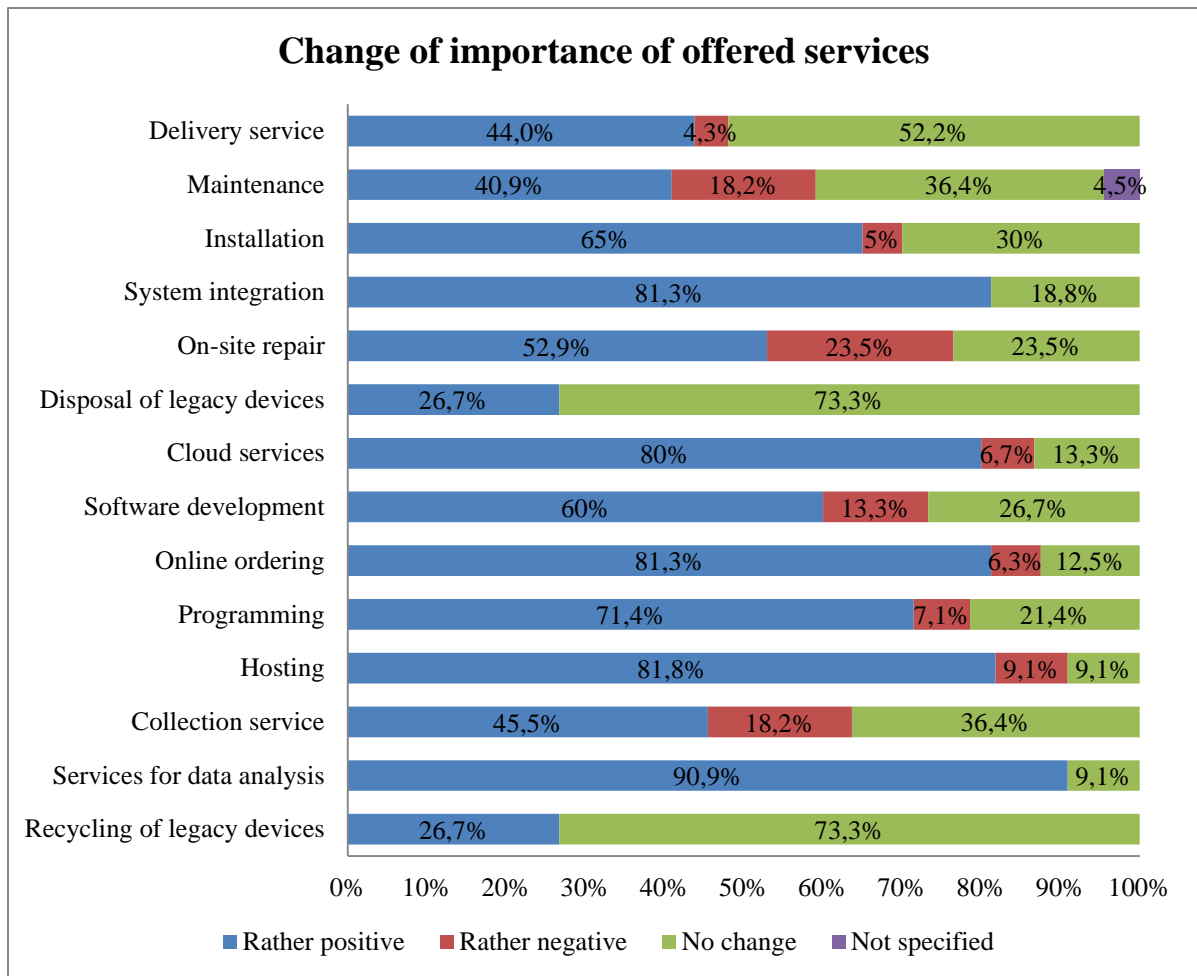
Figure 25: Change of importance of offered services

The experts have also been asked if they plan to offer any additional services in the upcoming 2-3 years. The following services have been mentioned:

- Tools and software solutions for process management
- Security solutions
- All-In-Services (hardware and software together on a rental basis)
- Mediation to partner companies

As it has been found out in the theoretical analysis, Green IT shows to become more and more important for businesses and governments in the course of the global sustainability movement. Almost 60% of the experts say that there will be demand for Green IT related to their own companies where on average the experts expect a moderate demand (mean=3,38 on a scale from 1-5, 1=very low demand, 5= very high demand). This will especially concern energy-saving hardware but also hardware that is produced sustainably and with low levels of harmful substances. Additionally, recycled hardware, sustainable accessories and supplies as

well as cloud services are mentioned by the experts. Hence, it can be concluded that for some companies Green IT will play a role, however, most likely an only moderate one.

4.4.2.3 Distribution policy

The theoretical analysis has shown that especially in terms of distribution a number of changes have already taken place and will also continue to do so in the near future. Particularly the integration of an online channel through to multi-channeling and no-line systems are considered to play a key role in future retailing. As it has been found out in the analysis of the sector perspective 63% of the experts think that multi-channeling will have a positive influence on the sector whereas an equal number of respondents estimate that the shift towards e-commerce and m-commerce will have a rather negative influence on the sector. For the latter especially retailers perceive a negative influence on the future sector development. This shows an estimated positive impact of multi-channeling but also a certain negative assessment of pure online retailing. The latter might be associated with the competitive pressures stemming from foreign online retailers.

Asking the experts about the estimated sales development in the different distribution channels, it has turned out that the by far most frequently used channel will be direct selling – 92,6% (n=25) of the experts will use it – where nearly half of all respondents expect an increase (48,1%, n=13) and 37% (n=10) estimate sales to remain at the same level (figure 26). The second most important distribution channel will be the online shop; 44,4% (n=12) of the experts will use it in the upcoming 2-3 years, whereby all of them except an increase of sales in this channel (figure 27). The other distribution channels lag far behind. While only five experts (18,5%) will sell in retail shops, three experts (11,1%) will make use of mail order trade and just one (3,7%) will sell via Internet portals, such as ebay. Amazon Marketplace will not be used by any expert in the upcoming 2-3 years.
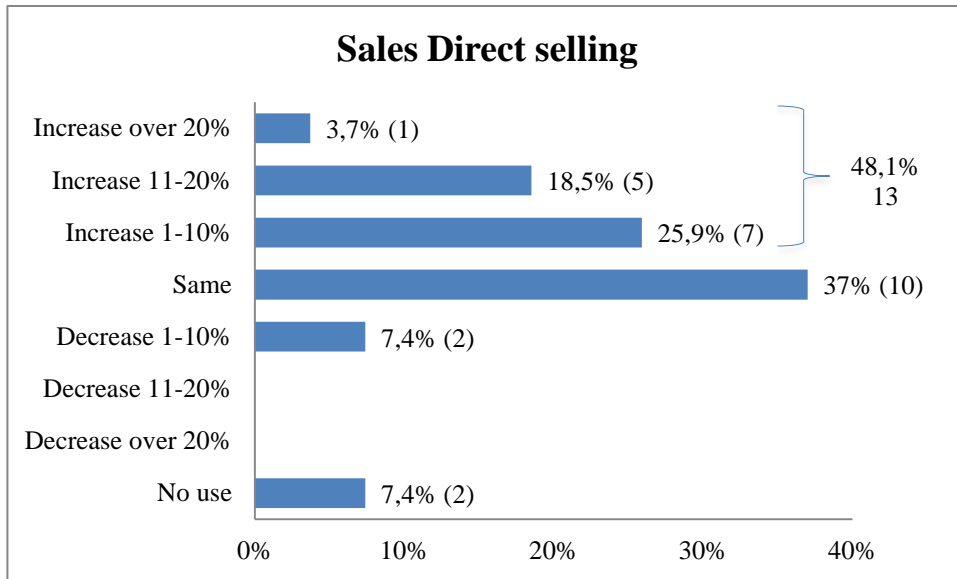
Figure 26: Sales from Direct Selling
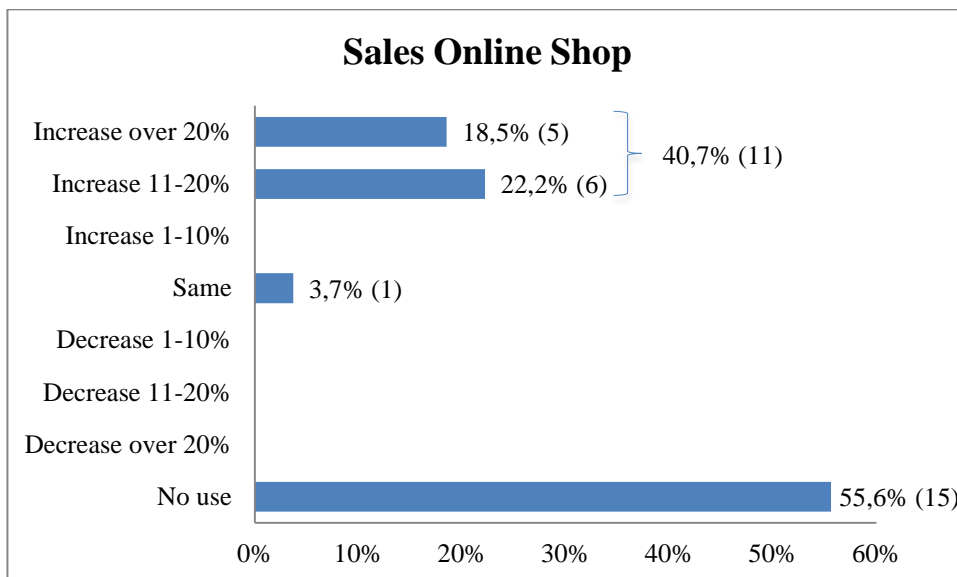
Figure 27: Sales from Online Shop

4.4.2.4 Communication policy

As it has been described in the theoretical part, digitalization has been transforming communication. Thus, new opportunities in terms of customer communication have emerged. Among the top communication tools currently used by the respondents are still rather traditional or long established means of communication, such as personal customer visits (96,3%, n=26), the own website (96,3%, n=26) and personal e-mail (92,6%, n=25) (figure 28). The first and last mentioned communication tools mirror that the personal customer approach are still highly relevant. However, the majority of respondents also mention to use

search engine optimization (SEO; 92,6%, n=25), newsletters (88,9%, n=24) and search engine advertising (SEA; 81,5%, n=22). Although over half of the respondents perceive that social media will have a rather negative influence on the sector development, 70,9% (n=19) of the experts currently use it in their businesses. Whereas 63% (n=17) of the experts engage in homepage optimization for smartphones and even 44,4% (n=12) use an app for smartphones, only 29,6% (n=8) make efforts to optimize the online shop for smartphones. Only five experts (18,5%) use price comparison websites to communicate with their customers.

Percentage of usage among companies

Personal customer visits	96,3% (26)
Own Website	96,3% (26)
Personal E-Mail	92,6% (25)
SEO	92,6% (25)
Newsletter	88,9% (24)
SEA	81,5% (22)
Social Media	70,4% (19)
Homepage optimization for smartphones	63% (17)
Advertisements in newspapers	51,9% (14)
App for smartphones	44,4% (12)
Banner advertisements	37% (10)
Online shop optimization for smartphones	29,6% (8)
Geo-Marketing	25,9% (7)
Online/Mobile promotions or coupons	25,9% (7)
Price comparison websites	18,5% (5)

Figure 28: Percentage of communication tool usage among companies

The experts have also been asked to assess the importance of the different communication tools for their companies in the upcoming 2-3 years (scale from 1=will become less important to 5=will become very important). The top communication measures that will become more important according to the experts are the homepage optimization for smartphones (mean=4,06), followed by the online shop optimization for smartphones (4) and social media (4) (figure 29). Also an app for smartphones (3,92) and SEO (3,92) will gain in importance in terms of communication. These results already show that particularly communication measures that involve smartphones but also those that somehow relate to the Internet are considered to become more important for the experts' companies. However, also the before

mentioned top communication tools currently used by the experts will at least be equally important or become tendentially more important. Whereas the remaining communication tools will have equal importance in the upcoming 2-3 years for the experts' companies, particularly banner advertisements (2,8) and advertisements in newspapers (1,93) will become less important according to the experts' opinion.
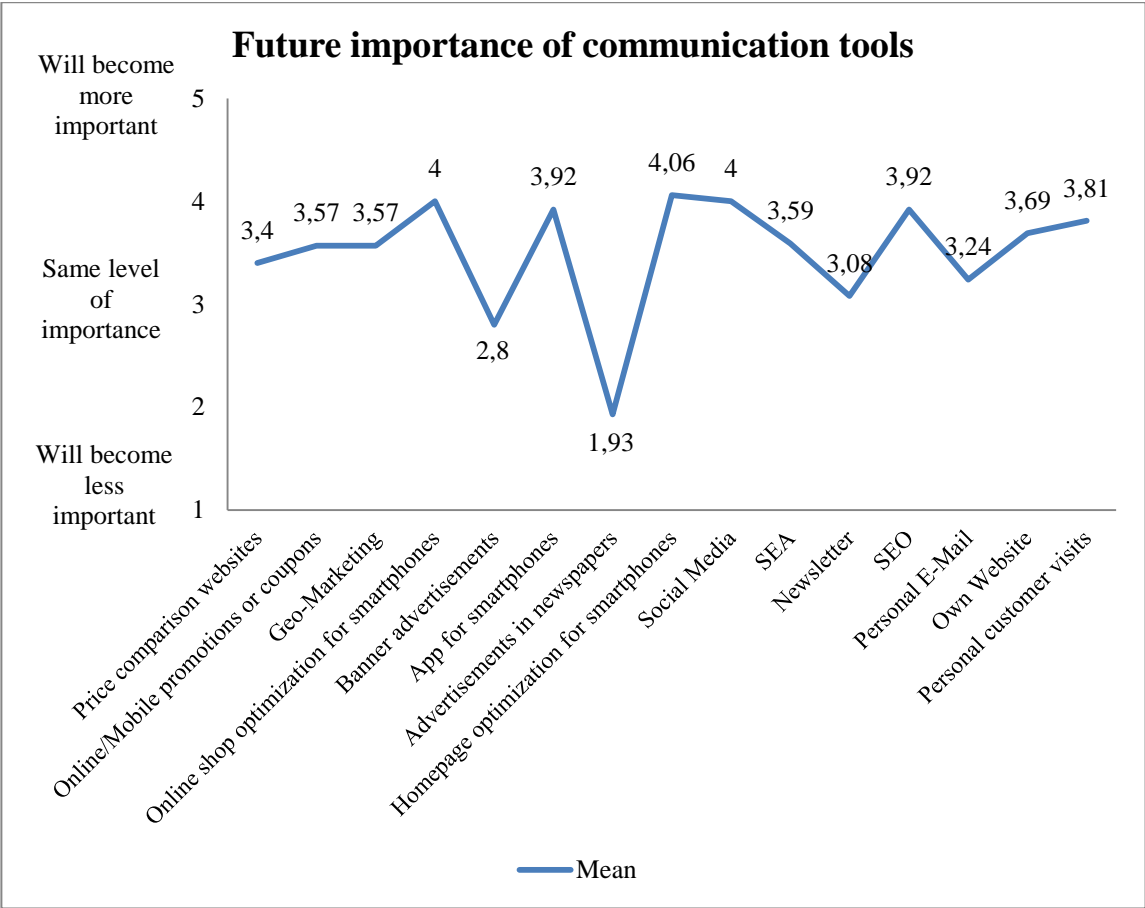
Figure 29: Future importance of communication tools

4.4.2.5 Management

Certainly, a dynamic environment also requires considering and adapting the management activities within a company. Thus, the experts have been asked to name the top three management priorities within their businesses in the upcoming 2-3 years.

The number one management priority that stands out in terms of the frequency of mention is the identification of market trends and the corresponding adaption of the product and service portfolio. Exemplary mentions are "market observation and trend identification", "know-how in strongly growing areas such as Big Data", "growth through new products" and "technological overview". What is named several times as well in this context is the stronger

focus on services and consultation. Another management priority that has emerged in the analysis is the communication with customers and customer relationship management. This also involves the recognition of customer needs as well as sales. What is more, personnel management is pointed out several times as an important management activity by the experts. This comprises not only employee recruitment but also trainings. Also internal process optimization and strategic adaptions to a changing environment are considered among the top management priorities. Furthermore, cost control and liquidity are mentioned several times by the experts. Two experts also named the development of an online strategy as their management priority. One expert referred to the formation of networks and cooperations with partner companies.

In addition, the experts have been provided with a list of predefined management activities and have been asked which of these will require the most time and effort for their internal management in the next 2-3 years (figure 30). The one management activity that clearly stands out is customer acquisition; 85,2% (n=23) mention it as relevant for them. This is followed by the entry into new markets and customer segments (55,6%, n=15) and loyalty marketing (48,1%, n=13). This already shows that customer acquisition and retention will play a key role for the experts, which is also in accord with the answers given to the open question mentioned above. 44,4% (n=12) consider training of employees as one of the most important management activities, which again coincides with the experts' top management priorities. Around a quarter (n=7) name the development of an online shop as one of the most important management activities within their companies. Jumping to the other end of the list, only three experts (11,1%) rank CSR and the development of cooperations among their most relevant management activities.

For 44,5% (n=12) of the experts CSR will not be relevant at all. For the remaining 55,5% (n=15) of the experts CSR activities will become slightly more important (mean=3,47; scale from 1=will be of little importance, 5=will be very important). Overall it can be concluded that for some companies CSR will play a role but it will not be among the top priorities of business operations.

Figure 30: Management activities

4.4.2.6 Investments

Similar to management activities also the investment volume in different business areas may be influenced by an increasingly dynamic environment. Thus, in the course of the survey the experts have been asked how the investment volume in the different business areas will develop according to their estimation.

Overall, the large majority of experts will make investments in the upcoming 2-3 years, only three experts (11,1%) will not invest at all (figure 31). Almost half of the experts (44,4%, n=12) estimate that the total investment volume will remain at the same level whereas 29,6% (n=8) expect an increase. Four experts (14,8%) think that their investment volume will decrease in the next few years. However, from these figures a strong tendency towards an unchanged or slightly increasing investment volume can be identified.
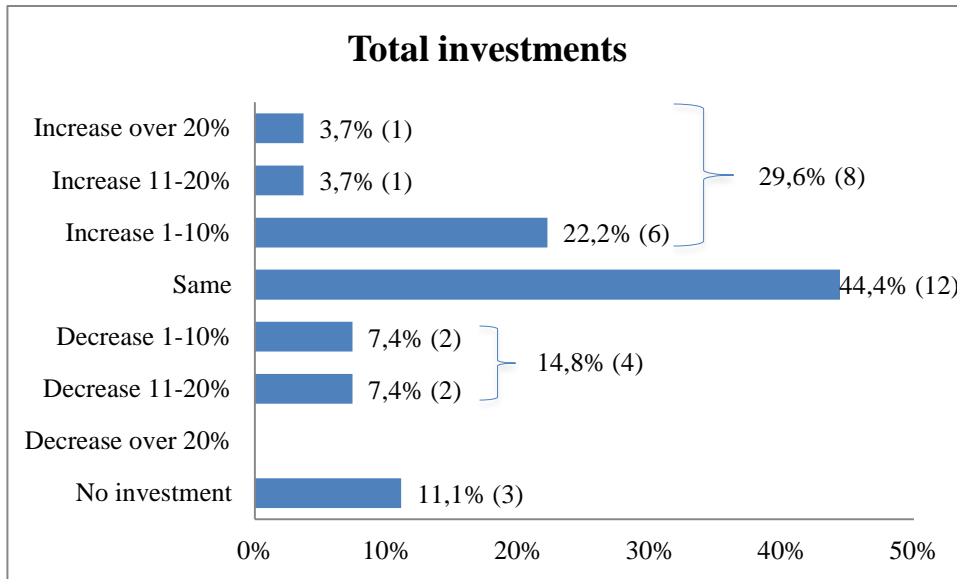
Figure 31: Total investments

The following graphs showing the development of investment in different business areas are listed from the most frequent investment area to the least frequent one.

Nearly all experts will invest in advertising and marketing (85,2%, n=23) where the majority expects investments to stay at the same level (44,4%, n=12). However, 33,3% (n=9) will increase their investments in this area (figure 32).

Figure 32: Investments in Advertising and Marketing

Other areas of investment that show to be of high relevance to the experts are training and further training of employees (figures 33 & 34). In both cases the number of experts who expect investment levels to remain the same and those who will increase them is more or less equal. This already displays the high importance of employee training in the upcoming years.

Further training of employees

Category	Value
Increase over 20%	7,4% (2)
Increase 11-20%	11,1% (3)
Increase 1-10%	18,5% (5)
Same	44,4% (12)
Decrease 1-10%	
Decrease 11-20%	
Decrease over 20%	
No investment	18,5% (5)

37% (10)

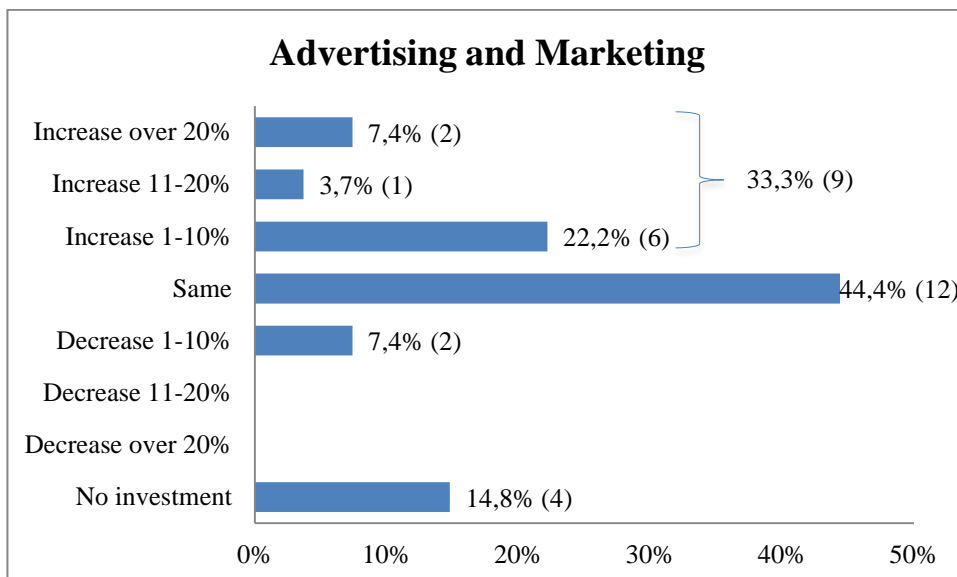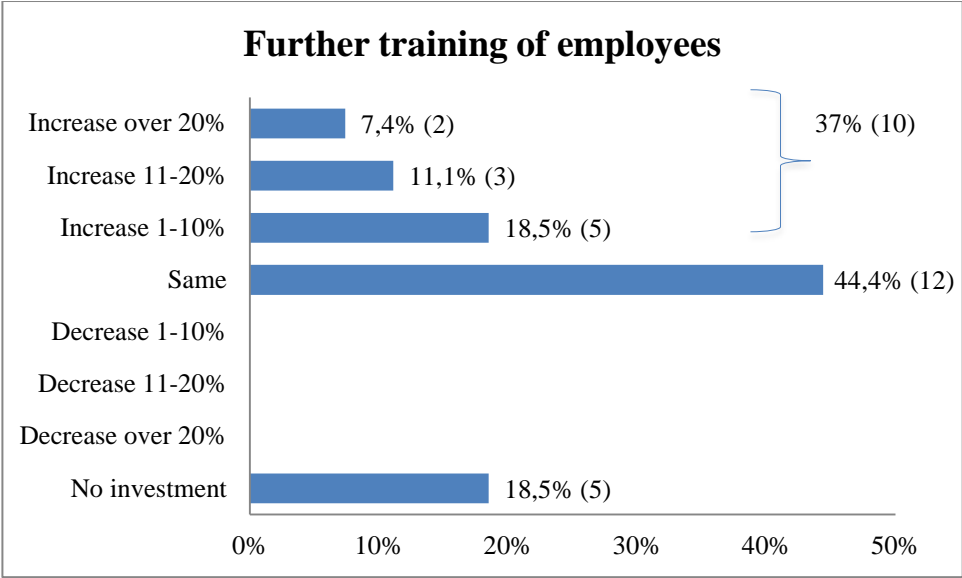Figure 33: Investment in further training of employees

Employee training

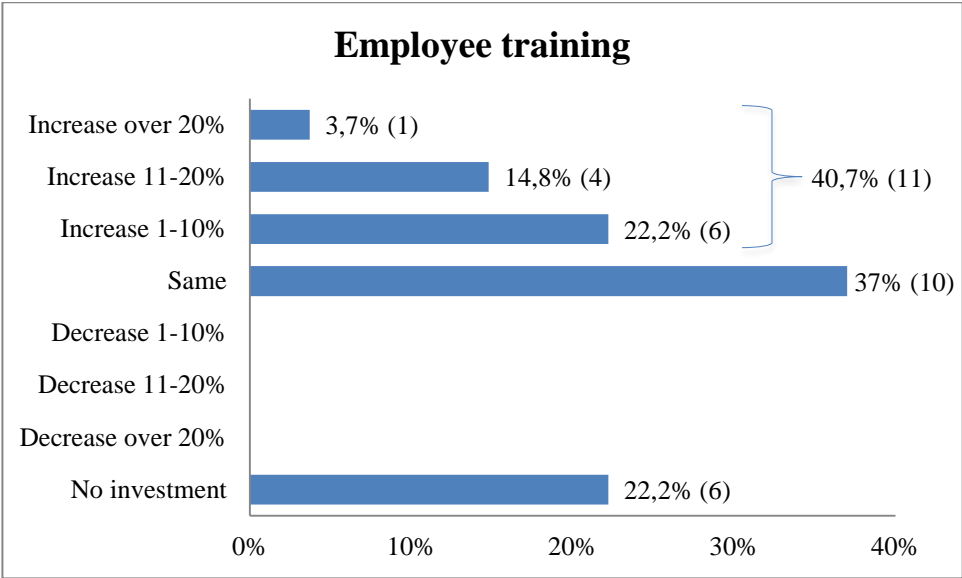| Category	Value
Increase over 20%	3,7% (1)
Increase 11-20%	14,8% (4)
Increase 1-10%	22,2% (6)
Same	37% (10)
Decrease 1-10%	
Decrease 11-20%	
Decrease over 20%	
No investment	22,2% (6)

40,7% (11)

Figure 34: Investment in employee training

66,7% (n=18) of the experts will make investments in their offices whereas those who will increase the investment volume and those who will leave it unchanged balance each other. Three experts (11,1%) plan to decrease investments in the office (figure 35).

Office

Category	Value
Increase over 20%	7,4% (2)
Increase 11-20%	7,4% (2)
Increase 1-10%	11,1% (3)
	25,9% (7)
Same	29,6% (8)
Decrease 1-10%	3,7% (1)
Decrease 11-20%	7,4% (2)
	11,1% (3)
Decrease over 20%	
No investment	33,3% (9)
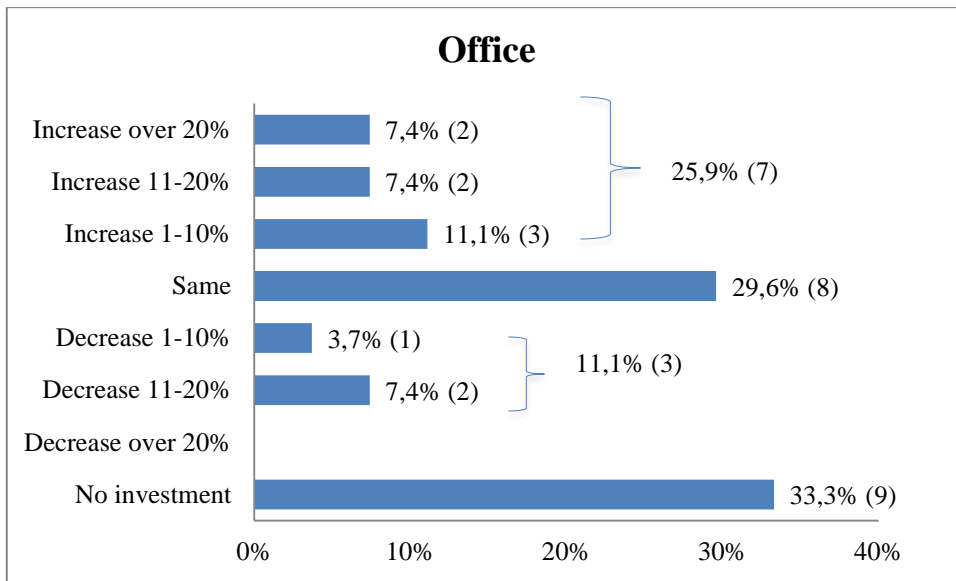
Figure 35: Investment in the office(s)

As it has been found out in the previous analysis of the sector perspective, the emergence of new products and services is widely considered a positive influencing factor on the sector development. However, the analysis reveals that not all experts will invest in new products and services; 66,7% (n=18) will do so. From those who will invest, the majority will increase the investments. In this case it can be concluded that not all companies plan to invest but the ones who will invest – over half of the experts – will increase the volume (figure 36).

New products and services

Category	Value
Increase over 20%	
Increase 11-20%	22,2% (6)
Increase 1-10%	25,9% (7)
	48,1% (13)
Same	18,5% (5)
Decrease 1-10%	
Decrease 11-20%	
Decrease over 20%	
No investment	33,3% (9)

Figure 36: New products and services

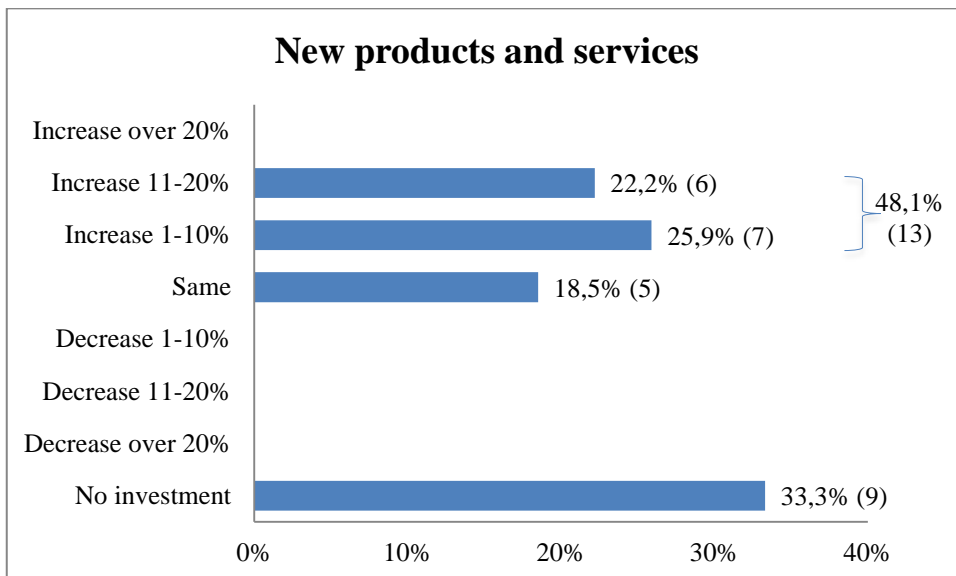The situation is similar in terms of investments in the opening up of new distribution channels. As it has been mentioned before, digitalization has also transformed distribution processes, especially in terms of e-commerce and m-commerce. In the chapter about the communication policy it has been mentioned that customer communication via the smartphone will become more important according to the experts. Although the concrete distribution channel has not been specified, 63% of the experts say they will invest in the opening up of new distribution channels where 33,3% (n=9) will increase their investments and around a quarter (n=7) will keep the investment volume constant (figure 37). This shows that – even though not for all interviewed experts but yet for a majority – new distribution channels will definitely become more relevant in the future.
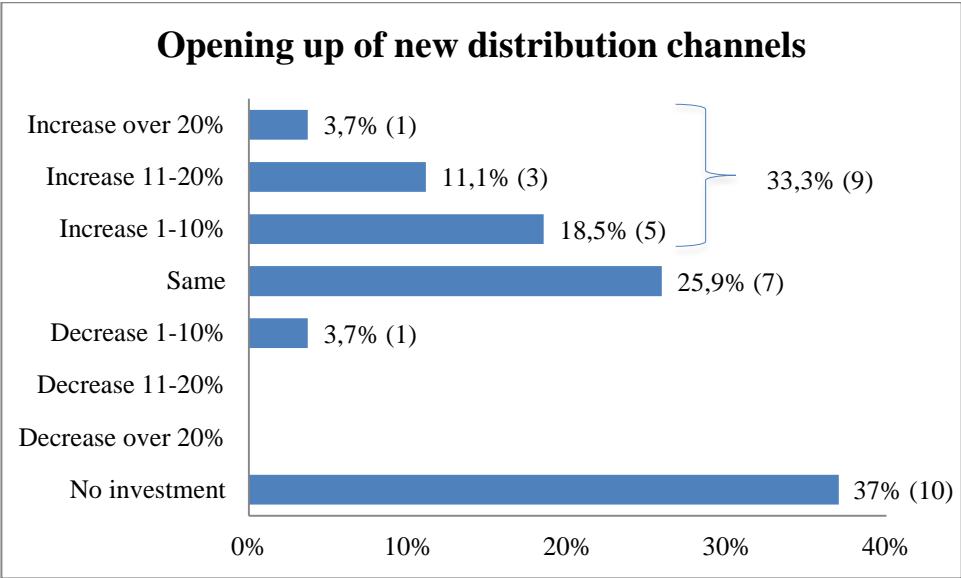
Figure 37: Investment in opening up of new distribution channels

Over half of the experts will also invest in IT (63%, n=17) where ten of them (37%) will increase their investments in this area and six experts will invest the same level (22,2%). Only one expert expects a slight decrease of investments between one and 10 percent (figure 38). This positive development in terms of investments in IT mirrors the need to continuously adapt to and invest in new technologies.
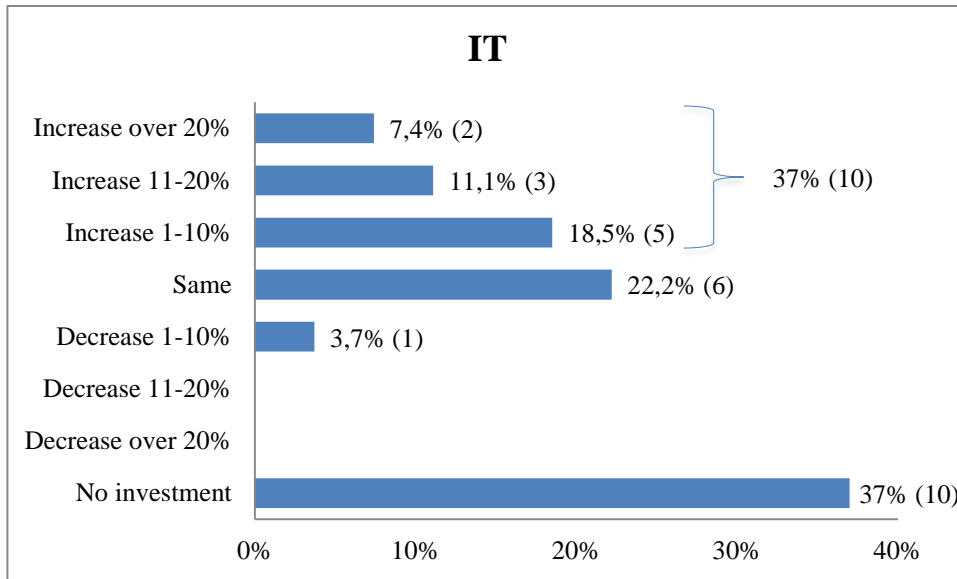
Figure 38: Investment in IT

In the analysis of the sector development it has already been mentioned that according to the experts many firms in the sector will be required to rethink and adapt their business model in order to stay competitive and successful in the long run. Indeed, 59,3% (n=16) of the experts will invest in the adaption of their business model where investments will either stay unchanged or will slightly increase (figure 39).
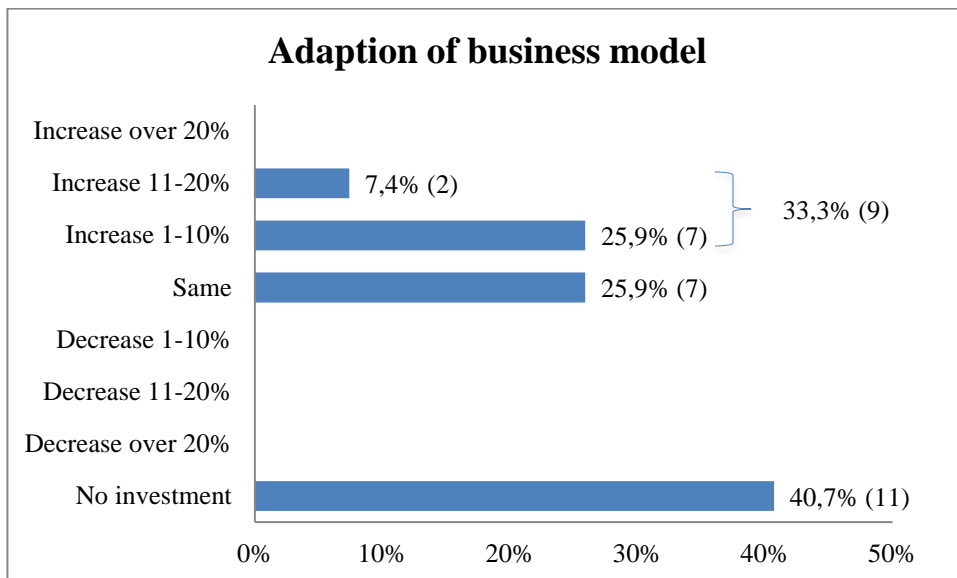
Figure 39: Investment in the adaption of business model

Expansion, on the other hand, appears to only play a minor role. Whereas 37% (n=12) of the experts will invest in business expansion, only 11,1% (n=3) will make investments in geographic expansion (figures 40 & 41).
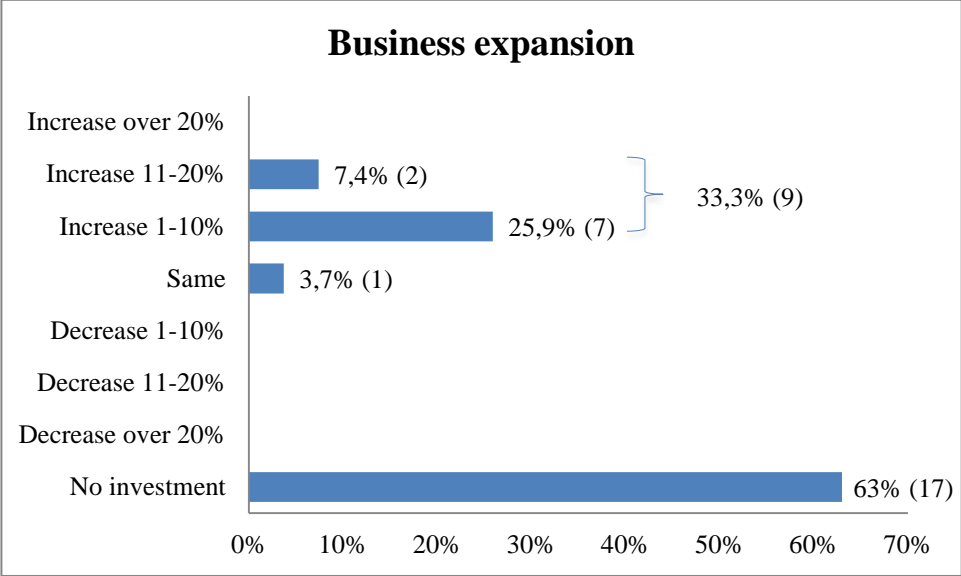
Figure 40: Investment in business expansion
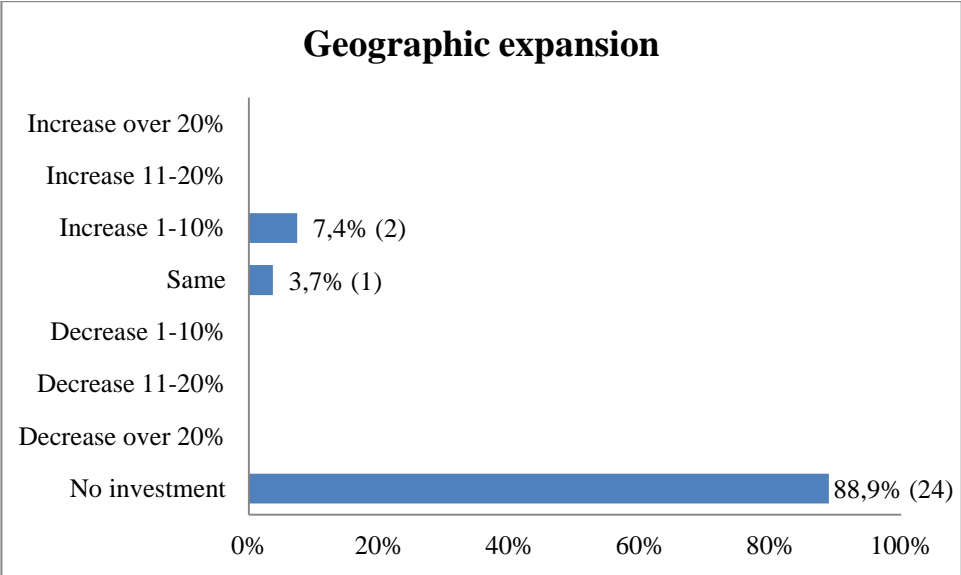
Figure 41: Investment in geographic expansion

4.4.2.7 Employees and employee training

As far as the employee situation is concerned, in terms of the number, especially for apprentices and marginal employees there will not be any change compared to the current situation. Over half of the experts expect that the employee situation of full and part time

employees will remain unchanged whereas 37% think the number will increase and 11,1% expect a decrease (figure 42).

Change of employee situation
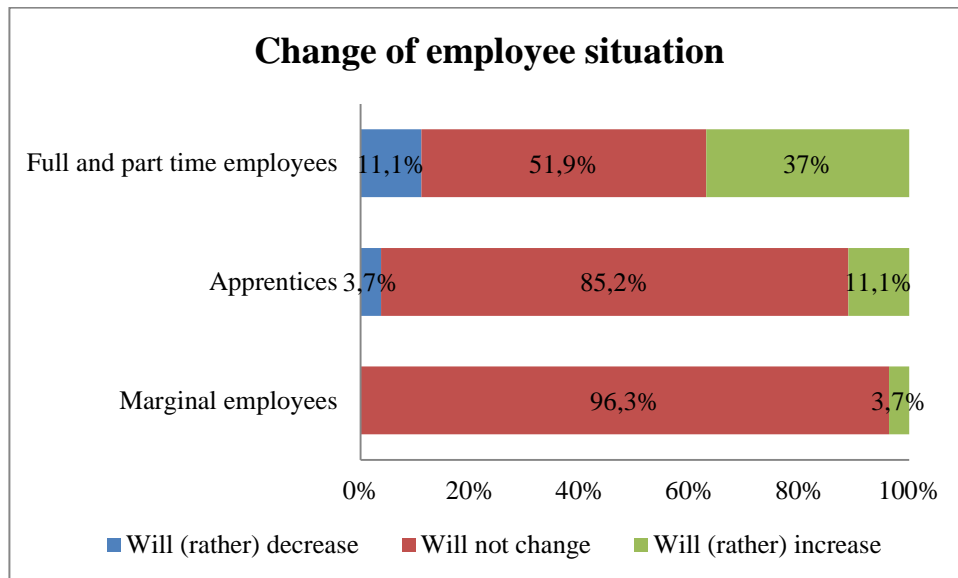
Figure 42: Change of employee situation

Only around a quarter (n=7) of the experts plan to employ apprentices in the upcoming 2-3 years. The prevailing reasons among the experts not to employ apprentices are the lack of resources and the need for professional personnel. Also the requirement of a special license to train apprentices is mentioned as a reason not to train apprentices. One expert also refers to the unsuitability of apprentices in the IT industry due to the widely common night work. On the other hand, among the top reasons for employing apprentices are good experiences and the advantage of training specialists within the company.

As already mentioned the training of employees will become more important in the upcoming years according to the experts. Considering the trainings that will be offered, it can be seen that most companies will offer trainings for technical personnel (70,4%). But also trainings for service personnel (59,3%) and administrative personnel (51,9%) will be offered by over a half of the experts (figure 43). 59,3% of the experts will offer trainings for sales personnel which has been the exclusive mention for other trainings. Sales is also one of the areas where there will be the greatest training needs in the upcoming years. Other areas include the identification of trends as well as the corresponding know-how about new technologies, products and services. Two experts also name security and change management as areas where there will be high training needs within their companies.

Employee training offers

Category	Percentage
Trainings for technical personnel	70,4%
Trainings for service personnel	59,3%
Trainings for administrative personnel	51,9%
Other trainings	59,3%
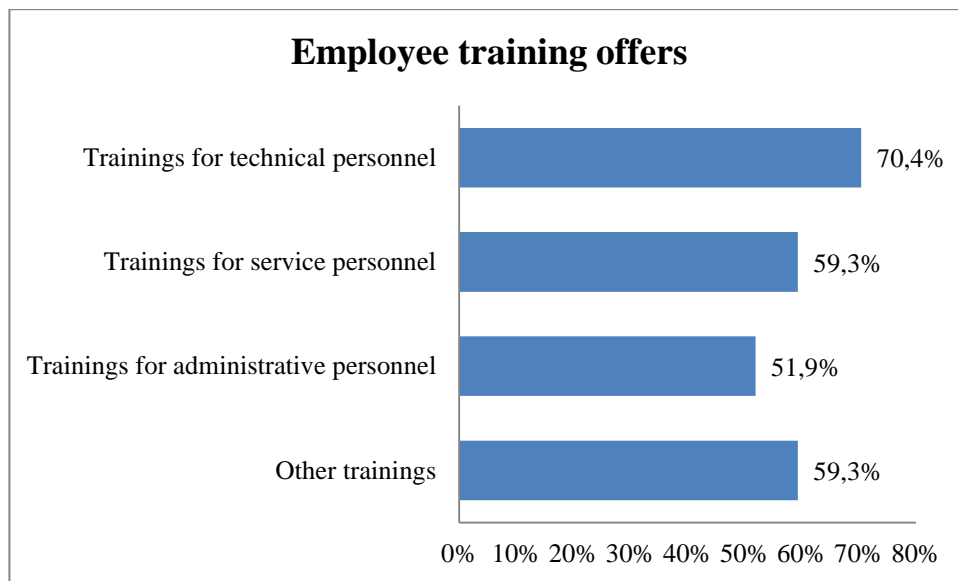
Figure 43: Employee training offers

4.4.2.8 Corporate Social Responsibility

As it has turned out only three experts (11,1%) consider CSR among their most relevant management activities within the next few years. For 44,5% (n=12) of the experts CSR will not be relevant at all. For the remaining 55,5% (n=15) of the experts CSR activities will become slightly more important (mean=3,47; scale from 1=will be of little importance, 5=will be very important). Overall it can be concluded that for some companies CSR will play a role but it will not be among the top priorities of business operations.

4.4.2.9 Growth opportunities and competitive threats

The analysis has already shown that many of the interviewed experts feel that the dynamic environment and the emergence of new products and services may influence the sector as well as their companies positively in the future. In order to identify the areas in which the experts see the highest growth potential a respective question has been asked in the interview. The by far most frequently named areas are the provision of services and software solutions. Especially cloud services and security solutions are named several times. Other mentions in this context are also "customized services", "self-developed software", "All-in services" and "services for data analysis". Another business area where three experts see the highest growth potential is the offer of accessories and supplies. Other single mentions include apps, programming, inkjet printing in the B2B sector and recycling.

The theoretical analysis has shown that companies operating in the Viennese computer retailing sector are confronted with considerable competitive pressures. In order to find out which market players are perceived to be the most severe competitors for the experts, they have been asked to assess the competitive threat for six predefined market players on a scale from 1=very low competitive threat to 5=very high competitive threat. As the table below shows, according to the experts, the highest competitive threat stems from foreign online retailers followed by direct selling by manufacturers (figure 44). Also Austrian online retailers are considered to substantially contribute to a competitive environment whereas (small) specialist stores as well as food retail discounters are perceived to only play a minor role in the competitive setting.

Competitive threats	Mean
Foreign online retailers	3,5 (n=24)
Direct selling	3,12 (n=25)
Austrian online retailers	2,73 (n=22)
Specialist stores	2,3 (n=20)
Small sized specialty stores	1,95 (n=21)
Food retail discounter	1,39 (n=18)

Figure 44: Estimation of competitive threats from other market players

4.4.3 The ideal computer retailer of the future

The theoretical as well as the previous analysis of the expert interviews have both shown that Viennese computer retailers and IT service providers are embedded in a fast-changing environment which brings along a number of opportunities but also challenges and threats. In order to find out the so called best practice example of a company operating in this sector the experts have been asked how they would describe the ideal computer retailer of the future.

Taking all the experts' opinions into account a very clear picture has emerged. The experts widely agree that the ideal computer retailer is a full-range supplier who offers not only hardware products but more importantly also services. In general, the experts think that the sector will move away from pure retailing and will have to put a stronger focus on the provision of services. According to most experts the ideal computer retailer is specialized on a certain area of products and/or services and has extensive, profound and up-to-date knowledge in this field. Its USP is precisely defined and differentiates it from others. What is

more, the ideal computer retailer has a deep understanding for its customers' needs and can quickly adapt to them with the provision of individual solutions. According to most experts also the personal contact and consultation of customers is a highly relevant success factor and an important distinguishing feature to online operating competitors. Quality in general is regarded as an important element of differentiation. Furthermore, several experts emphasize that the ideal computer retailer of the future knows all about new trends and developments and is flexible enough to quickly adapt to changing framework conditions. Some experts believe that ideally computer retailers operate both, in the offline and online world. Finally, according to some experts bigger companies are likely to have a competitive advantage over smaller ones, especially because they can offer a broader range of products and services and can often offer a better reachability, something considered highly relevant especially in the IT industry.

Hereinafter a few quotes by the experts:

"The ideal computer retailer has high levels of expertise and is specialized on a certain customer segment. It is highly important to understand the customer, work closely together with him to provide individual solutions and consultation."

„It is very important to know one's core competence but also to assess whether the market needs this or not. A company in this sector must identify new chances and adapt to new technologies."

"The future is not traditional computer retailing but the provision of services. The ideal company in this sector is big, offers a broad product range, is easily accessible and is flexible so that it can adapt to new trends."

"The ideal computer retailer has a very clear profile and positioning. Quality is essential. He must be able to adapt to customers' needs and wishes."

"Personal contact to customers as well as individual consultation will become very important and serve as differentiation factors to the competition."

4.5 Discussion

The aim of this chapter is to link the results from the theoretical analysis to those from the empirical evaluation. The results are discussed and summarized once again.

The Viennese computer retailing sector is a highly heterogeneous sector; both retailers as well as IT service providers and consultants are part of it. As the theoretical analysis has shown, this sector is embedded in an increasingly dynamic and fast changing environment. On a global level, particularly the two megatrends digitalization and sustainability contribute to this dynamic. Digital innovation has brought forth many new opportunities in terms of communication and distribution. New products and services emerge on a continuous basis. Taking a closer look at the Austrian economic environment has shown that with its low economic growth rate, its shortage of skilled labor and underdeveloped venture capital market it does hold a number of barriers for companies to operate successfully. Indeed, the Austrian computer retail sector seems to have become unstable. High competitive pressures, an increasing concentration and a high number of bankruptcies characterize the sector. This has given rise to the question how the sector will develop in the future.

Whereas from the experts' opinions no clear-cut estimation can be drawn as to whether the sector will develop positively or negatively, the experts widely agree that the future will entail some considerable changes. In many cases these changes will require an adaption of the business model in order to be successful in the long run. In the experts' view hardware retailing alone will no longer be viable in the future and some kind of "adjustment" will take place where many retailers will be forced to close down. Whereas the decline of mere retailing will affect both, the B2C and the B2B segment, yet two different scenarios can be derived.

The following must be said in advance: The previous study by Leimert (2015) has already shown that most companies operating in the Viennese computer retailing sector have a clear focus on the B2B segment. Also 63% (n=17) of the experts interviewed in the context of this study do not sell to consumers at all. This is why the results derived from the study probably have a higher relevance for the B2B segment.

Unlike in the professional segment, businesses that operate in the consumer segment are almost exclusively retailers which is why they will be particularly hard hit by structural changes. Computers and related devices have become products that in most cases do not

require any specialist consultation anymore. Nowadays consumers have many possibilities to inform themselves and to compare product features and prices online to ultimately find the ideal offer. In many cases this has made specialist retailers redundant and has paved the way for online retailers who can – in most cases – make the cheapest offer. If not purchased online – for example due to the desire to feel, touch and try products – consumers will most likely buy a computer or related device at a bigger retail chain where they find the second cheapest offer. However, also bigger Austrian retail chains will find it challenging to compete with – mainly foreign – pure online retailers. Thus, many have already started integrating an online channel heading towards multi-channel or even no-line distribution strategies to face competition. Thus, smaller specialist stores that cannot offer competitive prices will find it difficult to attract consumers. However, there is still a way how smaller computer retailers can remain in the market. This will require an adaption of the business model involving specialization and/or niche occupation together with the provision of services. Thanks to digital innovation and the continuous emergence of new products and services there will be many opportunities for retailers to find a suitable area of business where they can become experts in and provide their customers with competent consultation, services and individual solutions. An area of business that has considerable growth potential is the Internet of Things and the related "smart home". The ideal retailer in the consumer segment is a specialist retailer with a clear positioning who offers its customers both, hardware and software as well as – most importantly – a comprehensive range of relevant services and consultation.

Similar to the consumer segment, businesses operating in the professional segment and focus on pure retailing of hardware will most likely be forced to change their business model to remain competitive. Again the offer of services is one opportunity for retailers to turn the tide. For IT service providers the situation seems to be not as gloomy. Due to the increasing penetration of IT in companies there will be a considerable demand for IT specialists providing business clients with individual solutions, expert know-how and competent consultation. Particularly the demand for cloud services is expected to rise substantially. Although companies already operating in this field are likely to see a bright future, they should not underestimate competitive threats potentially arising with the increasing attractiveness of the sector. Thus, the ideal enterprise operating in the B2B segment has specialized in a certain area, has a very clear and unique positioning and offers its customers comprehensive services. It knows its customers' needs and desires very well and can quickly

provide individual and high-quality solutions. What needs to be stressed is also the personal contact which is regarded a critical success factor.

Still, due to the fast pace of technological innovation the environment can quickly change which may require businesses to adapt. Hence, it is vital for enterprises operating in both segments to continuously observe the market, spot and assess trends and if appropriate be flexible enough to adapt to these changes, e.g. an adjustment of the product and/or service portfolio.

According to the experts, especially the increasing penetration of IT in Austrian companies and the corresponding rising demand for IT services – in particular cloud and hosting services, security and storage solutions as well as services for data analysis – will influence the Viennese computer retailing sector positively in the upcoming 3-5 years. Also the Internet of Things is considered a positive influencing factor, especially by the interviewed service providers. What is more, the emergence of new products and services is perceived to have a positive impact on the sector development, mainly due to the many new opportunities that come with it. This also aligns with what the experts think will positively impact their own sales development in the upcoming years. Last but not least, in the experts' view specialization and consultation will have a positive impact, both on the sector development as well as on their own businesses' sales development.

In terms of negative influencing factors on the sector development, particularly the decrease of trade margins stands out which is also what many experts expect to negatively impact their sales development. What is more, the increasing price transparency enabled by price comparison websites and the strong position of – especially foreign – online retailers are considered to negatively impact the sector but also the experts' companies' sales development in the future. Yet, this negative assessment can mainly be traced back to retailers. Other important mentions are the shortage of skilled labor – which is assessed particularly negatively by retailers – and the weak demand in general. Finally, many experts point out that especially the economic environment as well as political framework conditions and regulations will impact sales development rather negatively.

The business area that is considered to yield the highest growth potential in the future is the provision of software and services where primarily cloud and security solutions will be relevant. A very recent study by SORA (Dandrea-Böhm 2015) has uncovered an alarming

state of carelessness in terms of IT security among Austrian companies. While 66% of small enterprises and 46% of sole proprietors feel secure only 12% of IT experts confirm this assessment. Thus, there is a considerable gap between the companies' perceived security valuation and the actual security. Only 80% of the companies perform back-ups on a regular basis (Dandrea-Böhm 2015). Consequently, there is a substantial backlog demand especially among smaller Austrian companies which yields a high growth potential for Viennese IT service providers in the field of IT security.

The experts perceive the highest competitive threats stemming from foreign online retailers followed by direct distribution by manufacturers.

Considering the expected sales development, the majority of experts takes a positive view. Almost half of the experts expect an increase while 37% estimate sales to remain on the same level in the next 2-3 years.

While particularly desktop but also notebook PCs will – for those relevant – tendentially contribute less to sales in the next 2-3 years, revenue generated by tablets, server, accessories and other hardware products such as printer or scanner can be expected to either remain at the same level or increase.

Whereas software in general will be offered by more companies, it will generate higher sales in the future and thus become more important. Also software development and programming will clearly gain in importance as measured by the expected share of sales. The same is true for consultation services.

Among the top services currently offered by the experts are delivery services, maintenance and installation. According to the experts especially services for data analysis, hosting, system integration, online ordering and cloud services will gain in importance.

This again mirrors a shift away from hardware towards software and service solutions.

The before mentioned considerable importance of personal customer service also appears in terms of distribution. The by far most important distribution channel is direct selling; only two of the 27 interview partners do not use it. Almost half of the experts expect sales to increase in this channel which shows that it will become even more important in the future. 12 of the 27 experts will sell through an online shop. All except of one expect a considerable increase of sales in this channel. An online shop naturally is not a suitable distribution channel for all business formats. However, for many businesses it will and must be integrated

into the distribution strategy – if it has not been already – in order to stay competitive in the long run.

Similar to the distribution policies, the experts' communication activities show a strong tendency towards personal contact. Personal customer visits, the own website, personal e-mail, SEO and newsletter rank highest among the communication tools used by the respondents. While all of these will play a major role also in the future, it can be noticed that especially communication measures in connection with the smartphone will gain in importance.

One of the most important management priorities is the identification of market trends and the corresponding adaption of the product and service portfolio. Again also the stronger focus on services and consultation is mentioned and will rank among the top management priorities. Thus, also communication with customers as well as loyalty marketing and customer relationship management will be of considerable importance. What is more, particularly the acquisition of new customers is considered to require substantial amounts of management capacities. Also personnel management including employee training will rank among the top management priorities.

The majority of experts will make investments in the near future while the investment volume in most cases will remain at the same level. Most experts will invest in advertising and marketing as well as in (further) training of employees; in both cases there are experts that will hold the investment volume constant whereas others will invest more in the near future. Although overall less companies will invest, particularly in the fields of new products and services as well as IT the investment levels will increase. Continuous or partly even more investments will be made in terms of the opening up of new distribution channels whereas business and geographic expansion appears to be of minor importance in terms of investments.

As pointed out several times, training of employees will be of considerable importance. Substantial amounts of management capacity and investment volume will be attached to it and most experts will offer a comprehensive range of trainings. Sales, trend spotting and technological know-how is considered to require the most training needs. However, while trainings for existing employees will play a major role only around a quarter will employ

apprentices in the next years. This is mainly due to the lack of resources or the need for professional personnel.

4.6 Conclusion

The Viennese computer retailing sector is embedded in an increasingly dynamic environment where from one year to the other much can change. Due to this dynamic it appears to be hardly impossible to make any precise forecasts on the future. However, the majority of experts interviewed agree that mere hardware retailing – both in the B2C and the B2B segment – will further decline and businesses that will not adapt their business model to this structural change may be forced to close down. Above all, the sale of desktop and notebook PCs will lose importance. Particularly in the field of retailing severe competitive pressures stem from foreign online retailers who can mostly offer a wide range of products at the lowest price. As the computer and related devices have evolved into products that mostly do not require any specialist consultation anymore, especially smaller retailers will face hard times. This is already mirrored by the frequent insolvencies by Austrian retailers. The recommended call to action for retailers is therefore to adapt their business model. The experts widely agree that specialization and the offer of services and consultation will be of considerable importance for companies operating in the Viennese computer retailing sector. Thus, retailers in the B2C and B2B segment are well-advised to specialize in a certain field of operation, acquire expert know-how and provide their customers with a full range of high-quality services. In the B2C segment above all the so called smart home is considered to hold great potential. The same is true for IT service providers; specialization – especially for smaller firms – can serve as a major element of differentiation. Currently, cloud services as well as security and storage solutions are considered to yield the highest growth potential. A vital success factor will also be the personal customer contact and service. This is why direct selling as well as personal customer visits will still be most important in terms of distribution and customer communication. It will be highly important for firms to develop a deep understanding for a customer's needs and desires, be able to quickly adapt to it and offer individual solutions. This also requires competent staff with expert know-how. Thus, most firms plan to heavily invest in employee training, especially for sales personnel.

Differentiation by high quality services, expert knowledge in a specialized field and personal customer contact and care has been found to be the most promising way to compete with foreign competition as well as direct selling manufacturers.

However, as new products and services emerge on a continuous basis it is inevitable to continuously observe the market for new trends and opportunities. Only companies that are flexible enough to quickly adapt to a fast changing environment will have a successful future ahead of them.

4.7 Limitations and further research

Limitations of the study arise from the small sample size of 27 interviewed experts. Thus, the results derived from the analysis are not representative for the whole sector but rather represent opinions and assessments of the experts. Only tendencies can be assumed. What is more, as the interviews were conducted in a face-to-face setting social cues might have biased the results. However, by the use of a standardized questionnaire this risk has been kept to a minimum. Another limitation results from the heterogeneous sector. Not only computer retailers (serving the B2C or B2B segment) but also IT service providers and consultants are part of the Viennese computer retailing sector. For the sample it could be managed to have an equal number of respondents of retailers and service providers. Yet, the experts interviewed show a strong focus on the B2B segment which is why the focus of the thesis has also shifted towards the segment of business clients. This should also be kept in mind when viewing the results. What is more, as it has turned out the two market players – retailers and service providers – do business in completely different fields and consequently face different challenges and opportunities. It has been tried to design a questionnaire that would fit to both circumstances. However, this might on the one hand have biased the results and on the other hand might have left out relevant aspects.

This leads to the recommended further research. In further studies these two types of companies should be dealt with separately. Ideally, two different studies would be designed, each focusing either on retailers or on IT service providers. As there is a considerable difference between companies focusing on the B2C or B2B segment also this should be taken into consideration. The author advises to conduct both, in-depth expert interviews to dig even deeper into the field of structural changes as well as a quantitative study with a representative sample for Vienna. Finally, the underlying study refers to the Viennese computer retailing sector. Further research would be needed to make predictions on a national level.

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Appendix

Questionnaire

<div align="center">

Fragebogen

Zukunft des Wiener Computer- und Büromaschinenhandels

</div>

Fragebogennummer: .... **Datum:** ....

Uhrzeit Beginn: .... **Uhrzeit Ende:** ....

Name des Gesprächspartners: ....

Name des Unternehmens: ....

Anmerkungen: ....

"Guten Tag! Mein Name ist Alexandra Thonabauer und im Rahmen meines Studiums an der Wirtschaftsuniversität Wien schreibe ich gerade an meiner Masterarbeit. Das Institut für Handel & Marketing führt derzeit eine Studie zum Thema Gegenwart und Zukunft des Wiener Computer- und Büromaschinenhandels durch. Die Studie soll wertvolle Ein- und Ausblicke in die Herausforderungen der Branche geben.

Als erster Schritt erfolgte bereits eine Bestandsaufnahme. Im Rahmen dieser Umfrage soll nun auf die Zukunftsperspektiven der Branche eingegangen werden. Hierbei wurden Sie mir als Branchenexperte und Vorreiter in Sachen Zukunft von der Wirtschaftskammer Wien empfohlen.

Vielen Dank noch einmal für Ihre Teilnahme an der Umfrage.

Die Daten werden selbstverständlich anonymisiert ausgewertet und analysiert. Rückschlüsse auf Ihr Unternehmen sind nicht möglich."

Angaben zu Ihrer Person und zum Unternehmen

„Wir beginnen die Umfrage mit ein paar Fragen zu Ihrer Person und zum Unternehmen."

1. **Welche Position haben Sie im Betrieb?**
   - [ ] Inhaber / Gesellschafter
   - [ ] Geschäftsführer
   - [ ] Leitender Angestellter .... (Ressortbereich)
   - [ ] Angestellter .... (Ressortbereich)
   - [ ] Sonstiges: ....

2. Wie lange sind Sie schon in der Branche tätig?

☐ Kürzer als 1 Jahr

☐ 1-3 Jahre

☐ 4-6 Jahre

☐ 7-9 Jahre

☐ 10 Jahre oder länger

3. Welcher Unternehmensart gehört Ihr Unternehmen an?

☐ Selbstständiger (Handels-)Betrieb

☐ Filialist, Anzahl Filialen: ....

☐ Franchisenehmer

☐ Keine Angabe / Weiß nicht

4. Wie viele Mitarbeiter sind am Standort, in dem Sie tätig sind, und wie viele insgesamt in Ihrem Unternehmen beschäftigt?

Anzahl Standort: ....   ☐ Keine Angabe / Weiß nicht

Anzahl insgesamt: ....   ☐ Keine Angabe / Weiß nicht

5. Wird die Mitarbeiteranzahl in den einzelnen Kategorien in den nächsten 2-3 Jahren verglichen zu heute eher zunehmen, gleich bleiben oder eher abnehmen?

	eher abn.	gleich	eher zun.	k.A.
Voll- und Teilzeitbeschäftigte	☐	☐	☐	☐
Lehrlinge	☐	☐	☐	☐
Geringfügig Beschäftige	☐	☐	☐	☐

TEIL I: Branchenentwicklung

Rahmenbedingungen Branche

„Weiter geht es nun mit der zukünftigen Branchenentwicklung. Für die Branche des Wiener Computer- und Büromaschinenhandels hat sich in letzter Zeit eine Vielzahl an neuen Rahmenbedingungen und Herausforderungen ergeben, die wahrscheinlich auch in Zukunft zur Dynamik der **Branche** beitragen werden. Die folgenden Fragen beziehen sich auf diese Rahmenbedingungen aus der **Branchenperspektive**."

6. Wie wird Ihrer Meinung nach der Computerhandel in Wien in 3-5 Jahren aussehen? Welches Szenario ist am wahrscheinlichsten? Bitte beschreiben Sie möglichst genau.

....

....

....

....

7. Wie wird sich Ihrer Meinung nach die Branche in den kommenden 3-5 Jahren entwickeln? Bitte beurteilen Sie anhand der folgenden Skala. (Fragebogenhilfe 1 vorlegen)

1 .... 2 .... 3 .... 4 5

sehr schlecht   sehr gut

☐ Weiß nicht / Keine Angabe 9

8. Welche Rahmenbedingungen werden die Branchenentwicklung in den nächsten 3-5 Jahren besonders positiv bzw. besonders negativ beeinflussen. Bitte nennen Sie jeweils 3 Rahmenbedingungen und reihen Sie diese nach der Wichtigkeit bzw. der Größe des Einflusses.

Positiv

1. ....

2. ....

3. ....

Negativ

1. ....

2. ....

3. ....

9. Bitte beurteilen Sie ob folgende Rahmenbedingungen in den nächsten 3-5 Jahren einen eher positiven, eher negativen oder keinen Einfluss auf die Branche haben werden.

	eher positiv	eher negativ	kein Einfl.	k. A.
Soziale Medien (Facebook, Twitter, etc.)	☐	☐	☐	☐
Fähigkeit der Kunden Produkteigenschaften und Preise online zu vergleichen	☐	☐	☐	☐
Verlagerung zum Online- und Mobile-Handel	☐	☐	☐	☐
Multi-Channel-Handel	☐	☐	☐	☐

	eher positiv	eher negativ	keine Veränd.	k.A.
Konzentration der Computerhandelsbranche	☐	☐	☐	☐
Zunehmende Artikelvielfalt	☐	☐	☐	☐
Fachkräftemangel	☐	☐	☐	☐
Konjunkturelle Lage	☐	☐	☐	☐
Sinkende Handelsmargen	☐	☐	☐	☐
Schwache Konsumentennachfrage	☐	☐	☐	☐
Zunehmendes Nachhaltigkeitsbewusstsein	☐	☐	☐	☐
Big Data / Datenflut	☐	☐	☐	☐
The Internet of Things / Das Internet der Dinge	☐	☐	☐	☐
IT-Outsourcing	☐	☐	☐	☐
Zugang zu Kapital	☐	☐	☐	☐
Errichtung von Offline-Geschäften durch Online-Händler	☐	☐	☐	☐
Nachfrage nach individueller Software (inkl. Apps)	☐	☐	☐	☐
Recycling von Altgeräten	☐	☐	☐	☐
Fokus auf Beratung	☐	☐	☐	☐
Spezialisierung	☐	☐	☐	☐
Rückgang der Nachfrage nach PCs (Desktop & Laptop)	☐	☐	☐	☐
Hohe Nachfrage nach mobilen Geräten (Tablets, Smartphones, etc.)	☐	☐	☐	☐
Nachfrage nach Cloud und Hosting Services	☐	☐	☐	☐
Nachfrage nach Services zur Datenanalyse	☐	☐	☐	☐
Nachfrage nach Programmen zur Unternehmenssicherheit	☐	☐	☐	☐

TEIL 2: Unternehmensperspektive

"Als nächstes folgen ein Fragen, welche sich direkt auf **Ihr Unternehmen** beziehen."

Serviceleistungen

„Wir beginnen mit den durch Ihr Unternehmen angebotenen Serviceleistungen."

---

10. **Bieten Sie Ihren Kunden derzeit die folgenden Serviceleistungen an? Bitte sagen Sie mir bei den angebotenen Serviceleistungen ebenfalls ob sich deren Bedeutung bezogen auf Ihr Unternehmen in den nächsten 2-3 Jahren jeweils eher positiv oder eher negativ verändern wird oder ob die Bedeutung gleichbleibt.**

	eher positiv	eher negativ	keine Veränd.	k.A.

☐ Vor-Ort-Reparatur	☐	☐	☐	☐
☐ Lieferservice	☐	☐	☐	☐
☐ Wartung (Hardware-Reparatur, Software-Wartung, Server- & Storage-Wartung)	☐	☐	☐	☐
☐ Abholservice	☐	☐	☐	☐
☐ Online-Bestellung	☐	☐	☐	☐
☐ Installation	☐	☐	☐	☐
☐ Software-Entwicklung	☐	☐	☐	☐
☐ Cloud Services	☐	☐	☐	☐
☐ Hosting	☐	☐	☐	☐
☐ Services zur Datenanalyse	☐	☐	☐	☐
☐ Programmierung	☐	☐	☐	☐
☐ Systemintegration	☐	☐	☐	☐
☐ Entsorgung von Altgeräten	☐	☐	☐	☐
☐ Recycling von Altgeräten	☐	☐	☐	☐

11. Haben Sie vor in den nächsten 2-3 Jahren darüber hinaus noch weitere Serviceleistungen anzubieten?

Sonstige: ....

Sonstige: ....

Sonstige: ....

Umsatzentwicklung

„Die folgenden Fragen beziehen sich auf den Umsatz bzw. die zukünftige Umsatzentwicklung Ihres Unternehmens in den kommenden 2-3 Jahren."

12. Wie hoch war in etwa der Netto-Jahresumsatz des Standortes in Mio. im Jahr 2014?

☐ bis 500.000

☐ 500.001 – 1 Mio.

☐ 1 – 5 Mio.

☐ über 5 Mio.

☐ Keine Angabe / Weiß nicht

13. Wie hoch war in etwa der Netto-Jahresumsatz des gesamten Unternehmens in Mio. im Jahr 2014?

☐ bis 5 Mio.

☐ 5 – 10 Mio.

☐ über 10 Mio.

☐ Keine Angabe / Weiß nicht

14. Wie schätzen Sie die Umsatzentwicklung Ihres Unternehmens generell in den nächsten 2-3 Jahren ein? Bitte geben Sie eine ungefähre prozentuelle Schätzung an. (Interviewer stuft Antwort selbst ein)

☐ Zuwachs von mehr als 20%

☐ Zuwachs zwischen 11% und 20%

☐ Zuwachs zwischen 1% und 10%

☐ Ungefähr derselbe Umsatz

☐ Abnahme zwischen 1% und 10%

☐ Abnahme zwischen 11% und 20%

☐ Abnahme von mehr als 20%

☐ Keine Angabe / Weiß nicht

15. Welche Entwicklungen werden Ihrer Meinung nach einen besonders positiven und welche einen besonders negativen Einfluss auf die Umsatzentwicklung Ihres Unternehmens in den nächsten 2-3 Jahren haben? Bitte nennen Sie jeweils drei Entwicklungen und reihen Sie diese jeweils nach der Wichtigkeit bzw. der Größe des Einflusses.

Positiv

1. ....

2. ....

3. ....

Negativ

1. ....

2. ....

3. ....

Chancen & Gefahren für das Unternehmen

„Denken Sie nun bitte an die Zukunft Ihres Unternehmens in den nächsten 3-5 Jahren."

16. **In welchen Geschäftsfeldern sehen Sie das größte Wachstumspotential für Ihr Unternehmen in den nächsten 3-5 Jahren?**

....

....

....

17. **Welche anderen Marktteilnehmer werden in den kommenden 3-5 Jahren eine direkte Konkurrenz für Ihr Unternehmen darstellen?** Bitte bewerten Sie diese nach Intensität der Konkurrenz anhand der folgenden Skala. (Fragebogenhilfe 2 vorlegen)

1 .... 2 .... 3 .... 4 5

sehr geringe   sehr starke

Konkurrenz   Konkurrenz

☐ Weiß nicht / Keine Angabe 9

Direktvertrieb durch Hardware/Software-Hersteller ....

LEH-Discounter (z.B. Hofer) ....

Österreichischer Online-Handel ....

Ausländischer Online-Handel (z.B. Amazon) ....

Fachmärkte (z.B. Saturn) ....

Kleine Fachhandelsgeschäfte ....

Umsatzverteilung

„Nun folgen ein paar Fragen zur Verteilung des Netto-Jahresumsatzes bezogen auf das gesamte Unternehmen."

18. **Welcher der folgenden Unternehmensbereiche macht derzeit mehr als 50 Prozent Ihres Jahresumsatzes aus?**

☐ Handel mit Hardware und/oder Software

☐ Dienst- und Serviceleistungen

☐ Beratungsleistungen

☐ Keiner / Verteilt sich

☐ Keine Angabe / Weiß nicht

19. Wie teilt sich Ihr Jahresumsatz bezogen auf das gesamte Unternehmen hinsichtlich Ihrer Kundengruppen in Prozent auf? Bitte geben Sie Schätzwerte an. Die Angaben sollen insgesamt eine Summe von 100% ergeben.

Privatkunden ....%   ☐ Keine Angabe / Weiß nicht

Geschäftskunden ....%   ☐ Keine Angabe / Weiß nicht

Institutionelle Kunden (z.B. Bund, Gemeinden) .... %   ☐ Keine Angabe / Weiß nicht

20. Hat Ihr Unternehmen ein oder mehrere eigene Ladengeschäfte?
(Nur, fragen, wenn Ladengeschäft generell vorhanden:) **Wie viel Quadratmeter hat die Verkaufsfläche des Standortes, in dem Sie tätig sind bzw. die Verkaufsfläche des gesamten Unternehmens?**

Eigene(s) Ladengeschäft(e):

☐ Ja

☐ Nein

Standort   Gesamt

.... m^2 .... m^2 ☐ Keine Angabe / Weiß nicht

21. Wie wird sich Ihrer Einschätzung nach Ihr Jahresumsatz in 2-3 Jahren in den unterschiedlichen Vertriebskanäle verändern? Bitte beantworten Sie die Frage mithilfe der folgenden Prozentbereiche. Sie können auch angeben, dass ein Vertriebskanal gar nicht genutzt werden wird. (Fragebogenhilfe 3 vorlegen)

	+ >20 %	+ 11-20 %	+ 1-10 %	+/- %	- 1-10 %	- 11-20 %	- >20 %	k.A.	k.Nutz.
Eigene(s) Ladengeschäft(e)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Versandhandel (Kataloge)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Direktverkauf	☐	☐	☐	☐	☐	☐	☐	☐	☐
Eigener Online-Shop	☐	☐	☐	☐	☐	☐	☐	☐	☐
Amazon Marketplace	☐	☐	☐	☐	☐	☐	☐	☐	☐
Internetportal eines anderen Anbieters (z.B. eBay)	☐	☐	☐	☐	☐	☐	☐	☐	☐

22. Wie wird sich Ihrer Einschätzung nach die Verteilung Ihres Jahresumsatzes auf die angebotenen Produkte und Leistungen in 2-3 Jahren verändern? Bitte beantworten Sie die Frage mithilfe der folgenden Prozentbereiche. (Fragebogenhilfe 3 vorlegen)

	+ >20 %	+ 11-20 %	+ 1-10 %	+/- %	- 1-10 %	- 11-20 %	- >20 %	k.A.	k.Angebot
Hardware – Desktop PC	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hardware – Notebook PC	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hardware – Tablets	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hardware – Server / Server-Zubehör	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sonstige Hardware (z.B. Smartphones)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Software	☐	☐	☐	☐	☐	☐	☐	☐	☐
Zubehör	☐	☐	☐	☐	☐	☐	☐	☐	☐
Service – Beratungsleistungen	☐	☐	☐	☐	☐	☐	☐	☐	☐
Service – Hardwareinstallation, Reparatur	☐	☐	☐	☐	☐	☐	☐	☐	☐
Service – Softwareentwicklung, Programmierung	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sonstige Services	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sonstiges _____	☐	☐	☐	☐	☐	☐	☐	☐	☐

23. Wie hoch schätzen Sie die Nachfrage nach nachhaltiger bzw. grüner Hardware und IT, z.B. recycelter Hardware, besonders ressourcensparender Hardware, Hardware mit reduziertem Schadstoffgehalt etc., bezogen auf Ihr Unternehmen in den nächsten 2-3 Jahren ein? Bitte beantworten Sie die Frage anhand der Skala von 1 bis 5. (Fragebogenhilfe 4 vorlegen)

1 ....2....................3....................4.....................5

sehr niedrig   sehr hoch

0 .... Keine Nachfrage
9 .... Weiß nicht / k. A.

24. (Wenn es Nachfrage nach grüner IT geben wird:) **Um welche Produkte und Leistungen wird es sich hierbei konkret handeln?**

....

....

....

Management

"Als nächstes würde ich gerne die Managementtätigkeiten in Ihrem Unternehmen ansprechen."

25. Worin sehen Sie die Top 3 Managementprioritäten in den nächsten 2-3 Jahren für Ihr Unternehmen?

1. ....

2. ....

3. ....

26. Welche der folgenden Tätigkeiten werden aus der Sicht des Managements in Ihrem Unternehmen in den nächsten 2-3 Jahren die meiste Zeit, Ressourcen und Energie benötigen?

(Fragebogenhilfe 5 vorlegen)

☐ Wesentliche Verbesserung der Arbeits- und Bestellprozesse, sowie Logistik

☐ Wesentliche Maßnahmen zur Kostenreduktion

☐ Wesentliche Investitionen in organisches Wachstum (z.B. Marketingaktivitäten)

☐ Erschließung neuer Märkte und Kundengruppen

☐ Verhandlungen mit Lieferanten und Kooperationspartnern

☐ Gewinnung neuer Kunden

☐ Aus- und Weiterbildung von Mitarbeitern

☐ Integration von Vertriebskanälen

☐ Management einzelner Vertriebskanäle

☐ Kundenbindungsmarketing

☐ Aufbau von Kooperationen

☐ Aufbau eines Online-Shops

☐ CSR bzw. nachhaltige Unternehmensführung

☐ Sonstige: ....

Investitionen

"Die nächsten Fragen beziehen sich auf Ihre Unternehmensinvestitionen in den nächsten 2-3 Jahren."

27. Worin sehen Sie die Top 3 Bereiche, in die Ihr Unternhemen in den nächsten 2-3 Jahren investieren wird?

1. ....

2. ....

3. ....

28. Bitte beurteilen Sie anhand der folgenden Skala den erwarteten Zuwachs bzw. die erwartete Abnahme der Investitionen in Ihrem Unternehmen in den nächsten 2-3 Jahren.

(Fragebogenhilfe 3 vorlegen)

	+ >20 %	+ 11-20 %	+ 1-10 %	+/- %	- 1-10 %	- 11-20 %	- >20 %	k.A.	k.Inv.
Allgemeine Investitionen	☐	☐	☐	☐	☐	☐	☐	☐	☐
Geographische Expansion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Informationstechnologien	☐	☐	☐	☐	☐	☐	☐	☐	☐
Werbung und Marketing	☐	☐	☐	☐	☐	☐	☐	☐	☐
Büroräumlichkeiten	☐	☐	☐	☐	☐	☐	☐	☐	☐
Neue Produkte und Dienstleistungen	☐	☐	☐	☐	☐	☐	☐	☐	☐
Geschäfterweiterung	☐	☐	☐	☐	☐	☐	☐	☐	☐
Anpassung des Geschäftsmodelles	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ausbildung von Mitarbeitern	☐	☐	☐	☐	☐	☐	☐	☐	☐
Weiterbildung von Mitarbeitern	☐	☐	☐	☐	☐	☐	☐	☐	☐
Errichtung neuer Vertriebswege	☐	☐	☐	☐	☐	☐	☐	☐	☐

Kommunikationspolitik

"Nun folgt noch eine Frage zur Kommunikationspolitik in Ihrem Unternehmen."

29. Ich lese Ihnen nun nacheinander einige Kommunikationsmaßnahmen vor. Bitte sagen Sie mir wie sich die Bedeutung der einzelnen Kommunikationsmaßnahmen für Ihr Unternehmen in den nächsten 2-3 Jahren verändern wird? Bitte beurteilen Sie anhand der folgenden Skala. Sie können auch sagen, dass eine Kommunikationsmaßnahme keine Rolle spielen wird.

(Fragebogenhilfe 6 vorlegen)

1 ....2....................3....................4....................5   0 .... Wird keine Rolle spielen

wird stark   gleiche   wird stark   9 .... Weiß nicht / k. A.
an Bedeutung   Bedeutung   an Bedeutung
verlieren   gewinnen

Eigene Website ....

Auftritt in sozialen Netzwerken ....

Newsletter Versand (per E-Mail) ....

Suchmaschinen-Optimierung (SEO) ....

Suchmaschinen-Werbung (SEA) ....

Persönliche Kundenbesuche ....

Persönliches E-Mail ....

Inserate in Fach- und Tageszeitungen ....

Homepage-Optimierung für Smartphones ....

App für Smartphones ....

Eintrag auf Preisvergleichs-Webseiten ....

Onlineshop-Optimierung für Smartphones ....

Banner-Werbung im Internet ....

Online/Mobile Promotions oder Coupons ....

Geo-Marketing (z.B. Push-Benachrichtigungen oder Angebote auf dem Smartphone) ....

Corporate Social Resposibility

"Nun noch kurz zum Thema Corporate Social Responsibility bzw. nachhaltiger

Unternehmensführung."

---

30. Wie schätzen Sie die Bedeutung von CSR bzw. eine nachhaltige Unternehmensführung in Ihrem Unternehmen in den nächsten 2-3 Jahren ein? Bitte beurteilen Sie anhand der folgenden Skala. Sie können auch angeben, dass es gar keine Bedeutung haben wird. (Wenn CSR eine Bedeutung haben wird:) **Was werden die drei wichtigsten CSR Maßnahmen in Ihrem Unternehmen in den nächsten 2-3 Jahren sein?** (Fragebogenhilfe 9 vorlegen)

1 ....2....................3....................4....................5   0 .... spielt keine Rolle

sehr   sehr   9 .... Weiß nicht / k. A.
geringe   hohe
Bedeutung   Bedeutung

1. ....

2. ....

3. ....

Aus- und Weiterbildung von Mitarbeitern

„Nun würde ich gerne näher auf das Thema Aus- und Weiterbildung von Mitarbeitern eingehen."

31. Haben Sie vor in den nächsten 2-3 Jahren Lehrlinge auszubilden?

☐ Ja

☐ Nein

☐ Weiß nicht / Keine Angabe

32. Warum haben Sie vor Lehrlinge bzw. keine Lehrlinge auszubilden?

....

....

33. In welchen Bereichen in Ihrem Unternehmen wird in den nächsten 2-3 Jahren der größte Aus- und Weiterbildungsbildungsbedarf bestehen?

....

....

....

34. Welche Aus- und Weiterbildungsmaßnahmen werden in den nächsten 2-3 Jahren innerhalb Ihres Unternehmens angeboten werden?

☐ Aus- und Weiterbildung für technisches Personal

☐ Aus- und Weiterbildung für Servicepersonal

☐ Aus- und Weiterbildung für administrative Mitarbeiter

☐ Andere: ....

☐ Keine

☐ Weiß nicht / Keine Angabe

Das Idealbild des Wiener Computerhändlers der Zukunft

„Wir haben nun schon ausführlich über die zunehmende Dynamik der Branche gesprochen. Zum Abschluss nun noch eine Frage zum Thema welche Unternehmen in der Computerhandelsbranche in Zukunft besonders erfolgreich sein werden."

35. **Wie sieht Ihrer Meinung nach das Idealbild eines erfolgreichen Wiener Computerhändlers der Zukunft aus?** Bitte beschreiben Sie möglichst genau, z.B. Unternehmensart, Unternehmensgröße, angebotene Produkte und Leistungen, Distributionskanäle, Kommunikationsmaßnahmen usw.

....

....

....

....

....

....

Scales

Fragebogenhilfe 1 *(Frage 7)*

1 ---------- 2 ---------- 3 --------- 4 ---------- 5
sehr schlecht   **sehr gut**
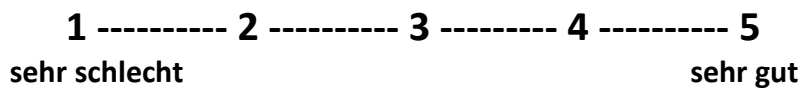
Fragebogenhilfe 2 *(Frage 17)*

1 ---------- 2 ---------- 3 --------- 4 ---------- 5
sehr geringe   **sehr starke**
Konkurrenz   **Konkurrenz**

Fragebogenhilfe 3 *(Frage 21, 22, 28)*

Abnahme   **Zunahme**

|----------|-----------|----------|----------|----------|----------|

-              -   -   +/-   +   +   +

>20%   11-20%   1-10%   1-10%   11-20%   >20%

Fragebogenhilfe 4 *(Frage 22)*

Hardware – Desktop PC

Hardware – Notebook PC

Hardware – Tablets

Hardware – Server / Server-Zubehör

Sonstige Hardware (z.B. Smartphones)

Software

Zubehör

Service – Beratungsleistungen

Service – Hardwareinstallation, Reparatur

Service – Softwareentwicklung, **Programmierung**

Sonstige Services

Sonstiges

Fragebogenhilfe 5 *(Frage 23)*

1 ---------- 2 ---------- 3 --------- 4 ---------- 5

sehr niedrig   **sehr hoch**
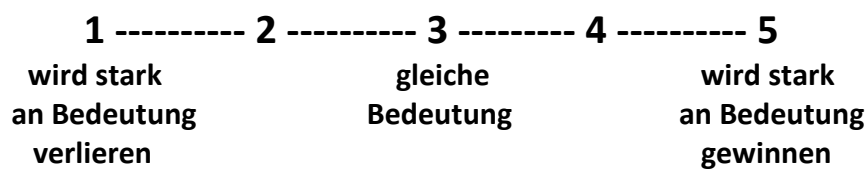
Fragebogenhilfe 6 *(Frage 26)*

- Wesentliche Verbesserung der **Arbeits- und Bestellprozesse**, sowie Logistik

- Wesentliche Maßnahmen zur **Kostenreduktion**

- Wesentliche Investitionen in **organisches Wachstum** (z.B. Marketingaktivitäten)

- Erschließung **neuer Märkte** und **Kundengruppen**

- Verhandlungen mit **Lieferanten** und **Kooperationspartnern**

- Gewinnung **neuer Kunden**

- **Aus- und Weiterbildung** von Mitarbeitern

- **Integration** von **Vertriebskanälen**

- **Management** einzelner **Vertriebskanäle**

- **Kundenbindungsmarketing**

- Aufbau von **Kooperationen**

- Aufbau eines **Online-Shops**

- **CSR** bzw. nachhaltige Unternehmensführung

- Sonstige: ....

Fragebogenhilfe 7 *(Frage 29)*

1 ---------- **2** ---------- **3** --------- **4** ---------- **5**

wird stark an Bedeutung verlieren	gleiche Bedeutung	wird stark an Bedeutung gewinnen

---

Fragebogenhilfe 8 *(Frage 30)*

1 ---------- **2** ---------- **3** --------- **4** ---------- **5**

sehr geringe Bedeutung		sehr hohe Bedeutung