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PERFORMANCE IN DIGITAL MARKETING

TRENDS IN SEARCH ENGINE MARKETING

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Analysis of status quo and trends in search engine marketing

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List of Abbreviations

AOL	America OnLine
ASO	App Store Optimization
DMOZ	Directory Mozilla
EPC	Electronic Product Code
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
IDs	Identifiers
iOS	Apple's Operating System
IoT	Internet of Things
IP	Internet Protocol
KPI	Key Performance Indicator
n.d.	No date
NSA	National Security Agency
REST	Representational State Transfer
RFID	Radio Frequency Identification
SEM	Search Engine Marketing
SEO	Search Engine Optimization
SERP	Search Engine Results Page
SIoT	Social Internet of Things
SSL	Secure Sockets Layer
URIs	Uniform Resource Identifiers
URL	Uniform Resource Locator
WoT	Web of Things
XML	Extensible Markup Language

1. Introduction

Due to the exponential growth of the internet, search engines have developed to the most commonly used web application. Especially, prior to purchasing decisions they play an increasingly important role, for businesses as well as for private households, to investigate in a targeted manner for specific products and services (Maaß et al. 2009). The companies' success, in particular of online retailers, often depends on a good ranking at the search engine results page (SERP) which in turn requires a search engine optimized website (Düweke and Rabsch 2012). However, technology is changing fast and websites need to be adapted accordingly in an optimization process to be able to keep pace with the rapid development. Thus, the issue Search Engine Optimization (SEO) plays an important role in the digital world regarding online activities. The present paper focuses on this topic by performing an analysis of the status quo and the arising trends in Search Engine Marketing (SEM). Initially, the research question and the methodological approach are presented, followed by the fundamentals of search engines. More specifically there are included the history, market side and technical background of search engines to provide an overview of their development and relevance for marketers as well as search engine marketing agencies which often run the optimization process for companies. In chapter three, an overview of the identified trends is given and their importance for SEO agencies in the future are pointed out. Finally, recommendations are made for the online marketing agency xpose360 and the results of the analysis are summarized.

1.1 Research question

Firstly, the authors examine which trends regarding SEO may emerge in consequence of the continuous technological development. Secondly, it is investigated how the search will change due to the new trends. Ultimately, the impacts of these trends on search engine agencies are pointed out.

1.2 Methodological approach

Three different approaches were chosen to investigate the fundamentals and trends in SEO. First of all, to gain some expert knowledge a literature review was conducted. Therefore, the following keywords were identified to search for relevant articles.

Table 1: Overview of used keywords and respective areas

Areas	Keywords
Search Engine Optimization	Future in search engine, trends in search engine, development search engine, research search engine, technology trend, SEO trends, search engine marketing, web searching, SEO history, search engine market, search engine history, search engine development, marketing agencies, online advertising
Big Data	Big Data, Big Data development, Big Data SEO, Big Data levels, Big Data amount, Big Data definition, Big Data Google
Privacy	Privacy, privacy search engine trend, data protection, confidential user data, Privacy Paradox, alternative search engines, business model
Place of Search	Place of Search, Place of Search SEO, Place of Search trends, Place of Search development, Alternative Place of Search, Facebook as Place of Search, Twitter as Place of Search, Social media platform Place of Search
Mobile	Mobile, mobile search, mobile versus desktop, responsive design, mobile-friendliness, mobile first, app indexing
Voice	Voice search, voice respond, voice recognition
Wearables	Wearables, Wearables trends, Wearables SEO, Wearables data, Wearables patents
Internet of Things	Internet of Things

Source: Own depiction.

On basis of these keywords the following sources were used to receive appropriate information. Ebsco, Web of Science, Google, Google Scholar, European Patent Office, Google Patents, LexisNexis, Online marketing magazines and the Libraries of the University of Augsburg and the University of Applied Sciences Augsburg. All in all, 233 journals/books and articles which were identified and considered important, were used.

Table 2: Overview of used journals and articles

Topic	Journals/ Books	Articles (online)	Total
Search Engine Optimization	2	13	15
Big Data	10	22	32
Privacy	3	14	17
Place of Search	6	20	26
Mobile	2	19	21
Voice	4	28	32
Wearables	10	23	33
Internet of Things	22	35	57
Total	**59**	**174**	**233**

Source: Own depiction.

Secondly, in addition to the literature review an online survey was carried out. Based on a seven point Likert scale (1 = no influence, 7 = very high influence) online experts were asked about their perception of relevance of the topics Big Data, Privacy, Place of Search, Mobile, Voice, Wearables and Internet of Things for the future of SEO. Additionally, they had to evaluate the time frame for the expected relevance of each topic based on a five point Likert scale (<5 years, 5-10 years, 10-15 years, 15-20 years, >20 years). Overall, 44 complete surveys could be collected with a response rate of 44%. The survey design is attached in appendices 1 – 9 and results can be seen in appendices 10 - 11.

Finally, to deepen the knowledge gathered with the literature review and the online survey, SEO experts from 247 SEM, buecher.de and Explido were interviewed.

2. Fundamentals of search engines

This chapter starts with an overview of the history of search engines and continues with information about the search engine market. Finally, the technical aspects of search engines are explained against the background of the search process of the internet users.

2.1 History

At the beginning of the internet era in 1991 (Stern 2015), information search was mainly performed by using web catalogues which contained websites manually sorted into different categories, e.g. the Open Directory Project DMOZ. Information portals, like T-Online, often served as home page which people used to navigate to linked websites. However, the amount of websites was growing fast over time and web catalogues could not be used anymore. The first search engines were developed as they could better structure the amount of web content. By automatically creating an index of websites based on keywords, they provided the search results in the search engine result page in dependence of the relevance of each website determined by different ranking factors. Thus, performing a search became easier and faster and search results were of higher quality. This development made it important for companies to take measures to ensure that their website was listed in the search engine result page and, thus, SEO gained more and more in importance (Düweke and Rabsch 2012). SEO comprises all measures which are taken to ensure that the search engines can easily analyze the company's website so that it is highly ranked in the organic search engine result page and therefore visited by people more often (Gruenderszene n.d.). In 1998, Google was launched and soon evolved into the market leader among the so called algorithmic search engines. It integrated the Page Rank meaning that a web document is ranked higher the more other websites link to it while its competitors, at this time, like Lycos and AltaVista, only evaluated the relevance of the indexed websites with respect to the search query based on the keywords in the documents (Maaß et al. 2009). By this time, marketers used unethical SEO practices called black-hat SEO like keyword stuffing to ensure high rankings. Between 2003 and 2005, search engines started to personalize search results on the basis of user history and to provide local results, e.g. information about store hours or locations, as well as mobile results. In the period from 2006 to 2009, search engines began to integrate engaging content

media in the search results like videos and images in response to changing user behavior, which was the birth of Google's Universal Search. All in all, this era focused more on user intent and usability, also in particular, as Google Suggest was launched to propose search options based on user data. Between 2010 and 2012, content quality became more important as well as the personalization of results (Stern 2015). With the Google Panda update 2011, websites of low quality were penalized while the Google Penguin update 2012 downgraded those with poor quality links (Haynes 2014). Furthermore, the Google Knowledge Graph was launched in 2012 which made it possible to directly display an answer to a search query in the search engine result page (Sullivan 2015). In addition, local search results were improved and better organized in the result page. In response to the growing importance of social media, search engines started to include social content in the search results. Thereupon, marketers began to develop high quality content which users liked to share in order to create backlinks for their website. In the following years, mobile and local search were gaining more and more in importance (Stern 2015). In 2015, Google announced its mobile-friendly-update (sistrix n.d.) and marketers began to focus on content segmentation and content optimization for device and user intent (Stern 2015). Moreover, for better understanding the user intention Google introduced two new algorithms which represent a step towards a semantic oriented search. The first one introduced in 2013 is called Hummingbird, which is an approach towards the understanding of the meaning and semantic relationships of the words used in a search query (Scheuering 2013). The second one is RankBrain which is part of Hummingbird. It is a machine-learning artificial intelligence system that helps to better interpret multi-word or ambiguous queries and conversational language (Wells 2015).

2.2 Market side background

Though having entered the search engine market relatively late in 1998, Google's market share has steadily been growing which is the reason why Google is the dominant search engine worldwide, today. In November 2015, it amounted to around 90%. However, there are also other search engines which play an important role in the international search engine market. Baidu in China and Yandex in Russia, both have the highest market share in the respective country (Düweke and Rabsch 2012). By distinguishing between desktop and mobile, Google's market share was around 66%

worldwide regarding desktop search and around 90% with regard to mobile search, in December 2015 (Statista 2016a). In the European search engine market, Google has a market share of around 93%, followed by its main competitors Bing with 2.5% and Yahoo with 2.1% (Dummer 2015). The distribution is similar in the US market. Concerning desktop search in December 2015, Google is the market leader with a share of 63.8% while Bing has a share of 21.1% and Yahoo of 12.4% (comScore 2016). In terms of mobile search, Google accounts for a share of over 92%, Yahoo around 5% and Bing only 1.7% (StatCounter 2016). Also in Germany, Google is the most used search engine with 90,8%, in January 2016, followed by Bing (6.7%), Yahoo (1,4%), T-Online (0.7%), Ask (0.2%), web.de (0.1%) and others (0.2%) (Web-Stats 2016). Reasons for Google's dominant market role are the high quality of the search results and the high level of popularity. As well as the fact that it is also the market leader with respect to search engine advertising (Maaß et al. 2009) which is the dominant business model of search engines. An appropriate ad is displayed as soon as the user has typed in a search query. Each time the user clicks on the ad the advertiser has to pay. This method allows the advertiser to exactly measure the success of the ad (Lewandowski 2015).

Regarding the online penetration by age groups in Germany, over 90% of the 10-49-year-olds, 78.5% of the 50-59-year-olds and 41.5% of the people older than 60 years are internet users. When considering the thematic key activities of the internet users, around 93% of them aged 14 years and older are using search engines at least occasionally (OVK Online-Report 2015).

These facts demonstrate the high relevance of Search Engine Marketing, especially of Search Engine Optimization, for online marketers. In 2015, around 62% of online advertisers increased the expenses for SEO (Wirtschaft 2016). According to forecasts until 2020, revenues with search engine advertising will still increase in Germany whereas the biggest increase will account for mobile (Statista 2016b). Due to the leading market position, marketers should spend most effort on optimizing their website for Google.

With regard to the online search behavior changes can be observed. Some years ago, people were using single keywords when performing a search. Nowadays, they are more often using two to five keywords, whole sentences and more detailed, connected phrases because they note that the quality of the multi-word search queries improves

(Hey 2014). Concerning the search for product information in all industries, people mainly use the desktop. However, mobile search is increasing, especially in the entertainment, fashion and travel sector (OVK Online-Report 2015). According to an eye tracking study by Google in Germany in 2011, the highest percentage of the internet users (71%) performing a desktop search pays attention to the first three sponsored ads on top of the search engine result page and has a look at them for 2.5 seconds on average. Rich media are the second element users (70%) pay attention for 2.2 seconds while the organic results below are mostly neglected with 21% of internet users looking at them for 0.2 seconds (Google Think Insights 2011). Additionally, with 71.3 % the first search engine result page is the one people mostly consider for searching for information. These facts illustrate the importance of SEO in order to be listed on top of the search engine result page (Petrescu 2014).

2.3 Technical background

Search process

The search process starts with the selection of the search engine. Subsequently, the internet user types in a search query and the search engine automatically makes suggestions for the query which are mostly based on historical popular queries of other internet users. After having had a look at the search engine result page, the user selects an appropriate hit, which is evaluated, afterwards. If the result satisfies the need for information, the search process is finished. Otherwise, the user searches the website containing the relevant document or returns to the search engine result page to select another hit until the result is satisfying (Lewandowski 2015).

Types of queries

Today's search engines provide various options to perform a search. The most common one is using keywords. Further possibilities are the use of Boolean operators, barcodes and spoken search queries. In addition, a search can be performed by uploading a picture in the search engine. Besides information about the motif, other pictures are presented based on similarity with regard to colors and shape. However, this kind of search works only well in terms of popular pictures like those of famous buildings or places. Moreover, a reference document can be used to find further similar documents. All these types of queries are based on an explicit input by the user.

Though, a shift from explicit to implicit input can be observed. In consequence, the search queries are generated automatically by the search engine dependent on the user context on the basis of historical user data. This means that the users do not have to type in keywords anymore by themselves but the search engine will carry out the search process without the users noticing it and will provide them with personalized suggestions (Lewandowski 2015).

Crawling and Indexing

Search engines use a software called crawler to search the web and to create an index of all websites. For this purpose, crawlers follow the links on a website starting with already indexed documents and provide the server of the search engine with the collected data about new or modified websites. Afterwards, the identified links are added to a list of the crawled websites. A copy of each website is stored in a database, the search engine index. It contains all words of a website as well as information about their position (Düweke and Rabsch 2012).

Algorithms and ranking factors

After having typed in a search query, the index is searched for matching websites and the most relevant ones are presented in the search engine result page. The ranking of these websites is based on various algorithms and factors that are continuously optimized. Currently, Google's algorithms are using over 200 factors to determine the result that best satisfies the query (Düweke and Rabsch 2012).

There are six groups of general ranking factors. Firstly, web documents containing the keywords used for the search query or variations of them are considered in the search results. Another criteria is the popularity of the documents which is an indicator for its quality. The popularity is determined by the links between the documents as well as the click behavior of the users. With regard to Google, it is measured by the Google Page Rank algorithm. A web page is ranked higher the more links point at it because it is assumed that its content quality is higher. Furthermore, freshness of documents is taken into account meaning that the latest news and information will be ranked higher if they fit the search query. Further ranking factors are localization and personalization. They ensure that relevant documents based on the location and historical data of the user are preferred in the result page. The last group of general ranking factors are technical ones, e.g. fast loading time of a website and adaptability of the documents

for mobile devices. At the end of the web page evaluation, an overall score is calculated and the page with the highest score ranks on top (Lewandowski 2015).

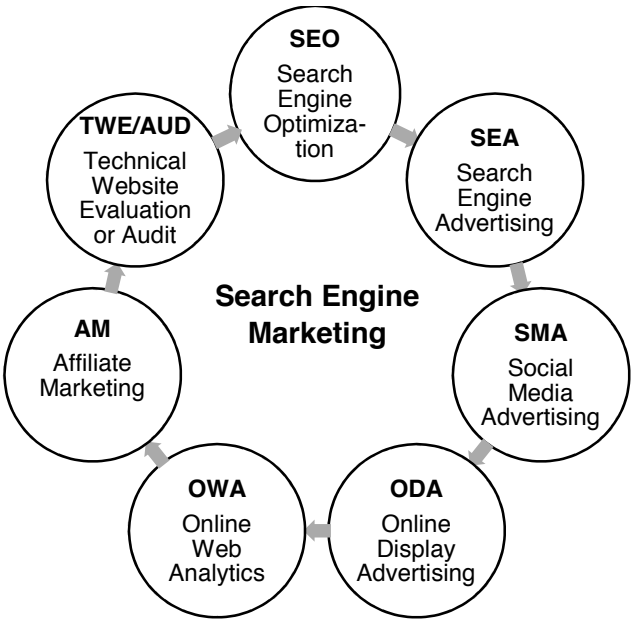
Forms of search results

The search engine result page consists of the organic search results and sponsored ads which are paid to be listed in the search index. The organic results are unpaid and include all documents generated automatically matching the search query (Lewandowski 2015). Besides the mere presentation of a list of documents and texts in the search engine result page, search results can take various alternative forms. They can be presented as videos, images and spoken answers with reference to voice search. Furthermore, there is already an approach to display answers to a query directly in the search engine result page instead of documents. An example is the Google Knowledge Graph which contains aggregated information from different sources, e.g. facts about people or places. Relating to this, the results are based on the connections between things (Google n.d.).

2.4 Search engine marketing agencies

Businesses invest an increasing proportion of their advertising budget in online advertisement. The market volume, that prove current studies, will continue to rise in future (OVK Online-Report 2015, Stieber 2014). At the same time more and more advertisers engage agencies to take charge of their search engine marketing campaigns (Nabout et al. 2011). Below the different remits of online marketing agencies (Search Engine Marketing) are presented:

Graph 1: Overview of remits of search engine marketing agencies



Source: Own depiction (fusionbox 2016, hurra 2016, omedia24 2015, SEOValley 2016, xpose360 2015).

In the narrower sense Search Engine Marketing is understood as measure to increase the presence in search engines. In particular, SEM consists of Search Engine Optimization and of Search Engine Advertising (SEA). However, in the last years the environment in the area of SEM was highly diversified. This includes recent disciplines (e.g. Affiliate Marketing) that complement the classical SEM encompassingly and overlap partially (omedia24 2015). It is important to emphasize that mostly the implementation of individual measures would not be sufficient to be effective but the interaction of many of them (hurra 2016). To sum up, it can be said that although the volume of online advertisement grows, it has to be divided between an increasing number of actors. Hence, online marketing agencies need to differentiate themselves from their competitors and provide their customers real added value with the focus on the customers to be successful (Stieber 2014).

3. Trends in SEM and expected future impact

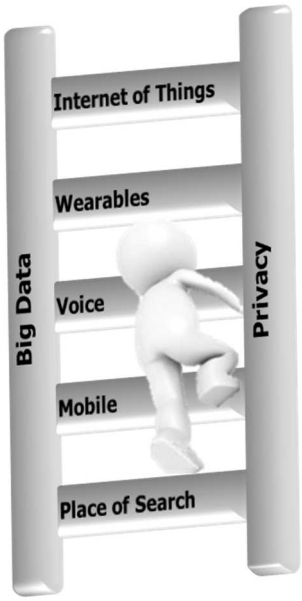
This chapter examines trends in SEM by analyzing the status quo, providing a prospect for further developments and exemplifying potential consequences for SEO.

3.1 Trends overview

The trends are structured based on a trend ladder.

Starting with Big Data and Privacy which are the holms of the ladder, these two topics are considered as basis for the other trends which will always play an important role even if user behavior and technical devices will change over time. Especially Privacy has no direct impact on SEO but is rather seen as a basic condition. Afterwards the rungs of the ladder are explained which can be classified as real trends at least from a technical view. First of all, Place of Search, Mobile and Voice are described which all three play already an important role nowadays. Followed by Wearables and Internet of Things that gain in importance in the future.

Graph 2: Trend ladder



Source: Own depiction / SoSci Survey

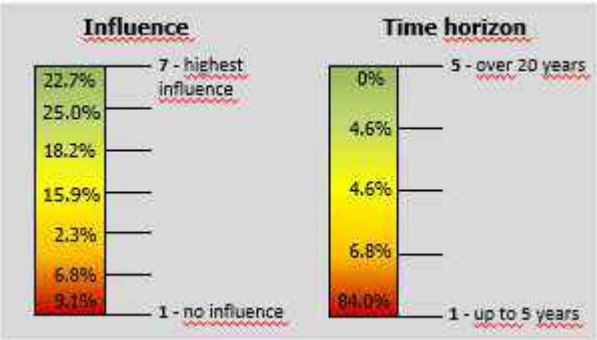
3.2 Big Data

Per definition Big Data is referring to “assets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze” (McKinsey, 2011, p.1) “without giving a restriction in terms of size” (Manovich 2011, p.460). This typically includes the access to new data sources which are developed over time (Forbes 2014). One of these assets are e.g. social media platforms as Facebook. Based on the findings of a recent study (smartinsights 2016) the amount of data generated by individuals using social media platforms is growing constantly. According to TechCrunch (2012), Facebook users generate more than 2.7 billion Likes and 300 million photos per day, while the platform scans about 210 terabytes of data per hour. This trend is likely to continue, as Facebook acquired Instagram in a $ 1 billion transaction in 2012 (Wall Street Journal 2012), now being a platform with more than 400 million users of the photo editing application and 1.6 billion registered Facebook members (CNBC 2012, Statista 2015). Videos are another important data source when considering Big Data, as they are responsible for 64% of total internet traffic (ReelSEO

2014) with an ever growing expected number for the future. This trend is supported by changes in the customer behavior, as internet users are switching to comfortable business models as live-streaming, online video rentals and webcam views which can be consumed on almost every smartphone, notebook or tablet.

Some experts have already altered the term Big Data into huge data (Computerwoche 2015), pointing out the challenge for IT systems and users to process the amount of data. Based on data provided by whiteSEO (2015), the digital universe is expected to grow from 8.6 bn exabytes in 2015 to 40.0 bn exabytes until 2020. Looking at the internet traffic, the entire global internet in 2005 multiplied by 64 equals the global internet traffic in 2019 according to Cisco (2014) implicating a per capita traffic of 18 gigabytes. Furthermore, Big Data enables to "support human decisions" through the automatization of identified search patterns (McKinsey, 2011, p.5). The analysis of huge data sets provides deep insights for organizations to improve their relationship with customers or employees in terms of economic or social matters (Gantz and Reinsel 2012). Regarding SEM, this evolution leads to improved marketing possibilities offering perfectly individualized marketing methods due to the amount of processed data.

Graph 3: Survey results Big Data (Source: Own depiction)



The growing importance has also been supported by a survey conducted in the context of this study. More than 50 percent of the survey participants anticipate a high relevance of Big Data topics for SEM in the future. In addition, about 84% of the participants assume Big Data to gain a rising relevance on SEM in the next five years.

One of the current trends targets large heterogeneous databases. This type of databases including various data types as "blogs, server log data, web application data, historic transaction data, and internet feeds" (Power 2015, p.1) cannot be processed by state-of-the-art keyword search engines therefore opening a new field for current research (Cardoso et al. 2016). This leads to the development of new algorithms as Google RankBrain in order to create machine-learning artificial intelligence systems (Forbes 2015a) being able to process this big amount of data and

identify links between the information in an autonomous way. This goes hand in hand with current developments as extended sourcing from social media platforms. Facebook is not solely used to communicate with the social environment anymore, rather it has advanced to a new search platform (Theverge 2015). Multiple media types as videos, pictures or maps data are becoming more important in the context of alternative key word sources. Especially videos have become more important than pictures for social media platforms for the first time in 2013 (wrightIMC 2015a). Customers are not always looking for information in the old-fashioned way using a search engine as Google, in fact they use the knowledge of Facebook Graph Search which is fed by experiences of their social network (Searchengineland 2013, wrightIMC 2015b). Perfect adjustment to the relevant keywords will deliver a competitive advantage for companies as it provides access to a wide network of personal data from social media, which cannot be captured by search engines.

Main impacts for SEO are especially the necessity to exploit semantic search patterns from social media channels. As described before, Facebook has altered its searching options opening a new field to source additional information about a customer and his intentions. This includes for example higher conversion rates for retailers by integrating social media search channels (Adweek 2015). In addition, SEO agencies should place emphasis on videos. Videos have the highest participation rate of all media types producing high click-through-rates, lower bounce-rates and backlinks with high quality (Shareaholic 2014).This media type should be closely watched in order to identify semantic search patterns of users and to exploit them in the best possible way.

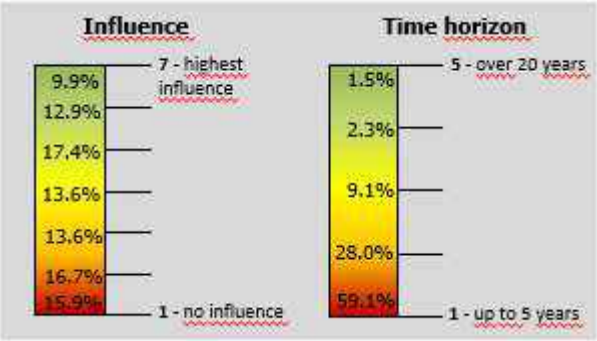
As the amount of data is constantly growing the creation of KPIs in order to establish a successful marketing strategy is crucial. This affects e.g. on-page data, rank data or universal search data as pointed out by searchenginewatch (2014). In parallel, unnecessary data should be identified and excluded as it is very time-consuming to process and analyze it, without delivering additional value (Forbes 2015b). Close collaboration with customers will facilitate this process in order to deliver tailor-made solutions (IBM Big Data & Analytics 2015).

3.3 Privacy

"As SEO grows as an industry, the number of privacy concerns and legal battles around them has increased as well" (Cipp Guide 2011). This statement emphasizes the raising importance of privacy relating to online activities.

Each time people use one of the common search engines (e.g. Google) their search queries are saved. Not only the IP addresses of the users are recorded but also tracking cookies are used to amass the queries, the specific date of the search and the clicked links of the users in order to retain these information in a huge data storage. The sensitive personal data mainly serves for generating user-specific advertising (Startpage 2011, Lewandoswki 2015). In the digital age, complete control over personal data seems to be impossible. Nevertheless, people nowadays reveal more data of their private life on the internet than ever before. At the same time, the possibilities of collecting and processing personalized data have increased enormously due to technical development of the past years (Schwertle 2014). Due to several privacy scandals in recent years the protection of privacy gains in importance. An example of privacy infringement, which was committed by America OnLine (AOL), has occurred in August 2006. AOL collected the search keywords entered by users over a three month-period for research purposes and published the corresponding overview of more than 650.000 users (Marsan 2012).

Graph 4: Survey results Privacy (Source: Own depiction)



Regarding the authors' survey there can be noticed that 23% of the respondents expect Privacy to have a high relevance in the future. Moreover 87% of the experts estimate this trend to become important within the next one or two years.

Some trends regarding Privacy are described in the following: As mentioned before the majority of people reveal their personal data in a very liberal way today often without caring about the consequences. For example, many accept several pages long provisions about the storage and use of data by one mouse click without reading them carefully. Most of them do not even deal with the issue data protection at all (Schwertle 2014). At the same time search engines and thus companies collect all possible data

they can get from the users and save them in their data bases in order to use these data for personalized advertising (Spiekermann 2012). Furthermore, in this context a phenomenon called Privacy Paradox exists that describes the missing context between the attitude to the own Privacy and the actual revealing behavior on the social web. On the one hand, the users perceive the protection of Privacy as very important and indicate to be greatly worried about data security. On the other hand, they rarely behave accordingly and instead share a lot of information about themselves online. This might be due to the fact that most people have gained positive experiences on the internet that in most cases providing details of their private life remains without consequences and is even beneficial. The most common approach to explain the Privacy Paradox is the so-called Privacy Calculus. Thereby it is assumed that the users value the advantages of the data disclosure more highly than the disadvantages of the threat of their Privacy (Seemann 2013, Lutz and Strathoff 2014). Some alternative search engines have appeared in the last years which enable an anonymous web search - unlike the big ones like Google, Bing and Yahoo. One example of an alternative search engine which respects the user's Privacy is ixquick. It is an international meta search engine[1] (based in the Netherlands) with sector leading privacy policies that was established in 1998. It has proven as search engine in the last years which provides good search results and thereby attaches importance to the Privacy of the users. It is the first search engine that deletes personal data, including the IP addresses of the users after 48 hours. Furthermore, a secure and encrypted connection (HTTPS/SSL) is offered as well as a free proxy service for greater anonymity. Ixquick describes itself as the world's most private search engine what can be justified by the fact that it has received the first European Privacy Seal in June 2008 (Unabhängiges Landeszentrum für Datenschutz 2008, Ixquick 2016). Startpage is a project of ixquick with the difference that it uses only Google as basis for its search results. The search engine startpage combines the search results from Google with the privacy settings of ixquick. Startpage has a similar design like ixquick and includes the same privacy features (Publish & Comment 2012, Startpage 2011). Considering the legal framework there can be noticed an increasing awareness of the problem of

[1] "A meta search engine is a type of search engine that gives results based on a combination of results from other search engine databases. It specializes in concatenating databases from a variety of search engines and linking search results to relevant sources" (Techopedia 2016).

data protection in networks. Therefore, a new uniform data protection directive has been decided in December 2015 and will enter into force in the European Union in 2018. Therein, citizens should be given back control over their personal data and companies should be offered a standardized and simplified regulatory environment. The objective of this new regulation is to adapt and update the legal standards of the member states to ensure a uniform data protection throughout the EU (Europäische Kommission 2016).

The implications for SEO resulting from these trends are the following: Personal user data should be protected in a better way. It is about much more than some links or postings, it is about the fundamental rights of everyone (Bayer 2015). Customers should be sensitized to care more about their personal data. With the new data protection reform there will be a legal framework to support this. It is important that companies which use data of their customers get a need of declaration of consent from them. This confidential information should not be passed to third parties (Europäisches Verbraucherzentrum 2013). As mentioned before, Privacy is a very important topic in the growing digital age which enables new business opportunities and innovation. Also influenced by the recent NSA revelations, the market demand for and the success of Privacy in itself as a business model is risen. Anonymous search engines, encryption tools and services as well as start-ups regarding the issue privacy gain in importance (Hasselbalch 2013).

Finally, it should be mentioned that the focus is often put on Privacy threats and less on Privacy benefits. Using search engines or doing online activities, customers obviously need to disclose personal data but in return they receive more personalized information which is tailored to their individual search query. Therefore, people have to decide for themselves whether and in which extent they are willing to accept less Privacy in exchange for greater convenience (Wittes and Liu 2015).

3.4 Place of Search

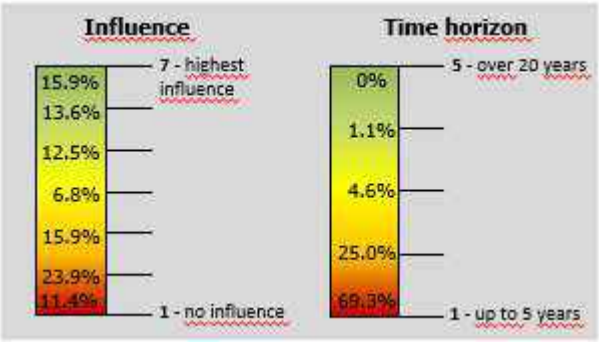
The term “Place of Search” can be defined in two different ways. Firstly, it could be aimed at the physical place of search, including a variety of possible mainly prompted by all kinds of mobile devices offering new options for users. Secondly, this term could be defined as the alteration of technical places of search, i.e. the change from using traditional search engines towards alternative platforms as social media platforms like

Facebook. Although both possibilities offer a wide spectrum of explanations, this study will mainly focus on the second definition and present alternative searching places in the context of search engines. The status quo recognizes a shift away from traditional desktop search, e.g. via Google and includes various additional sources for the search process (CultofAndroid 2016). This is a game changer for the SEM industry as a pure focus on Google will lead to a competitive disadvantage for both, companies and SEO agencies, in the future. One of the main influencing factors is e.g. Facebook's launch of a new search feature in late 2015 and the indexation of more than 2 trillion posts on its platform in order to analyze data and improve its market position in the searching segment (CNBC 2015). Although already being a big step in the evolution of the search engine business, this amount is expected to grow significantly in the future as almost 5 billion pieces of content are shared daily on Facebook (Zephoria 2015) and in addition 300 Petabytes of data are stored on their servers (Expandedramblings 2016). In the last years, Facebook has continuously grown the number of the search queries reaching a preliminary peak in July 2015 with 1.5 billion queries per day (Facebook 2015), hence, using its outstanding competitive position and providing an equivalent search option to Google. Still, Facebook is not the only business rival in the field of social media searching. Competitors like LinkedIn or Twitter also process massive amounts of data and steadily improve the search experience for their users.

Social media SEO is crucial for all big players as it provides access to additional sources of data (Socialmediaexaminer 2014). It also affects the development of passive SEO through social media platforms. Being of high renown for quality content on a platform leads to an increased use by people as the search platform of their choice. This also plays into the debate between active vs. passive intent of search queries, as a platform with an ideal combination of both levels will create an advantage compared to its competitors. Whilst active intent is targeting to be described explicitly by the search query, passive intent is focusing on the implicit description through the search query (Blindfiveyearold 2015). In other words, the explicit level will deliver a product list if people are looking for motorcycles via a search engine, whilst the implicit level will deliver maps for motorcycle tours or even the closest service mechanic for a specific type of motorcycle. The implicit level delivers high value for the consumer as this information is generated unexpectedly from his point of view. This is exactly the point Facebook is currently targeting with the Facebook Graph Search as it goes far beyond the first intention of a customer's search query. Although several features have

been removed since the launch in 2013, Facebook still offers this service and works quietly on its development (Systematischkaffeetrinken 2015). The main advantage and reason for continuation lies in the quick responsiveness of social media platforms (Orbitmedia 2014). It can take a long time for people searching the internet for a specific product as there are theoretically no boundaries regarding the amount of data and even building up of reputation for a specific product. In contrast, social media platforms are based on direct experiences of users and even the social network of a user. The level of trust is significantly higher and viral marketing using social media (Mangold, Faulds 2009) provides an excellent opportunity to strongly push the awareness level for a specific topic. Establishing inter-connections between traditional search engines and social media platforms will become an important topic in the future in order to create maximized benefit for the customer (Morris, Teevan, Panovich 2010, Gillin 2009).

Graph 5: Survey results Place of Search (Source: Own depiction)



Experts are currently discordant about the expected influence of Place of Search on SEM in the future. Whilst 50% estimate a high influence of this topic in the future, almost 35% of the survey participants expect a contrary evolution. Regarding the time horizon of the relevance of Place of Search, 70% of the experts agree on a short-term horizon, i.e. within the next five years Place of Search will be strongly considered by SEO agencies and other affected industries.

Current trends involve growing concerns regarding privacy issues (Szongott, Henne and von Voigt 2012, Ellison 2007). The recommended combination of data derived from search engine algorithms and large data bases of social media platforms opens deep insights for operators of search engines into personal data. People are at risk to lose control of their own data as they are partially unconsciously providing access to their social media accounts when not properly reading the terms of usage. Another emerging trend regarding Place of Search is created by modern technical development. The chapter Internet of Things will describe possibilities more precisely. Main effect on this topic is again the unconscious usage of search engines through

home devices which might be connected to the home network of a user. Through the integration of products like the Amazon Dash button (Amazon 2016, Recode 2015) consumers are unconsciously providing valuable marketing data which is consequently processed by the device developers, leading to automated consumerism (Wealthdaily 2015). Although benefiting from an unlimited information exchange it is very likely that consumers' willingness to provide this deep insight into personal data over time and that privacy issues will come up at this level.

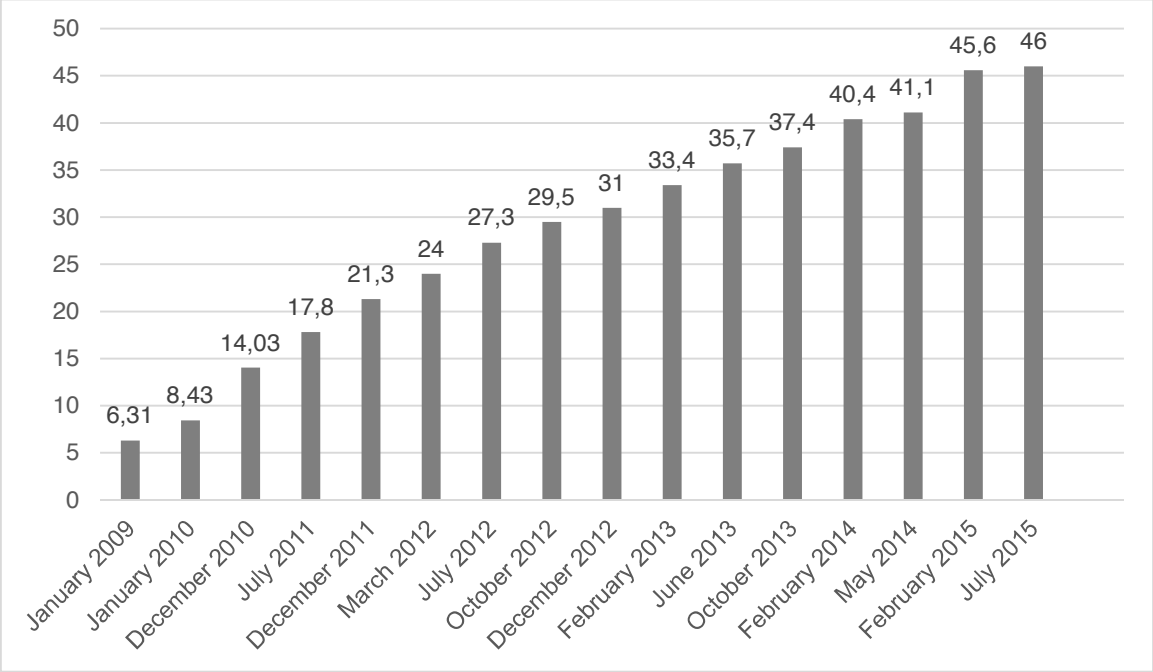
Meaningful impacts on SEO include the usage of metrics in order to analyze all possible sources as e.g. Facebook or Twitter (Unionmetrics 2015). Metrics as CTR might be a solution easy to applicate, however this tool should be individualized per customer. Every company should be given access to their own set of aligned metrics to maximize utility. Moreover, SEO agencies have the possibilities to offer courses for companies, demonstrating how to perfectly use the wide possibilities of both Twitter and Facebook search (Zapier 2014). Perfect adjustment to clients' needs causes high customer satisfaction which can be used for recurring mandates.

Thorough analysis of relevant academic work has shown that Twitter users are using this platform to monitor search results with the same keywords, whilst they use alterations of the keywords on different platforms (Google, Facebook, etc.) to broaden their knowledge (Teevan, Ramage, Morris 2011). This clearly demonstrates the inter-connectedness between all possible Places of Search and the main influence on the business model of SEO agencies. Instead of specializing on a core competence, companies should be offered a holistic package covering as many sources as possible. This also implicates the necessity to search for new, trending platforms in order to gain a competitive advantage. Being the first agency working with a new search engine opens the door to make use of a first mover advantage, which can be further developed.

3.5 Mobile

In the last years have been observed some changes in the users' search behavior. In May 2015, Google confirmed that mobile search queries have overtaken desktop queries in 10 countries which means that more people nowadays search on mobile devices than on computers (Sterling 2015). The number of smartphone users in Germany has been growing continuously for years which is illustrated on the next page.

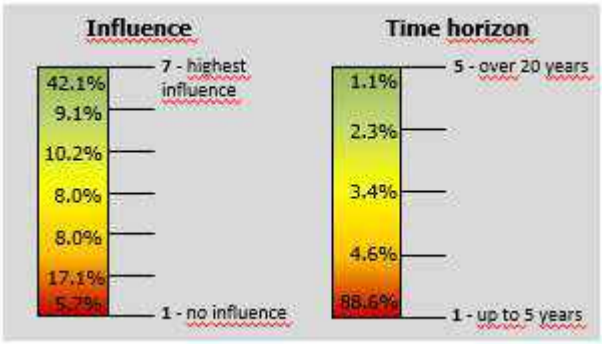
Graph 6: Number of smartphone users in Germany in the years 2009 - 2015



Source: Based on Statista (2016c)

Therein can be seen that 46 million of people possessed and used a smartphone in Germany in July 2015 (Statista 2016c).

Graph 7: Survey results Mobile (Source: Own depiction)

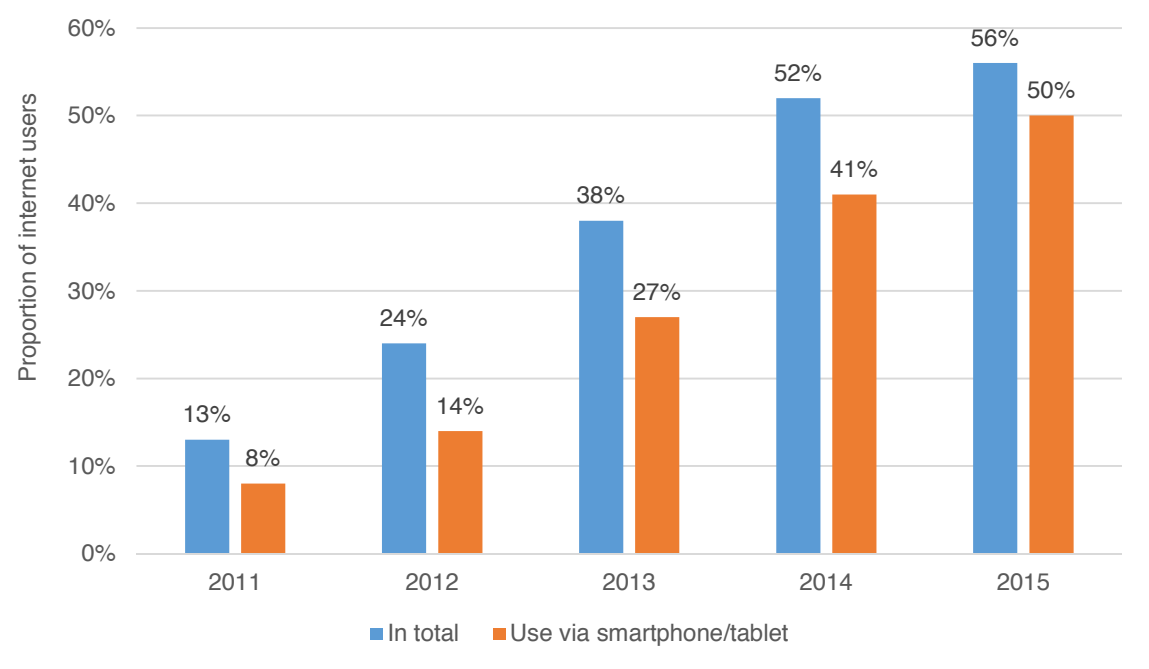


The survey results of the conducted study show that over half of the interviewed experts consider Mobile on average as a very influencing trend which seems to become relevant within the next one or two years – indicated by almost 94% of the participants.

The trends that arise from Mobile are presented in the following: The first one is the responsive design which means that the layout and content of a website adapts based on the size of the screen it is displayed. It includes “form follows function” (wendweb 2016) that is at the responsive web design function, design and content follow the particular display resolution of the used desktop, tablet or smartphone. The layout of a web page is created that flexible that it offers a constant ease of use and that the content can be understood entirely and quickly from the visitor (ibid.). Another trend that needs to be taken into consideration is mobile-friendliness. Since 21 April 2015,

mobile-friendliness of a website is considered as further ranking signal at Google. Mobile-friendly refers to the usability of a website for smartphones. If the content of a website is not mobile-friendly that is not optimized for the access via mobile devices they will be disadvantaged and ranked lower at the search via a smartphone. Moreover, e.g. Google points out the mobile-friendliness of an URL on the Search Engine Results Pages and alerts the mobile searching user about contents that are not optimized (sistrix n.d.). A further trend relating to Mobile is mobile first. This includes a concept where the optimized version for mobile end devices (smallest screen resolution) is developed first and then by adding successive expansions appropriately adapted for the desktop version. The conception of a website is limited to the rudimentary and essential elements. Only the absolute necessary is programmed and installed to achieve maximal functionality on all end devices Thereby, the strategy mobile first follows the trend that more and more users surf the internet with the smartphone or tablet (OnPageWiki 2016) which is depicted in the following.

Graph 8: Mobile internet usage in Germany in the years 2011 - 2015



Source: Based on Statista (2016d)

Currently 56% of the German population uses mobile internet. Most of them, namely 50% of the population, goes online with their smartphone or tablet (Statista 2016d). Moreover, mobile search focuses on local search. The importance of local search queries on mobile end devices is with 91% utilization rate almost up to web search about general information which amounts to 97% utilization rate. 9 out of 10 people

use their smartphone regularly for local search queries (Socha 2015, Google study 2014). Every third mobile search query has a local reference and about every sixth searches daily for local information (Eckstein and Halbach 2012). Nowadays, information search about local products and services takes more often place via smartphones rather than on desktops (Local Serach Association 2015). This is due to the fact that consumers carry their smartphone always with them and use it for navigation in the offline world (Eckstein and Halbach 2012). Mobile users who search for local offers prefer to find them in their direct environment. Another study conducted by Google in partnership with Nielsen (2013) shows that not less than 69% of the respondents want to find a business within a radius of 8 km. 10% even expect a distance of less than 2 km (Misch 2013). Jones et al. (2008) investigated an US-study on this issue as well in which radius localized search results should be. They found that the desired radius is depending on the location of the user and differs significantly according to the search query. Users in an extensive US-state are e.g. rather willing to cover longer distances than users in densely populated areas. The local search results therefore have to be adapted appropriately (Lewandowski 2015, Jones et al. 2008). The last one that should be mentioned in this context are apps. Due to the huge amount of existing apps the objective is to appear as possible at the top positions of the search results. This can be achieved by App Store Optimization (ASO) which includes SEO on app-level (Even 2014). Regarding this, there is a feature from Google called App Indexing. It refers to a “system that allows people to click from listings in Google’s search results into apps on their Android and iOS smartphones and tablets“ (Searchengineland 2016). This means search results on mobile devices do not only take web pages into account but also appropriate content from apps (Patel 2015).

It is important to point out that through the diversity of the devices the term mobile end device (and with that also mobile search) loses its differentiation. The characteristics that mobile end devices distinguish so far from PCs are apart from mobility the greatly different screen sizes, the various user interfaces and the wealth of context information which are recorded on mobile devices. However, there are approaches between the device categories. For instance, in the meantime, many laptops are operable via touch screen or tablets achieve screen sizes or resolutions as they were reserved to (smaller) laptops up to now (Lewandowski 2015).

The impacts on SEO that arise from these trends regarding Mobile are presented in the following: Companies need to ensure mobile-friendly or responsive websites. Who cannot be found at the search engines or does not offer a user-friendly website not only loses new customers but can also be forgotten quickly by repeat customers (Misch 2013). The strengthened use of the internet via mobile end devices forces companies to respond to the needs of mobile users. Thus, business models should be adapted to the changed user behavior that means services and content need to be displayed more aimed through the corresponding channel (TWT 2014). Providers who succeed in providing information that are easy and fast to retrieve, can therefore gain a competitive advantage (Eckstein and Halbach 2012). Mobile devices are well established as integral part of the purchase process and are classified as one of the biggest growth areas with huge potential. Consequently, it is important to integrate Mobile in the business strategy in order to benefit from the rapid increasing demand (Absatzwirtschaft 2015, Velev 2015). Companies should provide optimized products and services with a local focus in order to satisfy customers because most mobile searches have a local reference (Schindler 2014).

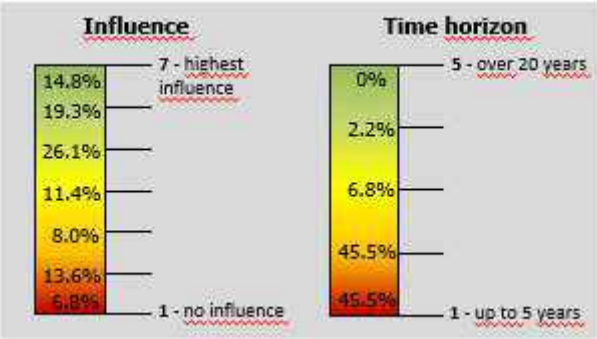
The implications are obvious: Companies must be able to reach their target groups through mobile search and should provide a satisfying experience via Mobile.

3.6 Voice

Most people think that voice search is a new technology, but already in 1976 Raj Reddy was leading a group of researchers to exploit the idea of speech recognition software. Since then, basic learning and decoding algorithm have not changed much, even many improvements in the algorithm have been made. The establishment of the statistically machine-learning framework, the massive amount of training data available and the availability and efficiency of computer infrastructure were the driving factors to enhance speech recognition. This developments built the baseline of nowadays speech recognition tools like OK Google, Apple Siri or Microsoft Cortana (Huang et al. 2014). When activating a speech recognition software, every word the user says is recorded and sent to an extern server where the Voice is translated into a text file. Afterwards, the server sends a text file containing the necessary answer or the command to perform a task back to the device, which in turn communicates the answer to the user via text or voice respond. Through this process it is not just possible to perform voice

search but also to create detailed user profiles which affect the topic privacy. For example, Android devices send the voice queries to an extern Google server. Additionally, Google saves the language, country and the spoken as well as the recognized text with every voice query. Beyond that people using an iOS device agree that Apple saves data like the name of the speaker, the names and relationships of the contacts and even the titles of the music library. On the contrary, Microsoft uses random IDs attached to the devices to prevent that users can be identified (DIVSI n.y.).

Graph 9: Survey results Voice (Source: Own depiction)



Voice search is already well established in our society and the survey results show that 34% of the experts expect voice search to have a high influence on SEO. Also 45% think that voice search will become relevant within the next five years.

In future, more and more queries will come from voice input and Google will increasingly satisfy those voice queries via direct answers. Direct answers are also called rich answers because they directly respond to the users query instead of delivering an assortment of links to other websites. Eric Enge, CEO of Stone Temple Consulting, evaluated 850,000 search queries in 2015 and found out that 19.5% were responded via direct answer. If it is now considered that just two years ago Google did not provide that service at all, it can be imagined which role direct answers and consequently voice search will play in near future. Moreover, in 2014, already 41 % of adults and 55% of teens used voice search at least once a day (Martin 2015). At that, Google was able to decrease its error rate to 8% compared to 23% in 2013 (GoogleWatchBlog 2015b).

We already faced strong developments and changes in voice recognition software and it will continue. With the introduction of Android M Google is able to conduct counter questions with its new Voice Access API and thus is able to communicate with the user. In the past, the user placed a voice query and the device executed it, assumed all necessary information was given by the user. With the new Voice Access API Google can handle the lack of information by placing a counter question to gather the missing information. For example, if a user gives the command to turn on the heating

the search engine will be able to place the counter question in which room and to which temperature the heating should be turned on (GoogleWatchBlog 2015a). Beside the technical changes, we will also face a change in user behavior. Silvia Lovato and Anne Marie Piper conducted a survey to find out how young children interact with voice systems. According to the parents, 31 out of 118 children (age <7 years) have already used speech input. Voice recognition software enables children to interact with a PC even if they cannot write. Thus, a new generation is growing where voice interaction is a common task and no reservations exist (Lovato and Piper 2015). This young generation will not be used to search in a keyword oriented way like the older generation does. They are used to search in a conversational way and will apply this pattern also to desktop devices. Therefore, in future there will be probably noted a change in desktop based searches from keyword oriented to conversational search. Additionally, the new generation of searchers will be used to get a direct answer instead of a collection of website links. Thus, a change in how search engines respond to the user may occur. Especially for mobile devices like mobile phones or Wearables, voice respond will increase dramatically. People using these devices are mostly on the way and are looking for some fast information. The small screens make it difficult and inconvenient to receive and analyze textual answers. Therefore, voice respond and other respond types like respond via vibration, for example to signal left or right, can play an important role and increase the user experience. Furthermore, it may become common for devices with small screens to hand over the query to another device. One area of application could be the navigation while cycling. It is conceivable that cyclers use their mobile phone to search for the way to a special location which then in turn hands over the query to the smartwatch which guides the way to the location via vibration to signal to turn left or right (Anthony 2015).

Even if we faced some great developments in voice search, right now the industry faces some main challenges which need to be overcome for the next generation of voice recognition software. Firstly, the amount of data available through voice recording is enormous. Unfortunately, because of its cost-intensity just a very small fraction of the amount of material available gets labeled to improve the system. Thus, new and more cost-efficient ways of labeling the data must be developed. Secondly, further developments implicitly depend on continued advances in computational capabilities. Because of the ever increased amount of training data it would take weeks to train new voice recognition systems. Hence, industry development currently focuses

on developing microprocessors with multiple cores to enhance the computing capacity. Thirdly, one of the major challenges for researchers seems to be the robustness of speech recognition. Already small deviations caused by room reverberation, background noise, different speaker characteristics (pronunciation, dialect, etc.) or the channel through which the speech is acquired (cellular, Bluetooth, etc.) can lead to drastic degradation of system performance. Consequently, we need new breakthroughs to enhance the accurate detection of the Voice (Huang et al. 2014).

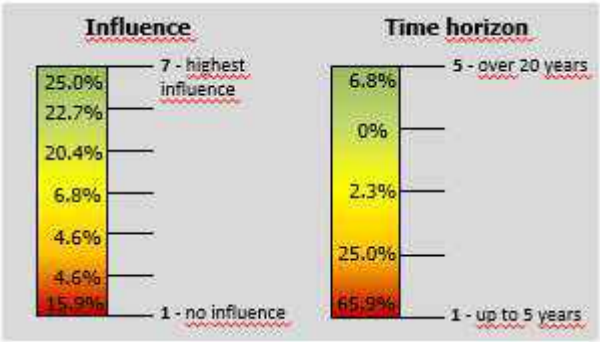
For SEO, it is very important to be aware of the topic voice search. Voice search can lead to higher traffic on websites, especially when Google's direct answer did not satisfy the users' needs completely. Websites chosen by direct answers could be seen as authoritative sources and thus users would be more likely to visit the website via a browser if the search respond did not satisfy their question. To increase the chance of being listed in a direct answer SEO experts need to react to the changes in user behavior. Due to the change from a keyword oriented search to a more conversational oriented search SEOs need to generate content which is clearly structured and addresses the questions of the searcher immediately in clear and simple sentences (Martin 2015). Furthermore, through increasing interactions between devices, like the handover of queries or tasks, the content provided needs to be device independent because it may take on a new layout (Anthony 2015).

3.7 Wearables

Wearable devices comprise all products being able to produce data and more importantly being portable for the consumer, especially on the body (Webopedia 2016). Main characteristics of this product class include the feature to establish a connection to the internet, in order to exchange data between the device and the World Wide Web or smaller, personal networks. This encompasses a wide variety of possible products, amongst others smartphones, smartwatches or devices like Google Glass (Investopedia 2016, Techradar 2015, Google 2014). The status quo points out the rising importance of this device group as the total sales number grew from 0 to 75 million sold units p.a. from 2010 to 2015 (Brandsynario 2015, CCSinsight 2014, CCSinsight 2015). Smartphones and wristbands made up to 90% of total sales in respective years. This also represents the current main use of these devices, as tracking services and smartphone notification are the most important features at the

moment. The development of new devices is not about to slow down as more than 40.000 patents on wearable devices have been registered in the last five years (Stadt Bremerhaven 2014). Especially, big players as Samsung and Apple keep on searching for new possible products, together being responsible for 6% of all patent applications in this field (Bruceclay 2015**,** Forbes 2015c). Apple, for instance, is constantly looking for innovative and groundbreaking products currently working on a new wearable device being worn as a ring (CNBC 2015a).

Graph 10: Survey results Wearables (Source: Own depiction)



The expected importance of wearable devices is widely supported by the majority of the survey participants which was conducted in the context of this study. More than 67% of the survey participants predict a high relevance of wearable devices for SEM in the future. They also anticipate this topic to become important in the near future as 66% of the participants name a time horizon of up to five years and 91% of participants estimate Wearables to become highly relevant within the next ten years.

Wearables are anticipated to be accepted as a fully independent device being part of the daily life. They seem to emerge from the shadow of being a pure notification device, mainly being forced by the positive development of products like smartwatches from Apple or Samsung (CNBC 2015b). Various companies and data analysts have identified the big potential of data provided by wearable devices, as they are worn close to the body of the user and therefore delivering accurate information on the person, which cannot be produced by other devices as desktop computers (Quartz 2015, The New York Times 2016). This is fostered by various sources as German health insurances subsidizing the acquisition of smartwatches in order to get access to precious health data from their clients (Spiegel Online 2015, Wirtschaftswoche 2015).

Wearables will also develop a stronger connection to social media platforms in the coming years (Hootsuite 2014) and even create their own platforms (Socialmediatoday 2014). One possibility can be derived from micro interactions as they are the best possibility due to the screen size restriction of most wearable devices (DMA 2015, Sproutsocial 2015), e.g. the usage of Likes, Stars or tweets. The exploitation of

additional levels, e.g. the emotional level, can be transferred by Wearables in an optimized way, providing a new source for data analysis especially for SEO agencies (Jebbit 2015). This information might also be used for the anticipation of user desires based on data sourced from the wearable device. A development in this direction is supported by further strong sales growth. Various sources anticipate the wearables segment to double its sales until 2018, reaching numbers of up to 180 million sold units per year (CCSinsight 2015, Strategyanalytics 2014).

Wearables are perfectly adjusted to a fast and easy use, often in a single handed mode (Speir et al. 2014), enabling a prompt utilization and interaction. This benefit is widely used in the industry, especially in the production sector. Several famous German companies use Wearables with augmented reality features in order to increase the productivity of their employees (Computerwoche 2014, Virtual Reality Magazin 2014). The use of wearable devices, particularly in the inter-company context, might lead to a competitive advantage. This advantage needs to be fully utilized through data analysis for an optimization of the entire organization.

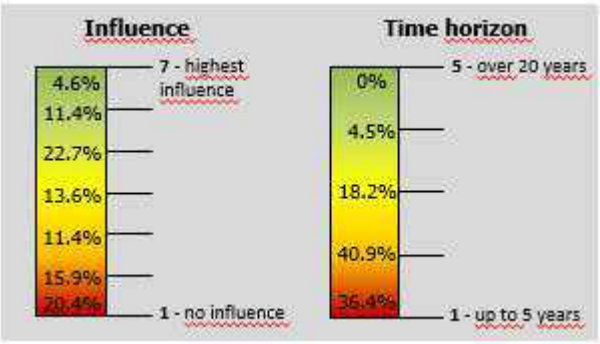
The SEO industry is mainly affected by the integration and analysis of additional user behavior data, e.g. personal data from Wearables which cannot be produced by other devices. The consideration of emotional level data strongly changes searching behavior of customers. This topic strongly correlates with the Big Data recommendations, trying to create a holistic approach in order to capture all necessary data to provide an optimized result for customers. KPI metrics are another field to be implemented as the participation rate from wearable devices is about to grow in double-digit numbers for the upcoming years. Main benefits from Wearables also include the possibility to create contextually relevant marketing strategies, especially in the context of location, feelings and special situations. This targets e.g. devices like beacons, which have been introduced by almost all relevant and big companies (Business Insider, 2014), although there is still plenty of potential available in this area. Considering smartwatches in particular, SEO agencies might benefit from the development to a mobile search dialogue between the user and the device. This offers additional possibilities to further enhance the value of these devices, as they are “the” perfect tool to get information on contextually relevant marketing in order to get access to new, individualized keywords. Through the upcoming of social media platforms strongly using the possibilities of Wearables, this effect will be further developed.

3.8 Internet of Things

The term Internet of Things (IoT) describes the extension of the internet from connecting end user devices with the internet, to inter-connecting physical devices or objects, also called smart objects, which are able to communicate with end users or with each other to fulfill a common goal. It was first introduced by Kevin Ashton in 1998 (Bandyopadhyay and Sen 2011) and one of the first approaches was the electronic product code system (EPC). The EPC connects physical objects through a radio-frequency identification (RFID) transponder and is nowadays often used in logistics (Ning and Wang 2011).

IoT can be examined from four different perspectives. From a conceptual perspective, the IoT should be identifiable, able to communicate and to interact with each other, among themselves or with end users as well as being able to build networks with inter-connected objects. Secondly, from a system perspective, the IoT can be described as a highly dynamic network of a large number of smart objects which produce and consume data with the quest of automaticity and self-management. Thirdly, from a service perspective the challenge is to integrate the information, resources and functions provided by smart objects into service. This requires the development of a standardized representation of smart objects in the digital domain in order to overcome the heterogeneity of devices and resources. And fourthly, from a user point of view, the IoT will provide an always available service. The smart objects analyze the users' environment and are thus able to recognize and identify the users' specific needs and demands (Miorandi et al. 2012).

Graph 11: Survey results Internet of Things (Source: Own depiction)



The survey results exhibit that only 16% of the experts expect IoT to have a high influence on SEO in the future. And only 36% think that IoT will get relevant for SEO during the next five years. These results indicate that the experts are operational orientated, focusing on a time frame up to ten years when talking about IoT. In contrast, the literature review as well as the expert interviews indicate that IoT will be one of the big topics in remote future.

Currently, changes are observable where common objects become inter-connected and smart. With up to 100 billion things expected to be connected to the internet by 2020 the way of how IoT influences our daily life will change dramatically (Feki et al. 2013). The Internet of Things is transforming to the Web of Things (WoT). Thereby, smart objects are adapting technologies which were commonly used by traditional web content. Small web servers are integrated into smart objects and the representational state transfer (REST) architectural style is applied to the physical world. REST describes the architectural style of the Web, implemented by uniform resource identifiers (URIs), hypertext transfer protocol (HTTP), hypertext markup language (HTML) and extensible markup language (XML), thus smart objects are fully integrated in the Web. As a result, smart objects use the Web not only to communicate but also to represent themselves, which in turn allows the end user to interact with them by web browser and explore the full potential of smart objects. The Web itself is seen as a decentralized information system to expose new services and applications, provided directly or indirectly by smart objects. For example, generated real-time data from smart objects can be displayed on web pages, the data of the objects can be indexed like web pages and objects itself can be googled and their URIs sent to friends via email. Moreover, the physical smart objects can become active by requesting or providing data without a direct command of a user (Guinard et al. 2011). The transformation takes already place. For example, since few years car manufactures started to develop connected cars (smart cars) which goes beyond just connecting the drivers' smartphone with the car. Connected cars can transmit real-time data to the internet, which in turn can be analyzed and used by other road users. Thus, drivers can receive messages like upcoming traffic jams or can get warned of upcoming dangers (Bender n.d.).

But the research community's vision goes beyond the Web of Things, to the Social Internet of Things (SIoT), by integrating social networking concepts into IoT solutions. The SIoT relies on direct interactions among objects which are friends and will lead to a new generation of social objects. These social objects can communicate with other objects autonomously, are able to crawl the IoT to discover new services and information and provide services and information to other social objects, all with respect to the owners. These networks are different to human social networks were people share experiences and objects. The SIoT network is based on relationships among objects which share information to improve the service offered to the users.

Hence, SIoT should improve the functionality of IoT by objects discovering the services of other objects, the ability of objects to bundle their services to provide an added service (added value) to the user and by evaluating the trustworthiness of objects and information. In recent years, there have been several attempts to integrate the IoT in a social networking framework like Toyota Friend, Nike+, Social Web of Things or Evrythng. Even if in these platforms objects are integrated in human social networks and interact with each other, a real social network of things has not been realized yet (Atzori et al. 2014).

To illustrate a SIoT the concept of connected cars can be enhanced. One idea is that future connected cars exist of several sensors which record multiple parameters of the car. In case of a technical problem, the car builds a profile of the problem and shares it in the social network to search for similar problems that already may have been reported by other cars. On basis of these results (best practice), the car suggests right away a solution to solve the problem. This solution can be a do-it-yourself solution or a suggestion to drive to the next specialized workshop (Atzori et al. 2012).

There is no doubt that IoT will develop further and have a massive impact on our daily life in the future. Through advanced technologies and an increasing affinity of people to electronic devices, we will face a change in user behavior. This change will also affect Search Engine Optimization. Nowadays, people often use search engines to gather information, especially if they use a mobile device with the aim to solve an existing problem. In future, electronic devices will act as personal assistants. They monitor the behavior and will provide special services immediately depending on the needs of the person. Thus, the number of searches executed by people will probably drop because many solutions or services will be provided directly by IoT. As a result, it can be assumed that the number of search queries will not be negatively affected by the development of IoT but the “who” is searching will change. In future, IoT will foresee the needs and execute the search even before users think about to search for that special kind of service or information. Hence, search engine optimizers need to investigate the developments in IoT precisely to understand the technology and search algorithm behind in order to be able to adapt the content if necessary.

4. Recommendations

Extension of service offerings

Crucial element of the recommendations for SEO agencies is the extension of service offerings in order to create a holistic package for all upcoming new sources. This includes the positioning as a consultant regarding new multi-channel strategies. Being one of the first movers in the segments of new Places of Search, Wearable data analysis or Internet of Things leads to a potential sustainable competitive advantage and accordingly to this support extraordinary growth. Existing trends need to be integrated into this service packaging, as covering various additional social media platforms with numerous users, as e.g. LinkedIn or even more importantly Twitter. Micro-interactions become increasingly important, as they deliver precious information as hashtags, being able to be directly assigned to specific topics. Although the velocity of data exchange and life-cycle of certain subjects will change, an adaptation and customization to customers' needs will help in an improved positioning as a SEO provider. Emerging trends should always be further kept in mind in order to deliberate about whether an expansion of offerings is feasible in terms of resources, as time, personnel or due to monetary reasons. Interpretation of additional data level streams as the emotional level are poorly developed yet by SEO agencies and could therefore present a new source for keywords to be integrated. Hence, Big Data topics should be closely followed to identify state-of-the-art data sources, ready to be processed in the context of SEO.

Continuous market research

A regular analysis of the market is important to be able to react quickly to new trends and changes in consumer behavior. Thereby, it can be useful to gather information from different sources to get a comprehensive impression of possible developments and changes. The following resources can provide an information value to indicate and estimate potential trends. Industry magazines like Website Boosting or suchradar can provide information and insights on upcoming trends and may provide different points of view which in turn helps experts to review their attitude. Moreover, conferences, trade shows and expositions are an important source of information. Especially the exchange and discussion with other experts can help to deepen the understanding of new trends and changes. A customer journey analysis intends to improve the budget

allocation between different marketing channels. Furthermore, changes in user behavior regarding the preferred channels can be identified by that kind of investigation. Thus, offering a customer journey analysis or working together with specialized customer journey providers like AdClear or intelliAd can help to identify changes in user behavior prematurely. Another possible source are patents in order to see what companies are working on. The German Patent and Trade Mark Office or the European Patent Office can provide first hints on how the future will look like and how things will evolve. Additionally, journals (e.g. the International Journal of Internet Marketing and Advertising) provide scientific insights in research areas and can help to understand the influences and effects of variables. This facilitates the evaluation of potential trends as well as arising threats and opportunities.

Network building

Cooperations with educational institutions like universities are advisable to gain new knowledge and allow diverse perspectives on upcoming trends. Putting the focus on network building with peer groups enables to exchange know-how and build up relationships to be up-to-date in terms of new trends.

Particular attention should be paid to the internationalization. Online marketing agencies are forced to run international campaigns to receive large budgets. Therefore, e.g. they need to have cross-country inter-connected activities and contacts to important networks in order to ensure attractive on-site margins. Furthermore, it is essential to involve the user behavior, market laws etc. in the campaign (Stieber 2014).

Human capital base strengthening

Finally, the authors suggest to build up a specialist freelancer base. This could include data protection commissioners to ensure up-to-date knowledge on data privacy policy because of the rising importance of data privacy issues. As soon as a special service is needed for a project, an expert from this freelancer base could be contacted and asked for support. There would be cost advantages as a service is only demanded and paid when it is needed instead of hiring people for permanent employment and firing them in case of poor order situation. For building up a freelancer base cooperating with job recruiters or agencies placing freelancers could be an option.

5. Conclusion

In summary, all trends that were discussed in the previous chapter, namely Big Data, Privacy, Place of Search, Mobile, Voice, Wearables and Internet of Things, will have an impact on SEO in the future and will lead to fundamental changes in SEO. The search process will change considerably. Right now changes in the user behavior can be noted from search via direct type to voice search. In the long term, through the advancement of the Internet of Things, people will not have to type in a search query explicitly anymore, but queries will be implicitly made without the user noticing it. They will be based on the current user context and will be generated automatically on the basis of historical, aggregated user data. This trend will be also strongly supported through extended usage of alternative devices. With reference to this, the role of Big Data will gain more and more in importance. Nowadays, a huge amount of data is already collected. Mobile and wearable devices as well as internet platforms people use deliver valuable information about the location of people, their preferences and their everyday life. In the future, especially wearables will contribute noticeably to the data collection as they are an upcoming trend, at the moment. Those devices have the capability to exploit various new data levels, as data on the emotional level. Thus, search will become more context oriented and data driven. However, this development will lead to a more complex discussion about data protection. Search engines will become a fundamental technology being part of the devices which means that people will not have to search anymore. Devices will carry out the search process for the users. Search engines will get better in interpreting search queries, a development that is based on the already existing approach to a semantic web which makes it possible to generate direct answers and draw conclusions from combined information. In terms of the proposed recommendations, in particular network building, the extension of services offered, continuous market research and investments in human capital will be essential in order to react to new trends and to stay competitive in the market (Lewandowski 2015).

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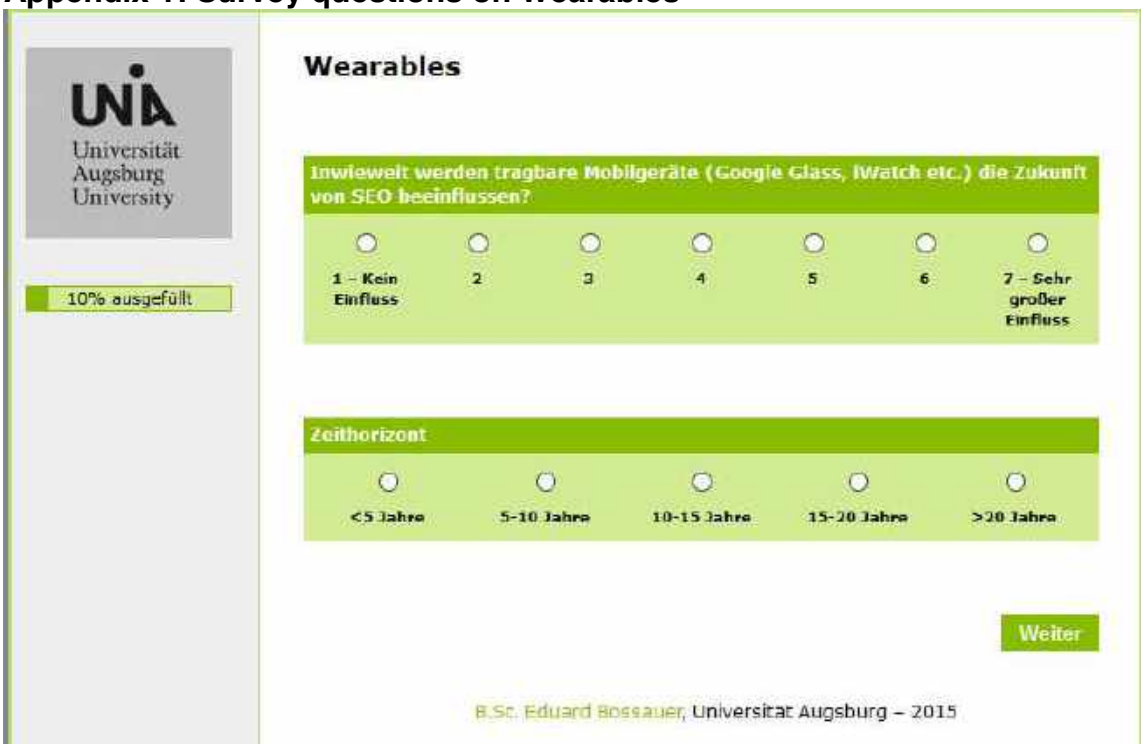
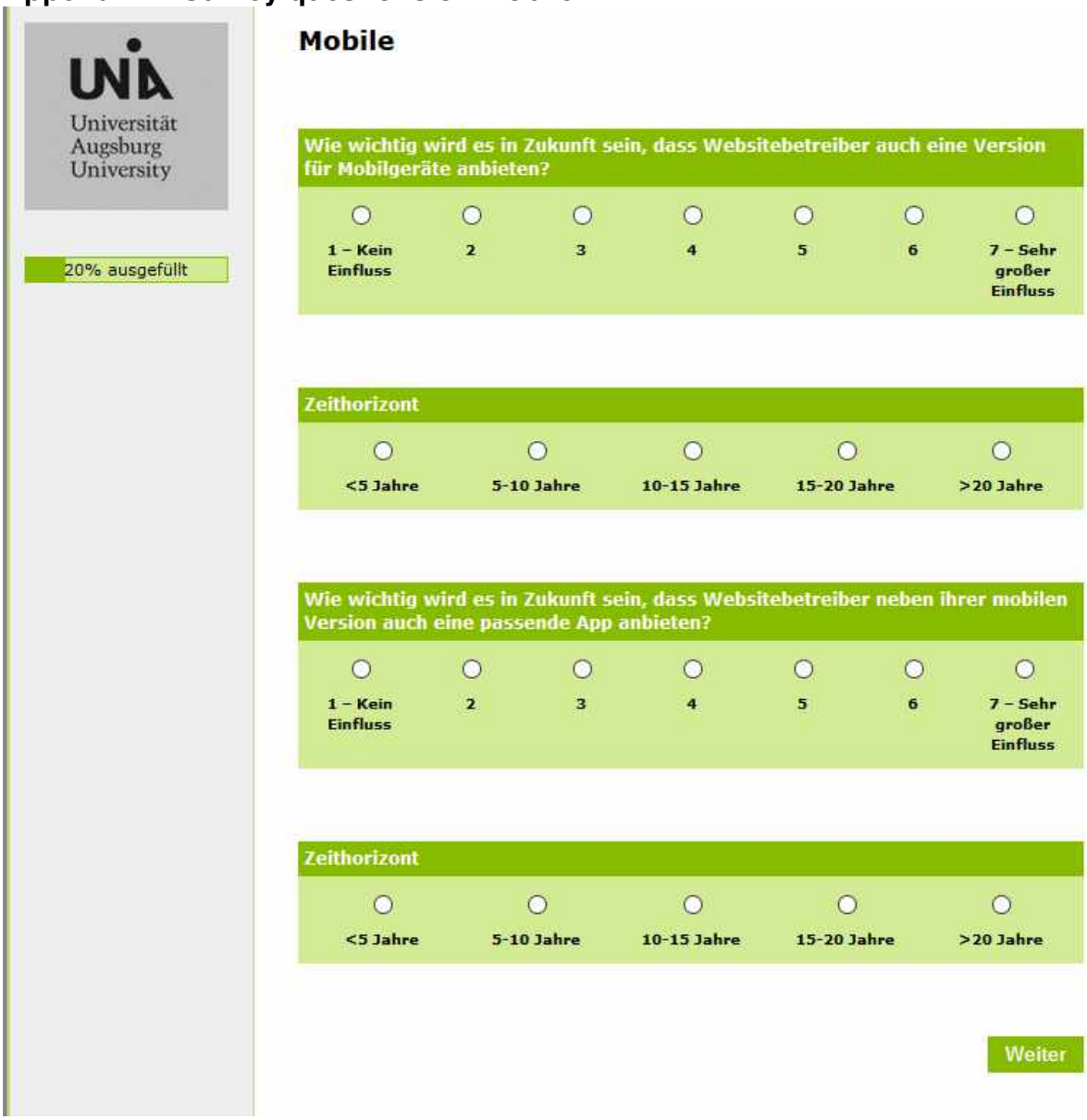
List of Appendices

Appendix 1: Survey questions on Wearables



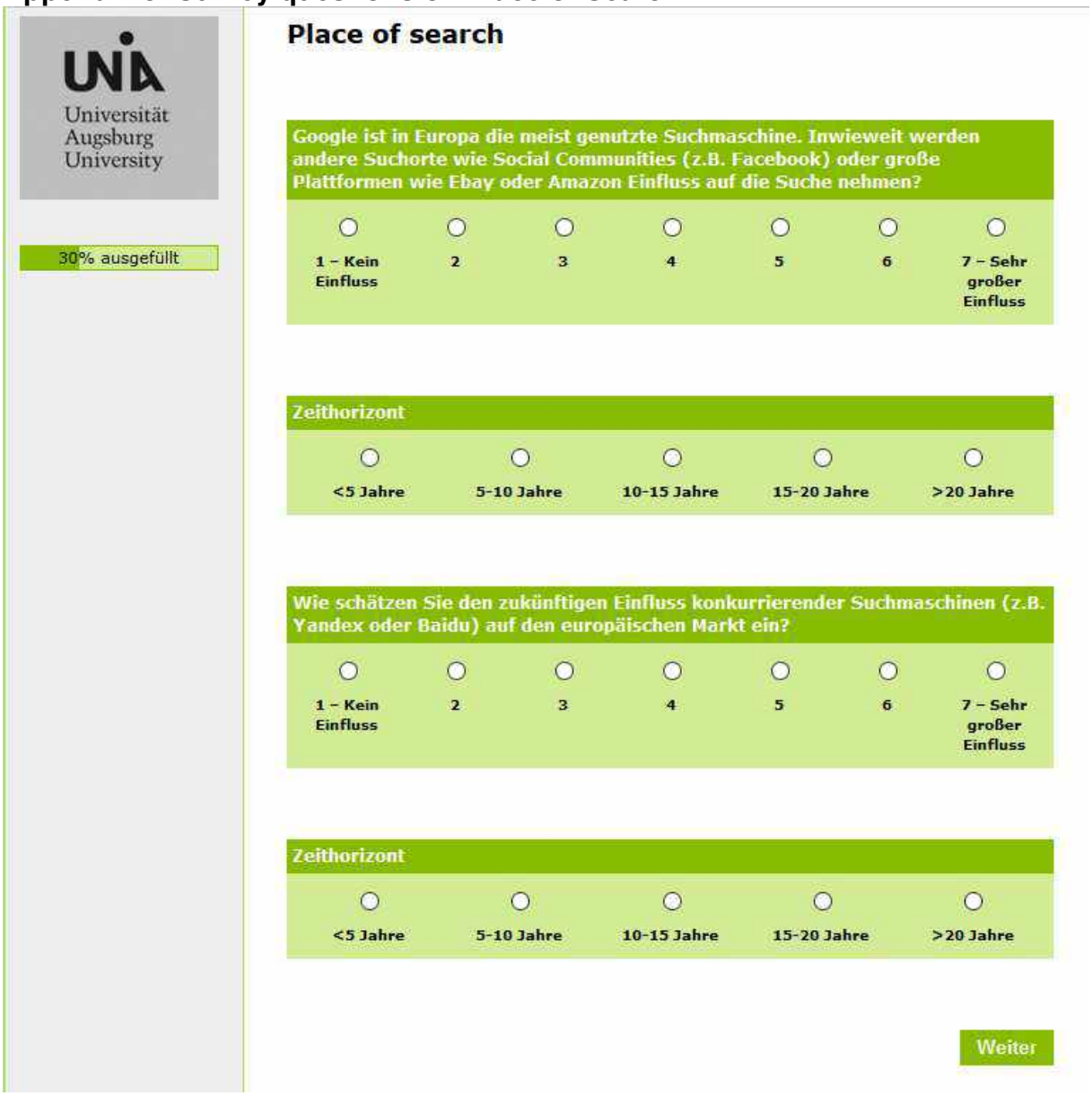
Source: Own depiction / SoSci Survey

Appendix 2: Survey questions on Mobile



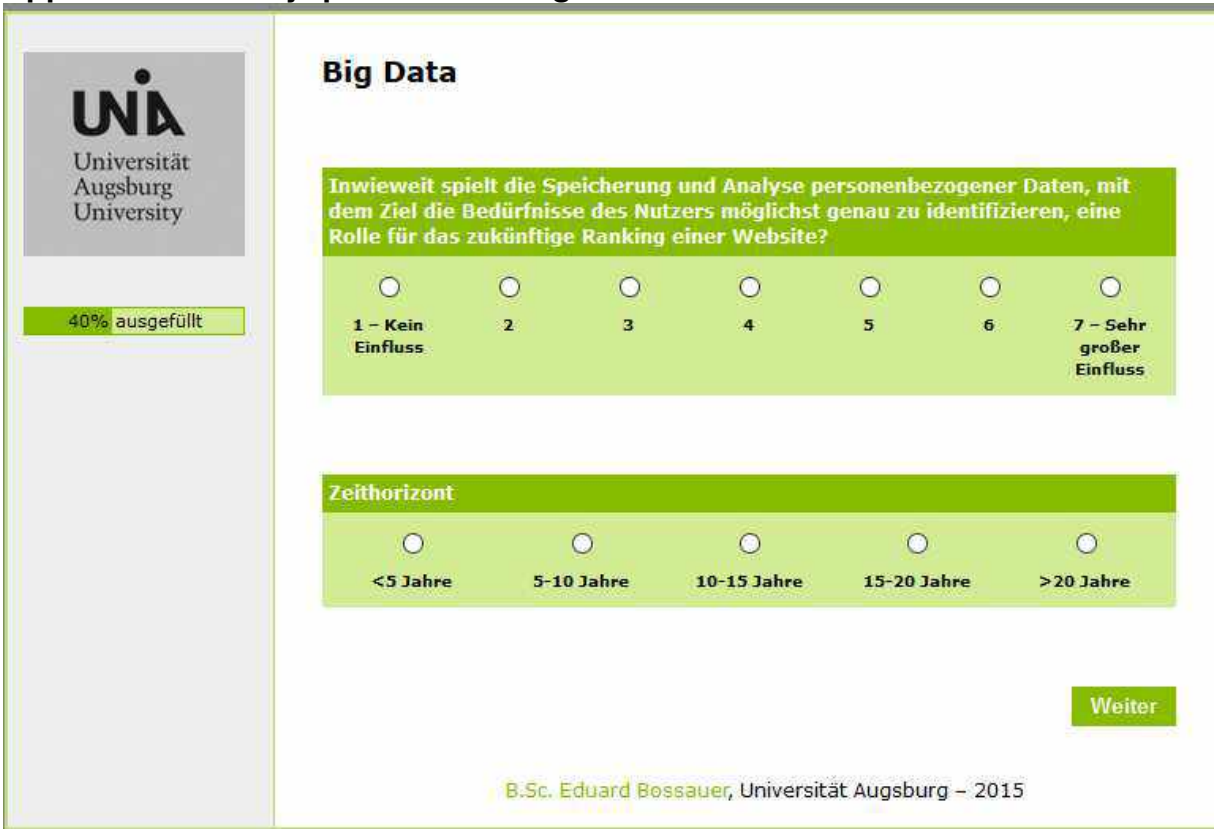
Source: Own depiction / SoSci Survey

Appendix 3: Survey questions on Place of Search



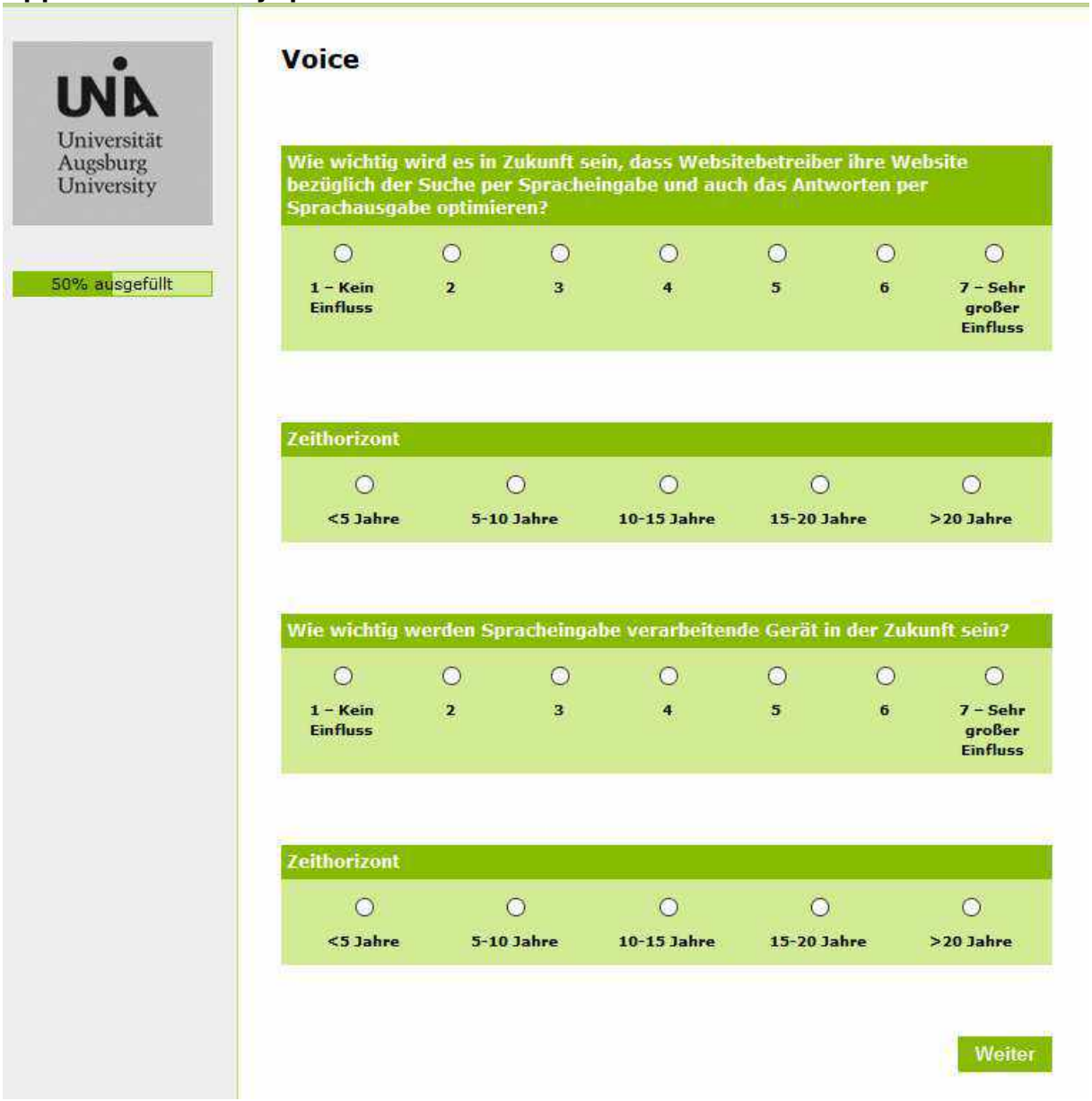
Source: Own depiction / SoSci Survey

Appendix 4: Survey questions on Big Data



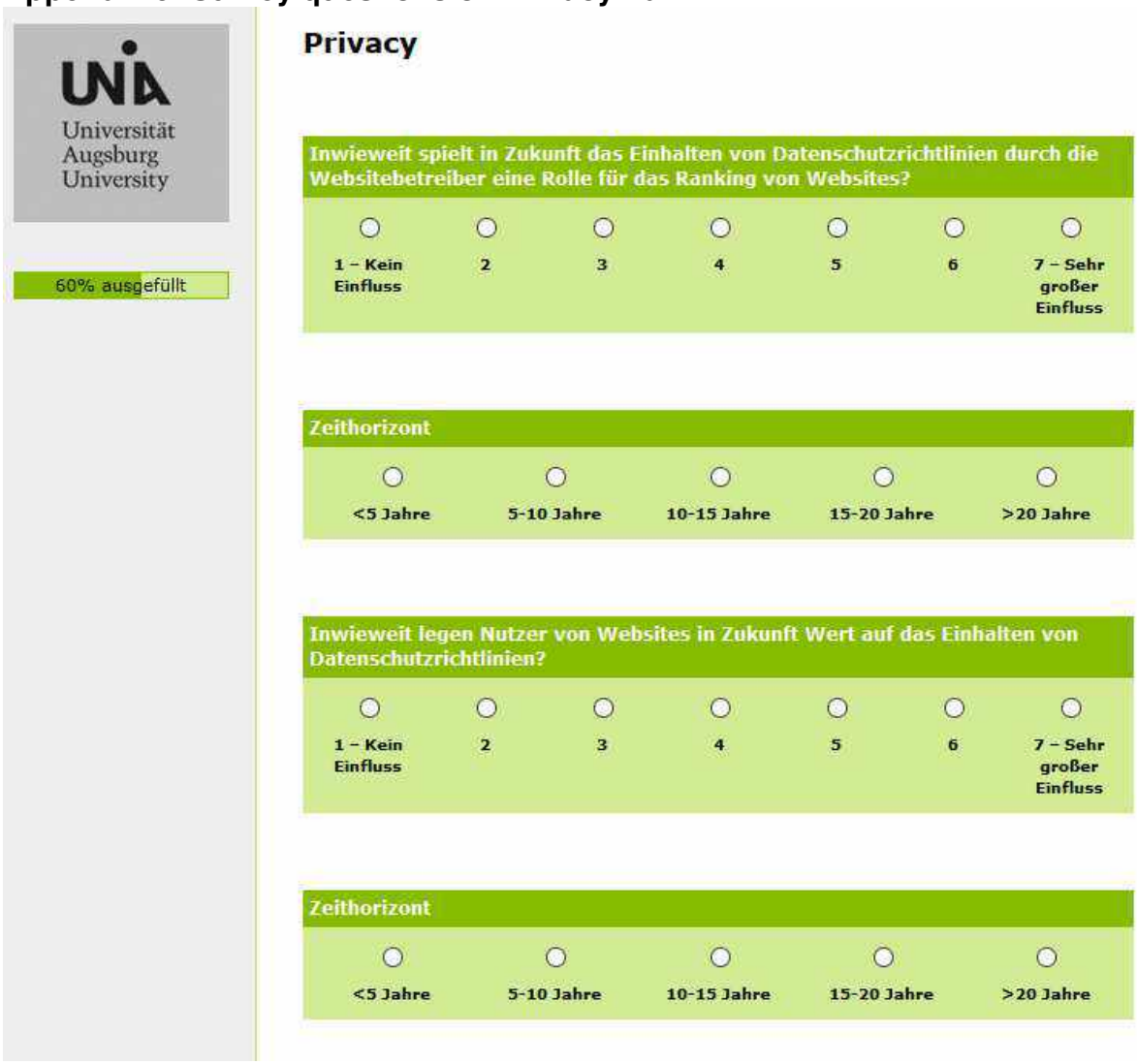
Source: Own depiction / SoSci Survey

Appendix 5: Survey questions on Voice



Source: Own depiction / SoSci Survey

Appendix 6: Survey questions on Privacy Part 1

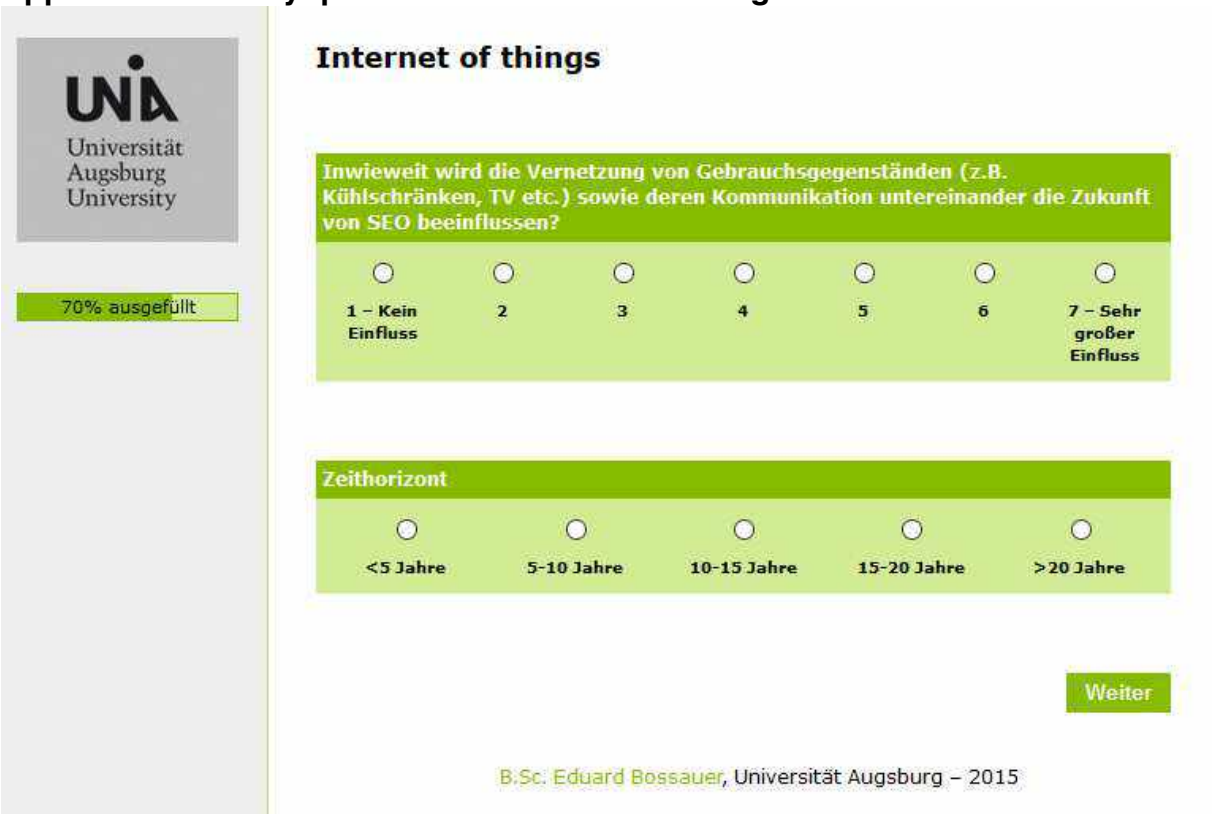


Source: Own depiction / SoSci Survey

Appendix 7: Survey questions on Privacy Part 2

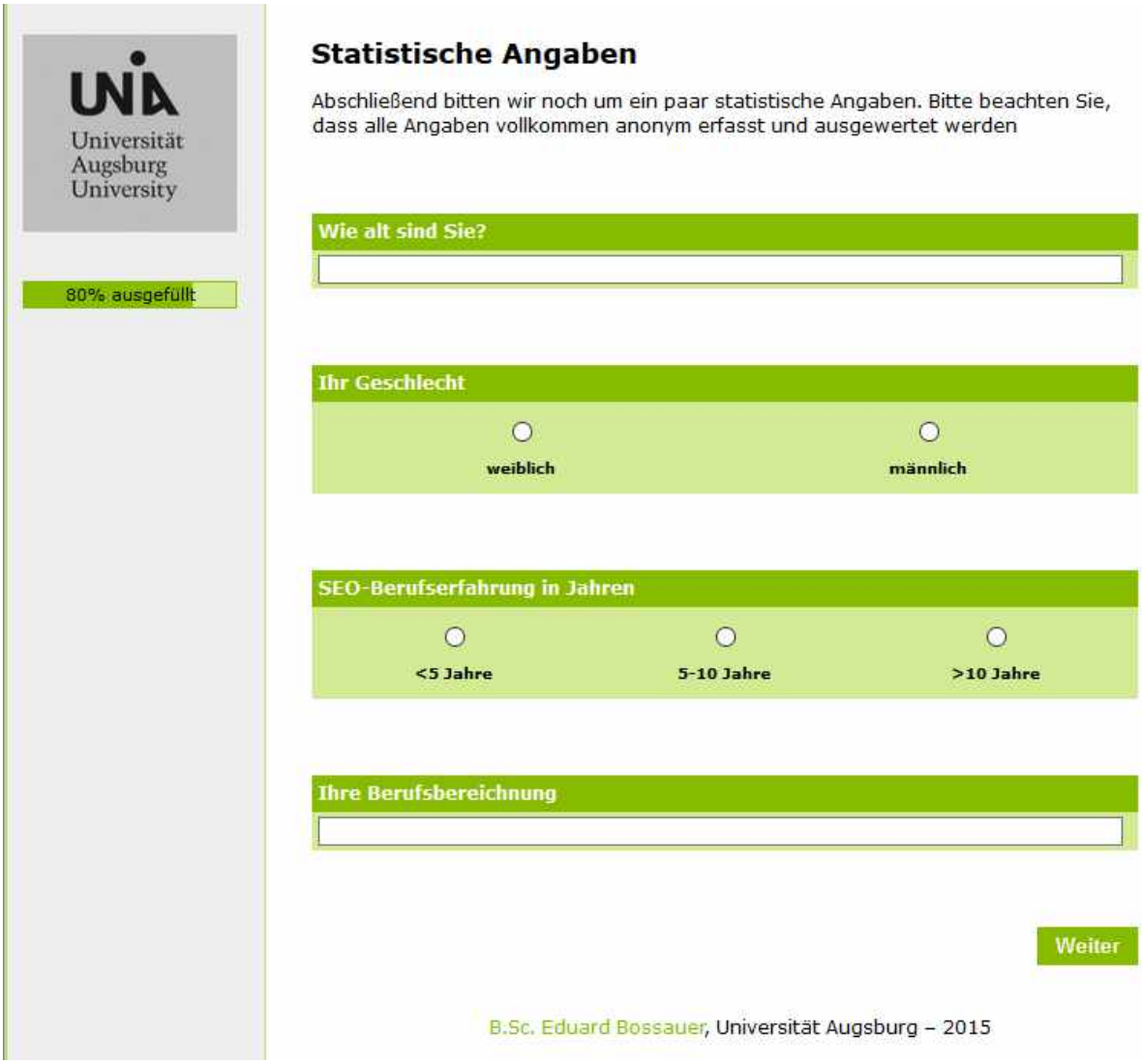
Source: Own depiction / SoSci Survey

Appendix 1: Survey questions on Internet of Things



Source: Own depiction / SoSci Survey

Appendix 2: Survey questions on Demographics



Source: Own depiction / SoSci Survey

Appendix 10: Survey results - Mean value, standard deviation, variance

Relevance	**Wear-ables**	**Mobile**	**Place of Search**	**Big Data**	**Voice**	**Privacy**	**Internet of things**
mean	4,79545455	4,95454545	3,89772727	4,93181818	4,53409091	3,78030303	3,54545455
sd	2,09522775	2,14745669	2,05625306	1,86349778	1,82126869	1,93967505	1,8641906
var	4,49207188	4,6645768	4,276776638	3,55338266	3,35514629	3,79105945	3,55602537
obs	44	44	44	44	44	44	44

Time horizon	**Wear-ables**	**Mobile**	**Place of Searche**	**Big Data**	**Voice**	**Privacy**	**Internet of things**
mean	1,56818182	1,22727273	1,375	1,29545455	1,65909091	1,59090909	1,90909091
sd	1,0530848	0,71869947	0,62726861	0,75617294	0,70527821	0,8612407	0,84794355
var	1,13477801	0,52246604	0,39798851	0,58509514	0,5031348	0,74739764	0,73572939
obs	44	44	44	44	44	44	44

Source: Own depiction

Appendix 11: Survey results - Percentaged distribution

Time horizon	Wearables	Mobile	Place of Search	Big Data	Voice	Privacy	Internet of things
up to 5 years	65,91%	88,64%	69,32%	84,09%	45,45%	59,09%	36,36%
5 to 10 years	25,00%	4,55%	25,00%	6,82%	45,45%	28,03%	40,91%
10 to 15 years	2,27%	3,41%	4,55%	4,55%	6,82%	9,09%	18,18%
15 to 20 years	0,00%	2,27%	1,14%	4,55%	2,27%	2,27%	4,55%
over 20 years	6,8%	1,14%	0,00%	0,00%	0,00%	1,52%	0,00%
Sum	100,00%	1,13477801	1,13477801	100,00%	100,00%	100,00%	100,00%

Relevance	Wearables	Mobile	Place of Search	Big Data	Voice	Privacy	Internet of things
1	15,91%	5,68%	11,36%	9,09%	6,82%	15,91%	20,45%
2	4,55%	17,05%	23,86%	6,82%	13,64%	16,67%	15,91%
3	4,55%	7,95%	15,91%	2,27%	7,95%	13,64%	11,36%
4	6,82%	7,95%	6,82%	15,91%	11,36%	13,64%	13,64%
5	20,45%	10,23%	12,50%	18,18%	26,14%	17,42%	22,73%
6	22,73%	9,09%	13,64%	25,00%	19,32%	12,88%	11,36%
7	25,00%	42,05%	15,91%	22,73%	14,77%	9,85%	4,55%
Sum	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
Total number of observations	44	44	44	44	44	44	44

Source: Own depiction

University of Augsburg

Faculty of Business and Economics

Chair for Value Based Marketing

Services Marketing: Case Studies

WT 2015/2016

Status Quo and Trends in Search Engine Marketing

Date of submission: March 4, 2016

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PERFORMANCE IN DIGITAL MARKETING

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List of Abbreviations

SEA	Search engine advertising
SEO	Search engine optimization

1 Introduction

Nowadays there is hardly anything that can be characterized as faster moving than technological development can be. The pace of improvements and innovations is rising every year. The internet is one of the major inventions that changed nearly every part of a human life and is now the base of many technologies. Numerous of functions facilitate everyday actions for people and the number of these functions increases all the time. The possibility of searching for information in the internet by using search engines was kind of a milestone during this development. The trend that can be discovered now refers to different developments in the area of search based on new technological possibilities. Marketers being active in the field of search, which grew up to a huge business area, have to deal with these new developments that change their work to still perform well. Especially the search engine optimization business, shortly SEO, has to handle and adapt these changes to stay successful.

Academic research on developments in SEO is rare, especially regarding new technical possibilities modifying the marketers' basic principles. The pace of technological changes prevents such researches. Within this business, the exchange of knowledge and news is done by publications of specialists, mainly through internet blogs or conferences. Such publications predominately focus on one specific topic and development and give short insights or ideas on how to react to this trend. This paper concentrates on collecting the most important facts and consequences of various trends that will change the search business. Hence, the target is to create an overview of all relevant trends and their aspects to gain a comprehensive insight in how the future of search will look like compared to singular publications and discussions. Therefore, a demonstration of search engine development until now and its changes through indicated future trends was executed to give recommendations for SEO marketers.

To achieve this goal, several researches were conducted to close the gap of a currently absent overview. Two kinds of surveys were performed to gain insights into user behavior and evaluation on the one hand and specialist´s opinions on future development in the field of search on the other hand. Therefore, an investigation among 30 fellow business administration students at the University of Augsburg was carried out in a written form with open questions on internet and search behavior.

Moreover, "How important do you consider the trend" and "In which period could the trend be relevant" were asked for some possible identified trend on 5-point Likert scales. Furthermore, experts got interviewed on this topic in open talks and in a written way, too (CEO Seobotic, Senior Analyst Digital Business ProSiebenSat1 Digital, CEO Transmedia Bayern, Director Audience Development Sony Music, Manager IT Projects ProSiebenSat1 Digital). The main focus to gather information was a literature review of journals, specialized blogs on online marketing and technology, corporate blogs and websites of relevant marketers as well as specialized books.

To achieve the presented goals, a clear structure will guide through the topic in this paper. Preliminary, background knowledge on the field of search generates a base for the following analysis of future trends. The history of search engine development, an insight in marked-based causes for the search business as well as a narrow explanation of technical frontend and backend functionality of search engines comprise this foundation. The next step and main part then will be the introduction of the identified trends. Each trend will be presented in terms of key facts based on literature review and the own survey results, its consequences for frontend and backend search processes and recommendations for digital-media-agencies. In the end a summary of recommended actions give a final overview for marketers of what they should concentrate on.

2 Background

The second chapter 'Background' deals with the background of search engines. It gives an overview of the history of search engines followed by the market-side background and the technical background of search engines. The market-side background approaches the relevance of online marketing, especially SEO in the economy and the market. The issues how search engines work and how people interact with search engines are covered in the technical background of search engines.

2.1 History of Search Engines

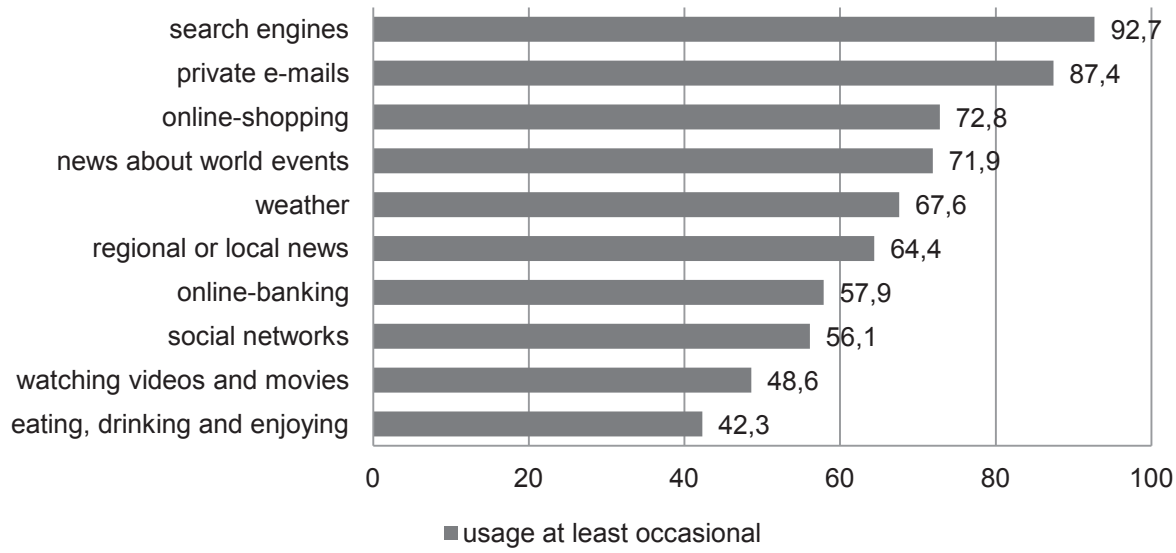
In order to deal with search engines, getting an overview of their history is advisable. In the early 1990s the European Organization for Nuclear Research (CERN) and some universities developed different tools to enquire a high amount of data via a menu-driven user interface (Patalong 2008; Wnendt 2015). Later, in 1994, the commercial search engines, as they are still known today, were born. During this year the first search engine Lycos and the directory service Yahoo were launched (Horn 2016). Four years later, in 1998, the search engine Google was registered. "A simple, nearly artless user interface together with a heretofore unmatched search speed" (Hemken 2016) and the PageRank were just two reasons for the runaway success of this search engine (ibid.). Between 2003 and 2005 the personalization of results began and local SEO was introduced for the first time (Stern 2015). In 2006 the era of the universal search began. It lasted until 2009 and at that time the search engines' focus was on "user intent and expanded user list" (ibid.). From 2010 to 2012 enormous variation underlay the search process. Google had major updates like Panda or Penguin, which lead to higher quality and user-focused content (ibid.; SEOmoz 2016). The Knowledge Graph was launched by Google as well. As a consequence of these improvements, the importance of social signals and localized search results increased (Stern 2015). Privacy and personalization were the most important focus areas in the era from 2013 to 2015. The importance of mobile and local search grew as well, which was emphasized by Google's mobile-friendly update in 2015 (Makino, Phan 2015). During the same era, the well-known updates Hummingbird and RankBrain were rolled out. These lead to changes in the semantic

search and the improvement of machine learning (SEOmoz 2016). The goal of this seminar paper is the identification of the future trends in SEO.

2.2 Market-Side Background

The relevance of online marketing for online marketers is displayed in the market side background of search engines. A 2015 online report shows that the online-penetration according to age groups in Germany is extremely different (Bundesverband Digitale Wirtschaft e.V. 2015). More than 95% of people from the age of 10 years to the age of 29 years are internet user. In the age groups between 30 years and 49 years, more than 90% of people use the internet. Between the age of 50 years to 59 years, 78.8% of people are internet user. In the age group with people that are older than 59 years, only 41.5% of people use the internet (ibid.). It is arguable that the younger someone is, the more probably this person uses the internet.

Figure 1:
Focus of Using the Internet - Top 10
(reported in 2015)



Source: Based on Bundesverband Digitale Wirtschaft e.V. (2015).

While people in Germany use the internet, they focus on special topics whereby the Top 10 are reported in the above-noted graph (ibid.). 92.7% of internet user use search engines at least occasionally, which is the most important topic, people practice when using the internet. It is followed by sending and receiving private e-

mails. 87.4% of the internet user use this service at least casually. The third relevant focus is doing online-shopping (72.8%), closely followed by reading news about world events, which is done by 71.9% of internet user at least occasional. 67.6% of people search information about the weather, 64.4 % are interested in regional or local news at least occasionally. More than 50% of internet users do online-banking now and then (57.9%) or use social networks (56.1%). The last two foci of the Top 10 are watching videos and movies (48.6%) and catch up on eating, drinking and enjoying (42.3%) (ibid.).

Hence, one can infer that online marketing is highly relevant for online advertisers. Especially SEO and SEA are the most relevant topics since so many people use search engines. Online advertisers realized this boom. 62% of them planned to increase their budget for SEO in 2015 (Müller 2016).

2.3 Technical Background

As a basis for analyzing the identified trends and the resulting changes an overview about the current state of search engines is required. Therefore, two perspectives have to be considered in order to gain a comprehensive overview about which aspects matter and should be thought of in terms of changing trends: both the frontend of search engines, which can be described as the various actions people do during their classical web search, as well as the backend, which contains the technical processes of search engines.

2.3.1 Frontend of Search Engines

If the state of the art of web searches is defined as the known desktop search, the following steps are crucial to perform a web search. An upcoming need for information or an emerging question marks the beginning of a search. Up until the searching person can open a browser on a computer and go to a search engine website, he has to remember this question. As a next step, the person has to formulate an appropriate query, that represents the need in words, and then type in these keywords. The following step describes the scanning through the search engines result page to identify possible matches with the question. If a promising result can be found, people click on this link and then have to browse through the resulting website for a fitting solution. This can either be successful and thus quotes the end of the search or unsatisfying and the searcher then has to return to the result

page to scan for another option or even perform a new search with a different formulated query, when the first try obviously did not provide adequate matches (Fishkin 2015).

2.3.2 Backend of Search Engines

To create the result page, which people receive from search engines after entering their query, complex technical processes are running in the background. The base of every search engine is its index, which can be described as an own database that contains these data, which a software called the crawler can find from the web (Cutts 2010). Therefore, the crawler fetches web pages by following links on these pages and stores them in the index. When users actually perform a search by typing in their chosen query, the search engine loops through its index to identify all stored pages that include the search term. In almost every case a huge amount of possible matches can be detected. Consequently, the search engine uses its specified algorithm with ranking factors to decide, which documents are most relevant for the user. The following examples represent the currently best known ranking factors search engines usually do not release to marketers. One of the most important aspects are keywords as well as their possible synonyms included in the website content, but moreover issues such as titles and URLs matter in this context. Especially since the recent development of updates, the quality of content evolved into another very relevant factor, which also contains the aspect of content actuality. A criterion, which is fundamental for search engines as it means their origin, in particular in the case of Google, is the popularity of a website. A formula invented in the early days of Google, called Page Rank, analyzes the outside links pointing on a website, named back links, due to importance and quality and rates web pages according to this analysis (ibid.). In addition the users click behavior on a website contributes to the popularity factor, too. Furthermore, the personalization and localization of search results in the specific case has an influence on the ranking (Lewandowski 2015). Finally, an overall score for each page is built by combining the introduced as well as all the other factors of an algorithm. In the end, the ranked results are sent back to the searching person with the highest scored page on top (Cutts 2010).

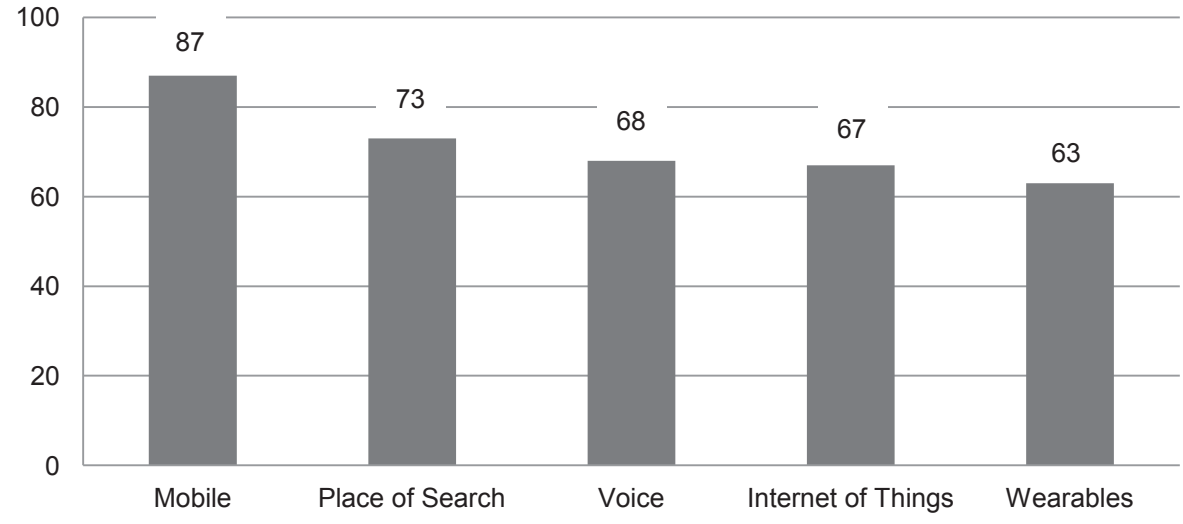
3 Trends

The following chapter covers the main topic of this project paper. It addresses the seven future trends in SEO which were discovered in research and in collusion with the chair.

3.1 Overview of the Trends

The different trends are ranked and sorted based on earlier research. Five of the seven trends can be seen as technologies whereas the remaining two trends are considered as placed on a meta level. They influence the five technologies and are consequences of them at the same time. The below-noted ranking of the technologies relies on the survey among fellow students and on the question about in which period the specific trends could be relevant for them. The results are aggregated in percent and show the relevance of the trends within the next seven years.

Figure 2:
Overview of the Trends -
Relevance Within the Next 7 Years (in %)



Source: Own depiction.

For fellow students, the trend ‘mobile’ is currently the most relevant technology. 87% of them consider it as relevant within the next seven years. This is followed by ‘place of search’, which fellow students consider as the second relevant trend. This technology will become relevant within the next seven years for 73% of them. The

trend ‘voice’ is the third relevant technology. It is seen by 68% as becoming relevant within the next seven years and is closely followed by ‘internet of things’. 67% of fellow students assess this trend with high relevance until 2023. Currently the technology ‘wearables’ is seen as the least relevant trend. It will be relevant within the next seven years for merely 63% of fellow students.

The five technologies are subordinated in the two remaining trends ‘big data’ and ‘privacy’. These two trends cannot be seen as equal trends with the five technologies. Due to this, they are detached from the technologies and have a different structure.

3.2 Mobile

Definition and Key Facts

The most relevant trend ‘mobile‘ is already a part of today’s daily life. People use their mobile devices instead of many different devices for taking pictures, surfing the internet, sending messages, using social networks or searching for specific queries (Bitkom Research GmbH 2015a). But how could a search process on a mobile device be defined? The term ‘mobile search’ is a “search engine querying technique that uses a wireless/mobile platform or handheld device with an internet connection” (Techopedia 2016a). Examples for electrical appliances, with which people can conduct a mobile search, are smartphones or tablets (ibid.) such as the Apple iPhone, Samsung Galaxy, Microsoft Surface Pro or Huawei MediaPad. The results of this type of searching often consist of “simplified data results, such as sports scores” (ibid.) or weather displays, so that the user does not have to click on a specific result on the search engine result pages. A search process, which is realized on a mobile phone, “is more than a desktop to mobile device transition, as it is a continuously evolving tool designed to satisfy mobile user content requirements” (ibid.). In 2015, the time spent per adult with a mobile phone per day exceeded the time spent with a desktop computer or laptop in the USA (Meeker 2015). The same presentation demonstrates a huge gap between the time spent per day in mobile devices and the advertising spent on this kind of device in 2014 in the USA. People spend 24% of their time per day with a mobile device, whereas just eight percent of the whole ad spend was on this kind of device. A consequence of this fact is a great opportunity for mobile marketing, especially mobile SEO.

Survey Findings

Fellow students were questioned about the importance of mobile and the mobile search technology. This trend is seen by 57% of the survey participants as very important and by 33% as important. Only three percent consider mobile as neither important nor unimportant. Surprisingly, seven percent of participants think that this trend is unimportant to them. This is a relatively high value for a technology which boomed during the last years (Bitkom e.V. 2015a) and is indispensable for daily life because it became established as a versatile machine (Bitkom e.V. 2015b). The survey participants besides were asked to evaluate the relevance of the mobile technology within the next years. 80% of these participants consider this trend as getting relevant within the next one to four years; seven percent see it as a relevant technology within the next five to seven years. For another seven percent mobile will become relevant within the next eight to ten years. Three percent rate this trend to be unimportant; they suppose that it will become relevant within the next eleven to 15 years. The remaining three percent of the participants do not believe in the mobile technology. They see this trend becoming relevant within more than 15 years.

Consequences for Search - Frontend & Backend

Performing a search with a mobile device largely varies from the traditional steps of search. People act different during a mobile search resulting in consequences for the process of searching. Therefore some steps have to be adjusted. By using mobile search, people do not only have an upcoming question for which they want to have answers, but people also search for location-based queries and immediate requirements, because they often use their mobile phones while they are on the go. This is a different situation compared to being at a computer and thus, people have different questions. Remembering the issue is not relevant anymore, because people usually have their mobile phones with them (Bitkom e.V. 2014). The search engine can then be activated on the mobile phone by opening the browser, heading) to a search engines website or by opening the search engines app. Now (nearly) every search engine, like Google, Bing or Yahoo, has its own app, which can be downloaded and installed on different kinds of mobile phones (Sparr 2015). The apps search process is much quicker than opening a search engines website on the browser on a computer. Due to these circumstances queries do not necessarily have

to consist of important questions. Because a person can reach a search engine quickly during a mobile search, people more often search for more small and uninteresting queries (Tabeling 2015; Hitzig 2013; Grundmann 2015). The keywords, which represent the search query, still have to be typed in. This is inconvenient regarding the small keyboard at a mobile phone which leads to the result that people often make typing errors and get annoyed (Gabdulin 2014). A search engine result page does exist during a mobile search as well, but it is supplemented by results with location-based references (Grundmann 2015). When searching the correct answer for the query, people have to scan through the search engines result page to identify possible matches and have to click on a link of a promising result, such as during a desktop search. In order to find the solution, people then have to browse through the resulting webpage. This can be satisfying or not for the searching person, which results in the same following steps like during a traditional desktop search (Fishkin 2015).

Not only has the behavior of the searching person but also the technical processes in the background of search engines changed due to conducting a search. The indexed database receives not only content from the web but content from apps as well (Dunn 2016). With a mobile device, the user provides much more data. This can be location-based, personal or device data such as gender, age or movement profiles. Information about preferences or the devices people use, are provided by doing a mobile search, too. This data is getting stored and intertwined with the existing information about a specific user or a user group (Google 2016a; Google 2016b). As previously mentioned, a consequence for the user's data input is the growing importance of location-based search since most people are on the go while searching with a mobile phone. Google's algorithm is influenced by this technology; the search engine result page shows different search results due to filters like the mobile friendly update in 2015 (Makino, Phan 2015). For the future, new challenges for the algorithm of Google could be the different types of data provided by the users. These have to be processed and linked to the database and to other data provided by this user or other users (Google 2016b). Then Google will come a little closer to its aim to provide the perfect answer to a specific question (Cutts, Pacher 2011).

Consequences for Digital-Media-Agencies

Due to the growing importance of mobile search, digital-media-agencies should prepare themselves for changes in the future. Sites for mobile phones should be created mobile-friendly and contain relevant content that is reduced and optimally fits to the different kinds of even small screens. The ranking of mobile keywords is different than the ranking of desktop keywords (Meunier 2011). According to that, mobile keywords should be examined and observed. Google has some advices about how a perfect mobile site should look like and moreover, recommendations for people doing SEO (Google Developers 2016). These include the favor of responsive web design and how to avoid common errors (ibid.). These advices should be followed. To always be up to date, digital-media-agencies should understand the importance of newly provided data and should derivate a benefit from them. Also the influence of Googles' algorithm-updates should be understood and agencies should respond to them quickly. Moreover, agencies can optimize a business for location-based search, hire a mobile marketing manager or improve their employees' skills due to this technology.

3.3 Place of Search

Definition and Key Facts

The formulated term 'place of search' can be described due to different recent developments gathering attention as they are well discussed currently among online marketing marketers. On the one hand, the obvious development that Google no longer simply targets web content from classical web pages can be observed. They include various other sources to their information search process to a greater extend, which are finally displayed on the result page in addition to the conventional findings. The following two representative examples give a clear insight into what is done in this context by search engines. App indexing enables content from application that got indexed before, to be included into search engine processes and additionally displayed in the results, when there is a match with the query (Wald 2015). The resulting link to the application facilitates a direct take into the specific app content, when this application is already installed on the user's device, or they get the possibility to download it (Moroney 2015b). So far there are over 50 billion indexed deep links into applications (ibid.). Furthermore a Google update in May 2015

realized the addition of indexed tweets into search results. Thereby, Google attempts to put "real-time" information into their results, especially for searches on circumstances happening currently (Arac 2015).

On the other hand, there is a further development of search capabilities going beyond Google, Bing and other classical search engines. A shift to social channels with upcoming search possibilities can be discovered now, which leads to the use of the Google interface being no more dominant when people search for information. The best prevailing examples to show this development are the social channels Facebook and Pinterest. Facebook, as they lately introduced their own holistic internal search engine, named Facebook Search, which looks through over two trillion indexed posts, when one of the 1.5 million searches each day is performed on the platform during the spent time on Facebook, which is already a huge part (Constine 2015). This time will definitely increase, when users can be kept in the network because they do not have to switch the website for searching. Moreover, Pinterest assumes an important role, too, because according to a survey, overwhelming 96% of their users take the platform to research and to gather information (Eisenberg 2015).

Survey Findings

Among fellow students the aspects of the place of search, as defined above, are mainly considered to be fundamental according to 56% respondents rating this trend to be important or even very important. 34% represent the opposite opinion of considering the place of search unimportant or very unimportant. The remaining 10% do not care about this trend. Its main relevance is seen within the next seven years by 73% respondents (1-4 years: 40%, 5-7 years: 33%). 13% think, place of search will not be relevant until within the next ten years, and only 14% consider it to be relevant at a later date.

Consequences for Search - Frontend & Backend

These new developments implicate several changes for the classical steps of a web search and thereby for the user´s behavior. People still have to open a search engine or a new channels website, when there is a need for information. However, the possible advantage in the case of social media channels is that the user does not

have to leave this website and switch to another for performing a search. Due to the development of search possibilities in social channels there are new functions, which modify the step of typing in queries. An interesting example is the recently released in-pin visual search on Pinterest that allows people to mark a piece of a picture that shows the item of interest, instead of formulating a descriptive query (Jing 2015). Next changes can be identified on the search engines result page that users have to browse through. Especially Google´s result page contains additional results from various other sources, more precisely from applications and Twitter, as presented above. Finally, the user may be remitted directly into apps (Moroney 2015b) or into social channels instead of being linked to classical web pages. In the case of some social channels there are upcoming functions, which allow users to stay in one channel for a whole process of searching, watching and finally buying. This, for example, got realized with buyable pins on Pinterest (Primke 2015). These developments turn social media channels into a big competitor for classical search engines. Moreover, the fact that people have a higher trust in the opinion of fellow humans than in algorithms, which is represented in social channels, increases the competitive advantage.

Changes in terms of where the search process is taking place imply changes in the search engines backend, too. Their database, the index, definitely grows as a result of the increasing amount of informational data, which is collected from websites as well as social channels, which get indexed, like Twitter or indexed applications. Hence, algorithms of search engines have to improve in a way, to get an understanding of which sources provide the best solution for what a searcher is looking for with this specific request. Another change due to data input comes with the usage of social channels. People using such platforms provide more extensive data in form of very private and personal data along their social graph, which they share simply by using a social channel.

Consequences for Digital-Media-Agencies

Having the frontend and backend changes in mind, various consequences for digital-media-agencies arise. An overall recommendation would be the offer of new and additional services with specialists going beyond the traditional web page optimization. As an important part, apps should be optimized due to SEO set of tools.

This primarily includes the indexation of a client's application, so that the search engine can add this content to its database and depict it for a matching search request. Therefore, app content should be optimized due to, for example, keywords or possible inter-app linking (Cristo 2015). Moreover, Twitter actions should also be designed in a way, so that search engines could find this content for relevant topics or keywords. Finally, other social media channels such as the introduced ones Facebook and Pinterest should be taken into account, too, since some people already tend to use only these channels in order to find information, and this trend will definitely increase in the next years. Of course, all these aspects can only be implemented, if such actions fit to the clients business.

3.4 Voice

Definition and Key Facts

The following trend, shortly named 'voice', is a rather new technical development with a big boom during the last years, because people tend to judge typing on quite small keyboards of smartphones as uncomfortable and inconvenient (Marentis 2015). The term 'voice search' describes a "speech recognition technology that allows a user to perform a search via voice command" (Techopedia 2016b). Its interactive nature moreover allows multiple rounds of a question-answering-system (ibid.). The most common examples running on devices now are Siri from Apple, Google Now from Google, Cortana from Windows or a new device evolved from Amazon called Echo. In 2014, Google reported that 55% of teenagers and almost 41% of adults use voice search more than once a day and they use it mainly, because they are convinced that this is the future (Hoffman 2014). Furthermore, the quality of speech detection algorithms improved a lot in the last years according to the different languages, accents or the noise around a user (Moroney 2015a).

Survey Findings

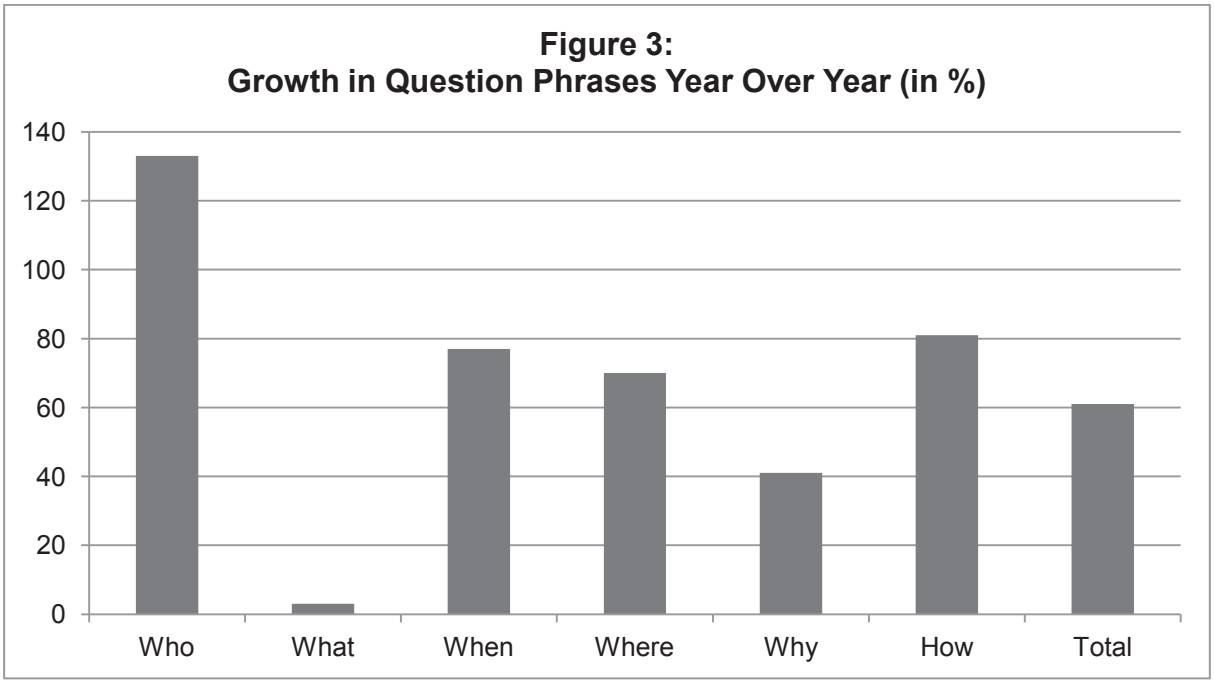
By asking survey participants about the importance of the voice technology, 53% consider this trend to be important or even very important. Only 7% think, voice is neither important nor unimportant. Nearly a third of the respondents believe that voice search is unimportant, and 10% actually consider it to be very unimportant. Moreover, the fellow students were asked to rate the relevance of the voice

technology within the next years. 34% consider it to be relevant within the next one to four years, another 34% within the next five to seven years. Hence, the majority thinks that voice will be relevant very soon. The remaining participants do not believe in voice relevance within this time, but at a later date.

Consequences for Search - Frontend & Backend

Performing a voice search instead of its classical alternative means a lot of changes of how people actually behave during the search. The first big variation is about not to remember an upcoming question, since people usually have their smartphones or other devices with voice technologies with them. The activation happens simply by using technology specific voice commands, for example "OK Google" in the case of Google Now (Marentis 2015). The next step of thinking about the best formulation of the query does not exist anymore, since voice search allows the user to ask questions by using natural language (Costill 2014). As a consequence, the search reaches a conversational mode due to the used filler words (ibid.) and question phrases (Gagnon 2015), because users speak in whole sentences and questions. The impact of this modified way of searching is demonstrated by the growing usage of question phrases year over year, which is almost 61% (Tabeling 2014).

Figure 3:
Growth in Question Phrases Year Over Year (in %)



Source: Based on Tabeling (2014).

The importance of these question phrases differs across devices such as desktop, tablet and mobile, because people use these devices in diverse situations, where different kinds of questions may occur. Moreover, this importance differs across various businesses due to different kinds of demand in these varying fields as well (ibid.). As another consequence of the conversational way of searching, the word input of three to four words at an average is getting longer compared to a classical text input of two words on average (Gagnon 2015). The final steps of scanning through the result page and websites maybe return and perform a different formulated search, do not occur in many cases because of direct answers and the interactive nature of the technology. But due to this, the traffic on websites will decline (Arno 2014).

To enable the voice search technology, changes in the backend processes are indispensable. Recent developments and updates made it possible to put descriptive tags on websites content. This leads to semantic indexed data, which in turn enables the direct answering system of search engines in terms of text or voice output. As a consequence, the database grows in its complexity over time. On the user side, a more precise data input according to filler words and question phrases can be observed, too. This can help the search engine to better understand the real intention of a searchers request (Costill 2014). Furthermore, both personal and environmental data is given to the search engine during voice search as maybe emotions or situational issues around the searcher can be analyzed, too. These aspects implicate that algorithms got and still have to get better in understanding the voice search queries in order to provide direct answers. The Hummingbird update of Google had a great impact on this development. Google´s Rank Brain is the next big step to preserve a better analysis of search queries and in particular new formulated queries, which account for a big part of all requests meanwhile.

Consequences for Digital-Media-Agencies

The development of voice search implicates a lot of changes for digital-media-agencies in the future. There is definitely a requirement to optimize websites for longer and therefore more complex queries (Gagnon 2015) and, what goes along with this recommendation, a prioritized focus on whole sentences, phrases and questions and less focus on single keywords (Marentis 2015). Marketers should also

try to provide direct answers for questions based on all question phrases, which matter in the context of the clients business. Moreover, these answers within the content should be given almost in a natural way (ibid.). Therefore, the way, search engines are likely to deliver information, has to be adapted.

3.5 Internet of Things

Definition and Key Facts

The concept of the ‘internet of things‘ has first been proposed in 1999 by the British technologist Kevin Ashton. He described this trend as an uniquely identifiable interoperable connected objects radio frequency (RTID) technology (Ashton 2009). In this era, personal computers will be more and more replaced by ‘intelligent things‘. The small embedded applications or active sensors of this technology assist people imperceptibly in their activities without distracting or attracting their attention. IBM moreover characterizes the internet of things as a things connected network, where things are wirelessly connected via smart sensors (IBM 2015). Summarized, this technology is due to the connection of the physical world via the internet. Thereby, a rise in the sector of this trend can be discovered according to billions of devices being connected to the internet now, which will increase exponentially in the near future. In 2014, 14.4 billion objects have already been connected to the internet and in 2020 it is estimated to be 50 billion connected devices (Statista 2016b). Referring to an expected world population of 7.6 billion people in 2020, every person is estimated to own 6.6 connected objects on average at this time (Evans 2011). Furthermore, these aspects will lead to a growing market size in this area. In 2014, the reported volume was 601.2 billon U.S. dollars and it is awaited to become 1710.4 U.S. dollars in 2019 (Statista 2016c). Internet of things has been carried out to many and various technical areas, a huge amount of different devices and applications appeared in the last few years. This variety of fields contains for instance energy, networked home, industry, automotive or health care, where lots of exemplary technologies exist. For example, smart homes can involve various kinds of applications such as household aids, heaters, smartphones or -watches and media devices. These devices are connected to each other to maximize the comfort of its inhabitants through individual preference profiles. Statista "depicts a forecast for the number of installed connected objects in smart homes within smart cities" starting

from 174.3 million objects in 2015 and reaching the level of 1073.7 objects in 2018 (Statista 2016d).

Survey Findings

According to the survey, which was conducted at the University of Augsburg, 84 % of the fellow students estimate the trend as important or even very important. Only 16% of them have a different opinion and consider the internet of things as unimportant. 67% of the surveyed think, internet of things will be relevant in the next one to seven years (1-4 years: 27%, 5-7 years 40%). This result emphasizes the importance of the internet of things and that it will influence peoples´ daily life soon. The remaining 33% consider this trend to be relevant only in a more distant future.

Consequences for Search - Frontend & Backend

Both, the frontend and the backend processes of search, receive various changes as a result of the internet of things development. Consequences for the search in the frontend obviously include better information provided by cognitive systems of connected devices. These information can be aware without performing a search as known since yet, as these systems identify needs before people may recognize them on their own. Hence, users get offered a quicker and partly autonomous information search combined with "a higher life quality coupled with more safety, fun and comfort" (Tschäni 2015). But among the search results, users might be confronted to more condensed and uninteresting queries which can confuse the user massively. The remaining described steps of search based on the interaction of humans and a search engine do not exist anymore. The cognitive system of this technology is carrying out search requests or the search itself is becoming unnecessary, because upcoming needs get anticipated and satisfied before.

Another aspect of this trend implies that the user provides more personalized data, which can affect his privacy. More details are shown in following chapters, since privacy and big data are placed on a meta level to be a consequence of the internet of things and influences all presented trends. Finally, search engines must get better at interpreting queries and requests from a connected system to take advantage of the bigger data input such as ‘life-data‘ and ‘real-time data‘.

Consequences for Digital-Media-Agencies

The technical revolution of the internet of things means a lot of consequences for digital-media-agencies as well. First of all, this trend is about to open new markets for search engine optimization and advertising because there is a continuous growth and companies increasingly look at platforms and services helping them to manage and analyze the streams of data coming from multiple sources (The Wall Street Journal 2015). Because everything will be more connected, agencies will have to create new optimized content websites and adapt the system of new specialized search engines to deal with the applications of this technology. Moreover, they have to find a possibility to work with a large quantity of data from variable sources. A prevailing know-how about the internet of things and its functionality is crucial to gain and keep a competitive advantage. According to Google´s chairman Eric Schmidt, “the internet will disappear. There will be so many IP addresses, so many devices, sensors, things that you are wearing, things that you are interacting with, that you won't even sense it" (Zahoor 2015). The challenge for digital-media-agencies and there optimization activity will be to deal with these changes and adapt new basic principles for their work.

3.6 Wearables

Definition and Key Facts

The next trend, shortly named ‘wearables‘, describes computer technologies that one wears on the body or head. They are a concretization of ubiquitous computing, the ubiquity of data processing and a part of the internet of things, because worn devices get connected to each other to a greater extent as well. The main purpose of a wearable device is usually the support of an activity in the reality, such as (additional) information, statements and evaluations (Bendel 2016a). The most common wearables, for example, are the Apple Watch, Google Glass, the Fitbit or the Fuelband from Nike (Stables 2016). A statistic shows that almost two in five internet users will use wearables by 2019 (eMarketer 2015). Due to another statistic, the worldwide wearable market will increase from 2.08 up to 5.8 billion U. S. dollars in 2018 (Statista 2016a).

Survey Findings

By asking survey participants again about the importance of wearables, 30% consider this trend to be important or even very important. 27% think the trend is neither important nor unimportant. 30% of the respondents believe the trend is unimportant, and 13% actually consider it to be very unimportant. Again, the fellow students were asked to rate the relevance of the wearable technology within the next years. 23% consider it to be relevant within the next one to four years, another 40% within the next five to seven years. Hence, the majority of participants think that wearables will be relevant soon. The remaining third of the participants do not believe in wearable relevance within this time, but to be relevant at a later time.

Consequences for Search - Frontend & Backend

Performing a search using wearables changes many circumstances of the search itself. Before the search process starts, people often tend to not have a simple structured question for which they want to have answers. By using a wearable, people also want to search for location-based queries or immediate requirements based on information the wearable deliver, for example the heart rate or the current location of the smart watch (Coleman 2014). The next search process step of remembering the upcoming question is decrepit as people have a wearable right at their side, which is connected with a search engine. Thinking about the best formulation of the query will depend on the fact, whether the wearable also supports voice search. Herewith, this factor does not exist anymore as voice search facilitates this step by using natural language (Costill 2014). The need for a search and also the following formulation of the search query can also be implemented by the wearable itself, when the wearable perceives a need to deliver information for the user, for example a "see a doctor now"-function which guides a user to a doctor, if the heart-rate seems being too low (McClusky 2015). After the information input, the search engine presents the results appearing on the display of the wearable or on a connected device. In the case of an automatically implemented search, the wearable will provide the user with personalized and helpful information updates about the location, people, health, mood, alerts and other situational information (Gibbs 2015, Gardt 2015).

To ensure and enable the wearable search technology, the backend process has to improve in the long run. Wearables will deliver more and also new forms of data as people- and environment-oriented input is given to the search engine in a wearable search situation. Local information, the daily preferences and the mood of the user will be submitted to the backend, too. Search engine results in turn then also have to provide a personal- and environmental-fitting output. Moreover, the algorithms of the search engines have to improve to deliver situational answers which are optimized for each wearable, for example the small screen of a smart watch (Coleman 2014).

Consequences for Digital-Media-Agencies

Client´s websites must be optimized in terms of wearable user needs. New SEO-concepts have to be implemented to gain new target groups and reach new markets. One factor that incites more consumers to buy a wearable is the development of new apps. Once wearables reach the level of mass adoption, because of the increased amount of apps and the following recognitions of the society, digital-media-agencies have to be prepared that a wearable can be the main device for search for many people (eMarketer 2015, Nussey 2015). That implicates that preliminary high qualitative content will be shown on the wearable due to the optimization for smaller screens. The goal must be a very précised content management to be recognized by search engines. This implicates that described products, reviews and recommendation will improve the position of a web page on the search engine result page (Gunther 2014). To gain a competitive advantage, it is necessary to start the preparation soon.

3.7 Big Data

The term ‘big data‘ characterizes the large amount of data, which can be stored, processed and evaluated to gain new insights and useful information (Bendel 2016b). Big data can be described with four dimensions: volume, velocity, variety and veracity. Volume means the data´s scale, whereas variety paraphrases the diverse data forms. Veracity underlines, that data can be uncertain and moreover, velocity describes streaming data analysis (IBM 2013). On the whole, these four dimensions influence the trends described before. The use of wearables, for example, will lead to deeper insights for big data companies as well as for search engines, which they will use for their profit in turn. This is due to the new variety of data according to new “life-

data” and mood based input (Maddox 2016). The amount of data will increase from around eight in 2015 up to 35 zettabyte in 2020 (Reuters 2012). This is why the right big data management will be more and more important and necessary to deal with to achieve and keep a competitive advantage.

In the backend processes of search engines, big data solutions will influence the whole search process. Increased amounts of data influenced the algorithm of search engines since they originated. The development of big data will lead to better and thereby more personalized search results, because of the new amount of data that got processed, evaluated and presented by an improved crawling process in the backend of the search. The simplification and personalization will be adjusted to new devices and habits of the user (Lohrfeb 2012, Finley 2013).

Agencies having a big data insight are able to better understand their client´s needs and wants. Furthermore, offering big data solutions can be a successful business model. If an agency wants to offer something of that kind for customers, finding the right employees will be a challenge, because of the difficulty of understanding causal and statistical coherences. Big data specialists must be rewarded for their skills to ensure that they will stick to the agency. Big corporations such as Amazon, Google and Microsoft have a data-advantage, because of the size and the amount of data they receive in their daily business. Moreover, finding the right employees is easier for them because of their employer branding and the higher wages they can offer to potential specialists. This is why potential employees tend to work for bigger companies and corporations (Lies 2016). Due to the high value of data, it must be protected as good as possible. A recent study showed that three out of four companies try to protect their emails and data with extra codes (Bitkom Research GmbH 2015b).

3.8 Privacy

Internet privacy can be described as "the ability of individuals to control the flow of information and have reasonable access to data generated during a browsing session" (Reputationix 2015). As mentioned above, the development of the internet leads to an increased amount of data and to an advantage for companies, states, or institutions which have a big data insight. Also the search engine users gain an advantage due to more personalized and simplified results. The trade-off between

privacy and big data beside the advantages of an improved search can be described in terms of data that can be abused for negative or unwanted reasons (Maddox 2016). In 2013, Edward Snowden revealed the acting of the NSA as they used the program "prism" to spy information from people, countries and societies around the world. This led to a broad global and public discussion about privacy (Reinbold 2015). As a consequence, new business models based on the idea of internet privacy appeared such as the messaging app Threema or other new social networks. Moreover, the Tor network had a boom after this scandal, a new browser form hiding all user data and not storing information about a searcher and the requests (Beuth 2013).

The backend process of the search engine is influenced by the trend privacy another time. On balance, there is a big trade-off between having personalized results and having internet privacy. The search engine needs information and data to improve. Without them, it is actually quite difficult for algorithms to provide better results. Furthermore, without saving previous search queries, the development of the search engines would be way slower.

Hence, agencies must protect data of their clients and should adapt privacy to be a possible business model, for example by offering a safer data transfer, spy protection software or consultation. For this kind of work, agencies have to keep their employees informed about the current state of this topic. Right now, there is the possibility of new laws coming or rights of the big data company Facebook getting cut. Herewith, sending information about European users to the US government could be prohibited (Reinbold 2015). Nevertheless there is a market for new solutions and hence, offering these solutions can create an advantage for the customer.

4 Implications for Theory and Practice

The trends discussed and presented previously are 'game changers' for the general public, all sorts of companies and especially for digital-media-agencies, such as xpose360. Based on the trends, agencies need to adapt completely changed user habits by focusing on four different key topics. On closer examination of the clients´ websites, xpose360 has to (re)create or optimize their structure for various devices due to usability and responsiveness. Furthermore, the agency should recommend search engines' advices in optimizing websites. Xpose360 should concentrate on content on the clients´ websites, too. Continuously creating relevant, useful and high qualitative content as well as optimizing content queries for different technologies are just one part of this topic. Agencies should keep in mind that both, the creation and the optimization of the content, need to be done in different channels. This is based on various trends and platforms, agencies are operating in. With regard to the topic ‘background data’, xpose360 should help enhancing the protection of their customers’ privacy, because the linkage of different devices also implicates security gaps. Focusing the range of services on location-based optimization as well as understanding Google´s algorithm updates and their influences supports the successful dealing with a permanent increasing amount of available background data. For agencies with a big data insight, it is easier to understand their clients’ needs and to act accordingly. Additionally, xpose360 should invest in new technologies to deal with a mass of unstructured data in the next years. In general, the agency needs to update clients’ information in Google My Business or other online business directories and keep it in mind continuously. Obviously it requires constant checking to satisfy the clients’ requirements. Nevertheless, xpose360 cannot compass improving employees’ skills or hiring new specialists due to the technological progress currently taking place. Xpose360 should keep the various trends and platforms in mind constantly. Operating across the technologies will help to reach the corporate objectives.

The conducted research eventuates in several consequences and implications for practice, but nevertheless some unavoidable limitations exist, too. Due to the time limit, the survey among fellow students was conducted on a small size of students at the business school of the University of Augsburg. In order to generalize the results for all students at the university, the survey should have been conducted with more

participants from different faculties. To generalize the results for the whole German population, different kinds of groups of persons should have been asked. These could be, for instance, different age groups, educational achievements or occupation groups. Furthermore, only a few experts answered the survey. To gain high-quality content, much more experts should have been taken into account. Instead of a questionnaire in a written form or by phone, an online-survey could have been better. The authors focused in this research on seven premeditated trends. Hence, other possible relevant trends could have been disregarded. This might have an impact on the classification of the trends or on the results from the surveys.

Addressing with future trends in SEO is a very complex topic. On the one hand, the trends are bound together and interact permanently. The updates and adoptions of search engines on the other hand develop by analogy with the trends. Due to constantly new technologies and opportunities, there are continual quick variances and many different aspects, too. These have to be considered by currently accommodate oneself to the newest demands on the market. By being one of the first successfully implementing new technologies, agencies will gain a competitive advantage. Based on this paper, digital-media-agencies can focus on the – from the perspective of the authors – most important trends in SEO within the next seven years. It helps agencies to think ahead and being proactive in defining medium and long-term corporate objectives. Therefore, agencies can, in a next step, question clients whether they would be willing to invest before handing in a special trend. Another possible opportunity for digital-media-agencies would be identifying clients, which could be interested in a particular trend and offer a new service based on this trend to them. Future research can draw on the limitations mentioned above. A higher number of respondents chosen randomly from the population would cover their opinion in a better way and could find broad conceptual applicability. Focusing on more or other trends could lead to new and unexpected points of view.

5 Conclusion

In the course of this seminar paper, the research question and the goals of the seminar were introduced in the first chapter. The history of search engines, their relevance in daily life and their exact backend processes were shown in the chapter ‘background’. The way people interact with search engines at a desktop to receive an answer for a query was demonstrated in this chapter as well. In the next chapter, seven possible future trends in SEO were ascertained. These were determined by own surveys and literature research, which included specialized blogs and websites. Based on these resources, it was possible to select five of the seven trends due to their perceived relevance within the next seven years. The trend ‘mobile’ was seen as the most relevant trend, followed by ‘place of search’, ‘voice’ and ‘internet of things’. These technologies put the currently least relevant trend ‘wearables’ behind. The remaining two trends ‘big data’ and ‘privacy’ were not considered as trends compared to the five technologies, hence, they form a framework for the technologies. Afterwards, the trends were considered closer by defining them, showing their impact in the surveys, demonstrating their influence on the search process in the frontend and backend plus proving their consequences for digital-media-agencies. Thereby, the main goals of indicating future trends and presenting recommendations based on them got realized in detail. An overview about these consequences and limitations of this paper were shown in the last chapter as well as implications for agencies and ideas for future research. Altogether, this paper demonstrates the complexity, agencies such as xpose360 have to deal with, if they take these trends into account. Hence, they are forced to stay up-to-date and adapt new requirements to gain a competitive advantage. Considering the presented recommendations will help to achieve this goal.

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List of Appendices

Appendix A: Questionnaire of the Survey

Liebe/r Teilnehmer/in,

herzlichen Dank für Ihre Bereitschaft, an dieser Umfrage zum Thema „Trends im Suchmaschinen-Marketing“ teilzunehmen.

Es handelt sich hierbei um ein Forschungsprojekt der Universität Augsburg in Kooperation mit der Online-Marketing-Agentur xpose360.

Die Beantwortung der Fragen wird nur ein paar Minuten dauern. Wir versichern Ihnen, dass sämtliche Angaben streng vertraulich behandelt werden. Alle Antworten werden anonym erfasst und nur in aggregierter Form ausgewertet, sodass keine Rückschlüsse auf einzelne Teilnehmer möglich sind, außer Sie stimmen dem explizit zu.

Es ist besonders wichtig, dass Sie den Fragebogen vollständig und bis zum Ende ausfüllen – nur vollständig ausgefüllte Fragebögen können ausgewertet werden.

Die Ergebnisse werden für wissenschaftliche und praktische Forschungszwecke verwendet und nicht an Dritte außer an die Agentur xpose360 weitergegeben.

Wir bedanken uns bei Ihnen für Ihre Unterstützung!

Für welche Dinge nutzen Sie das Internet? Wie ist Ihr Umgang mit dem Internet?

Gehen Sie nun 5 Jahre in die Zukunft. Wie sieht es Ihrer Meinung nach dann diesbezüglich aus?

Welche Entwicklungen wünschen Sie sich für das heute bestehende Internet, um zukünftig Ihr Leben damit komfortabler gestalten zu können?

Nachfolgend haben wir einige –aus unserer Sicht – relevante Trends aufgelistet. Bitte geben sie an, für wie wichtig Sie die jeweiligen Trends erachten und in welchem Zeitraum diese relevant werden könnten.

Mobile

Mobile Endgeräte (z.B. Smartphones) sind zunehmend selbstverständlicher Bestandteil der Internetnutzung und Ausgangspunkt für unsere Websuche. Unternehmen müssen folglich ihre Webaktivitäten (Websitegestaltung, Werbemaßnahmen, etc.) der mobilen Nutzung anpassen. Wie bewerten Sie diesen Trend?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Voice

Die Sprachsteuerung umfasst die Sprachein- sowie die Sprachausgabe und bezeichnet die Übermittlung von Befehlen an technische Geräte, die per Stimme erfolgt (Siri, S Voice, Google Now, etc.). Inwieweit könnte diese Entwicklung für unser Suchverhalten im Internet relevant sein?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Apps

Wie wichtig sind Ihrer Meinung nach Apps im Rahmen der Informationssuche im Internet?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Place of Search

Die "Orte" unserer Websuche werden immer vielfältiger, es gibt zunehmend Alternativen zur Google-Website/ Interface, um an Informationen zu kommen. Wie stark werden andere und neue Suchfunktionen, wie beispielsweise über Facebook oder Pinterest, unser Suchverhalten beeinflussen?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Internet of Things

Neue Technologien ermöglichen mittlerweile einer Vielzahl an Gegenständen unseres Alltags die Vernetzung mit dem Internet, um so selbstständig mit Personen oder anderen Maschinen zu kommunizieren (Informationsversorgung, automatische Bestellungen, Beleuchtung-/ Heizungsprogramme, etc.). Welchen Einfluss hat diese Entwicklung auf die Informationssuche im Internet?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

New Channels

Inwieweit erscheinen Ihnen neue Kanäle, über die kommuniziert oder auch gesucht wird (Apps oder Anwendungen, mit denen verstärkt nach Mode, Jobs, bestimmten Hobbies etc. gesucht wird, sowie deren Influencer wie Youtuber oder bekannte Intstagram-/Pinterest-Nutzer) als so relevant, dass sie eine Veränderung in unserem Suchverhalten bewirken können?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Content Marketing

Unternehmen setzen bei den Inhalten ihrer Websites, Unternehmensblogs, etc. auf hochwertige Information, um dem Leser echten Mehrwert zu generieren und die Usability zu steigern. Für wie wichtig erachten Sie diesen Aspekt um im Suchprozess einen Vorteil zu erzielen?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Wearables

Smartwatches, Fitnesstracker oder Kleidungsstücke mit Zusatzfunktionen sind bekannte Beispiele für Computertechnologien, die am Körper zur Unterstützung einer realen Tätigkeit (durch Informationen, Auswertungen, Anweisungen, etc.) getragen werden. Wie bewerten Sie diese Entwicklung?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Big Data

Kann durch die große Menge an lokalen und persönlichen Daten, die durch unsere Vernetzung mit dem Internet verfügbar werden, eine Veränderung unserer Internetsuche geschaffen werden? Wie wichtig sind diese Daten somit für unsere Websuche?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

Augmented Reality

Technologien, wie beispielsweise Datenbrillen, liefern dem Anwender zusätzlich zu den realen Wahrnehmungen weitere Zusatzinformationen in Echtzeit. Die erweiterte Realität ist also eine Kombination aus wahrgenommener und vom Computer erzeugter virtueller Realität. Wie schätzen Sie die Relevanz solcher Technologien vor allem im Bezug auf die Informationssuche im Internet ein?

sehr wichtig	eher wichtig	weder noch	eher unwichtig	sehr unwichtig

1 - 4 Jahre	5 - 7 Jahre	8 - 10 Jahre	11 - 15 Jahre	> 15 Jahre

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