Trends in Search Engine Optimisation: The Role of Voice Search

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Search engine optimisation is an important aspect for every business. There are different features and methods to it and they evolve over the years as there are created new algorithms and software updates. At the moment, voice search is a topical matter and there are done many predictions and speculations of the future of it. This makes the subject interesting to research further.

The purpose of this thesis is to study what are the current trends in SEO, how voice search affects SEO and what is the role of voice search now and in the future. It will be also studied if it is true that voice search will grow as popular as traditional search and if it eventually be the only way of searching on search engines. The theme is limited to search engine Google, voice search optimisation and the future of voice search. Meaning that there will be introduced the technology enabling voice search but not explained thoroughly how voice search is optimised for different digital assistants nor other software applications. Search Engine Advertising (SEA) is excluded from the research because it is a small part of Search Engine Marketing (SEM) and the main focus is only on unpaid organic search SEO.

The theoretical part concentrates on SEO trends on Google and voice search in the USA and Europe. Whereas, in empirical part is highlighted the situation and future of voice search in Finland.

To answer the research questions there was conducted a qualitative research by interviewing four SEO professionals. The professionals were selected because of their long experience in SEO and marketing field. The interviews were carried out on 31 March 2020, 2 April 2020 and 8 April 2020. The topic of the thesis is rather new and therefore there had to be gathered more in-depth data which qualitative research method enables to do.

It was found out that there are many SEO trends in search engine optimisation. However, the trends that were mentioned now to be the most important ones are high-quality trustworthy content, featured snippet optimisation and user experience. As the most important aspect of SEO was seen content optimisation. It was also found out that voice search does not impact traditional SEO considerably. There are certain practises that work better for voice search but voice search optimisation was rather seen as a part of SEO than alone by itself. The last finding was that voice search is not yet popular in Finland, technology is not advanced and there is not much that companies can do at the moment to optimise websites to voice search results. It is also important to say that the voice revolution has not begun yet.

Keywords SEO, voice search, SEO trends, Google, Virtual Assistant

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1 Introduction

Search engine optimisation (SEO) has been an important part of a companies' website optimisation since 1997. Until now websites has always been optimised for written search queries. However, there are articles stating that the voice search will eventually be as popular as traditional written search. For example the article "How to optimize for voice search in 2020" on web development company PSDCenter's website is stating that already by 2020 voice search will be as popular as 50% of all searches (Baker 2017; PSDCenter 2019.)

To be able to search online data you need to use a search engine. There are many search engines on the market such as Bing, Yahoo!, Yandex Ru and Google. However, one of them is above them all. Google has around 88% of the market share which makes it the most used search engine in the world (Statista 2019). This thesis will concentrate only on Google as a search engine. SEO trends and voice search optimisation will be also researched from Google's perspective.

The interest of mine for SEO already sparked in 2018 after completing course "Digital marketing in Modern Business". The course covered topics such as content marketing, SEO, email marketing and mobile-marketing. There was also another interesting marketing course that I took called "Marketing and Networks". In the course we covered some new trends in marketing such as Artificial Intelligence and Virtual Intelligence. These topics are rather new and machines as well as technology are constantly developing. Therefore, when I was thinking of my thesis topics I was trying to come up with something new and interesting. The end topic for my thesis got formulated after researching new technologies in marketing and discussing them with my thesis supervisor.

When I was researching deeper voice searching I realised that I am a business student who does not use any type of voice assistant nor ever had used voice search. In addition, I do not know anyone using the technology mentioned above. So it was interesting to find out when I was conducting preliminary research that in 2020 it is expected that 50% of all searches will be done by voice search. Since discovering the finding, I really wanted to research the topic even deeper and to study the topic thoroughly. I was interested to know about the growing possibilities of voice search and how or if it will affect traditional SEO.

1.1 Research objectives and limitations

The goal of this thesis is to study what are the current trends in SEO, how voice search impacts on SEO and what is the current situation and future of voice search. Based on the preliminary research that was conducted, it will be studied if it is true that voice search will grow as popular as traditional search and if it eventually be the only way of making searches on search engines. To gather information will be used books, e-books, articles, blog posts, video material and interviews with SEO professionals.

As it was mentioned in introduction the study will exclude all other search engines than Google. There will be done research only of the trends in SEO for Google. Voice search will be defined as a concept and explained how it is optimised for the search engine. There will be also mentioned most popular digital assistants, speakers and other voice technology devices. However, the main objective will be kept on voice search and what is its role in SEO rather than concentrating on the technology that enables it. Meaning that it will be explained in general how voice search optimisation is done for Google excluding specific optimisation techniques for different digital assistants, speakers or other voice search software devices.

There will be also excluded from the research Search Engine Advertising (SEA) because it is a small part of Search Engine Marketing (SEM) and the main focus will be only on organic search in other words unpaid SEO.

1.2 Important concepts

In this subchapter are explained important concepts that will be mentioned later in the chapters so that the reader can easily understand them from now on.

HTTP is an acronym for "Hypertext Transfer Protocol". It is needed to transfer data over the web. It is used to send and receive webpages and files on the internet. (TechTerms a, 2015.)

HTTPS stands for "Hypertext Transfer Protocol Secure" which has the same function as HTTP. The difference is HTTPS uses secure socket layer (SSL) for security purposes. (TechTerms b, 2015)

URL stands for "Uniform Resource Locator". It is the address of a website, webpage or a file on the internet. For example Google's URL is "www.google.com". (TechTerms c, 2015.)

Web Page is a document written in hypertext markup language (HTML). Web pages are what make up the Web. (TechTerms d, 2015.)

Website is a collection of webpages. For example "Asos.com" is a website which consists of many web pages on that site. (TechTerms e, 2015.)

XML Sitemap is a text file marked up with tags that identify types of data. It is used to make the information on the website machine-readable. It also provides a list of URLs on the site to search engines. (Brown 2019.)

Web Hosting Provider is a business that provides a service that allows organizations and individuals to post a website onto the Internet. (Website.com, s.a.)

Schema Markup is a form of microdata that helps to structure a web page so that when it shows up in the search results it has enhanced description (Price 2019).

1.3 Thesis structure

This thesis is research-oriented using qualitative research method. It follows traditional thesis structure which means that it starts with cover page, abstract and table of contents. Following with chapter 1 Introduction in which is explained the objectives, limitations and written a process description. There has also been included in the introduction important concepts explained to help the reader.

Continuing onto theoretical chapters 2 Search engine optimisation, 3 Trends in search engine optimisation and 4 Voice search. This theoretical part includes theoretical information of the topics with reference to professional literature and other sources.

Then comes empirical part chapter 5 Methods of the research and chapter 6 Results. Chapter 5 introduces the research method used with justification, target of research, description of implementation as well as data and types of analysis used. Chapter 6 concentrates on presenting the results of the research according to the principles that were introduced in chapter 5.

The last chapters 7 Conclusions and 8 Evaluation are in discussion part of the thesis. Chapter 7 includes analysation of the results as well as conclusions of the research. Trustworthiness of the research and self-evaluation of the thesis project and own learning are included in the last chapter 8.

2   Search engine optimisation

In this chapter there will be first defined search engine and how it works. Then there will be explained in-depth the process of search engine optimisation. There will be covered technical aspect, relevance and authority parts of SEO.

2.1   Search engine

Search engine is a service that allows users of the internet to search for content from the web (WWW). A user enters keywords or key phrases into a search engine and receives a list of online data like websites, videos or images. (Techopedia s.a.)

The list of online data answering the search query is called search engine result page (SERP). SERP includes organic non-paid results and paid results. The SERPs determine how a website appears on a search engine's first page. (Backlinko a, s.a.) Below in Figure 1 is showed a screenshot from Google's result page. The first result is a paid result which is marked with red circle around the word "ad" and below it an organic result marked with yellow square. The organic result "www.squarespace.com" has achieved its high ranking position through good SEO. High ranking means being in top results of the Google's result page.
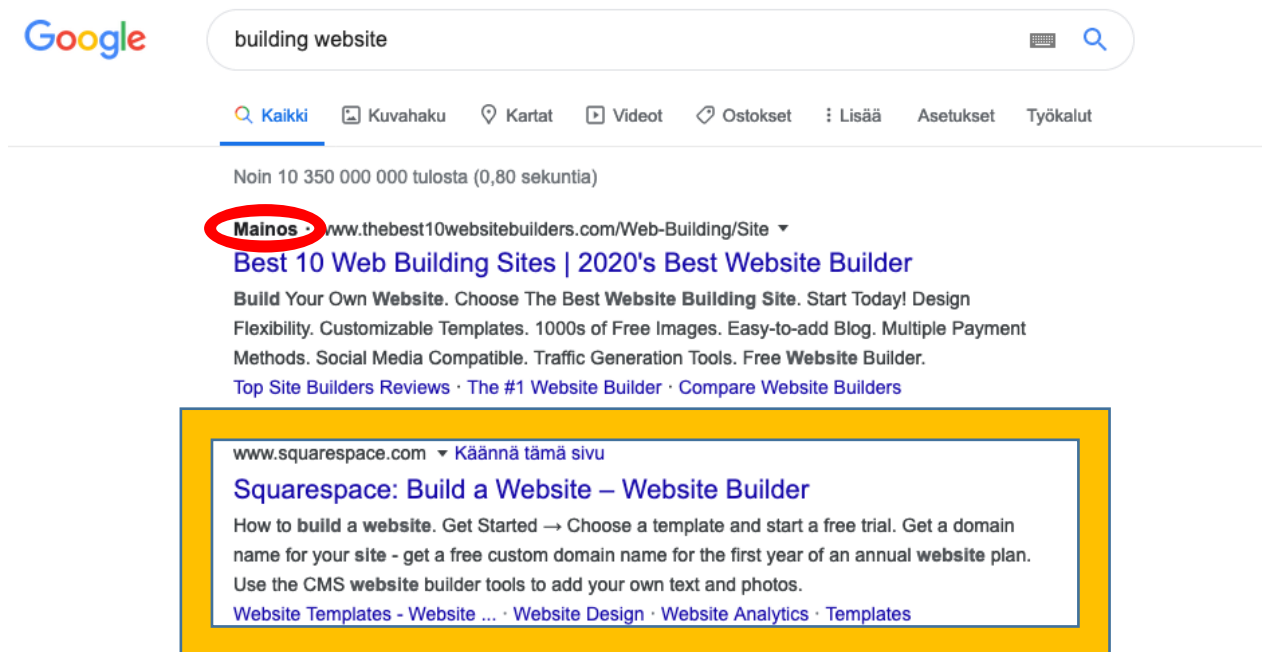

Figure 1. Screenshot of Google's result page (Google a, 2020)

There are many different web search engines for example previously mentioned Google, Yahoo! and Bing. However, they all work the same by using a three phase approach to

manage, rank and return search results. The three phases are called crawling, indexing and ranking. (Hindle 2012.)

Crawling means that a team of robots called crawlers or spiders search continuously for new or updated content on the internet and repeatedly copies it. Next process is indexing which is storing and organising the information that crawlers have discovered in a big database of all content. The last phase is ranking. Ranking happens after the information was found and stored. Ranking organises search results by relevance. In general, the search engine believes the higher the website is ranked the more relevant the search result is to the query. (Enge, Spencer & Stricchiola 2015, 38-40.)

It is important to be ranked high on the first page of SERPs because of various reasons. According to Brian Dean (c, 2019), an SEO expert and a founder of Backlinko, Google's first organic result has an average click-through rate (CTR) of 31,7%. It means that around third of the users who view Google's result page clicks on the first result. This leads to the fact that the first result also has 10 times better chance to be clicked on than the last (10th) result of the SERP. (Dean c, 2019.)

2.2 Framework of search engine optimisation

Search engine optimisation is the process of increasing quality and quantity of website traffic, through non-paid search engine results. It is a practice for optimising the website so that a search engine will show it as a top result for searches of a certain keyword. (Patel a, s.a.)

As it is illustrated in the Figure 2 below, there are three pillars of search engine optimisation: technology, relevance and authority. The technology pillar concentrates on the technical support of a website, relevance focuses on the content and authority stands for the trustfulness of the site. (Adams 2015.)
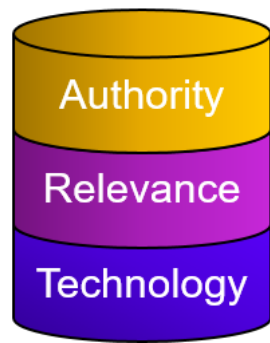
The Three Pillars of SEO

Figure 2. Three Pillars of SEO model (adapted from Adams 2015)

2.2.1 Technology

The main purpose of technical SEO is to make sure that crawlers can crawl and index the content of the website. That means for getting higher in the search results the website should be secured, mobile-friendly, fast, have non-duplicated content, have XML sitemap and have structured data markup. (BigCommerce s.a.)

If the URL of the website starts with https instead of http it means it is secured with Secure Sockets Layer (SSL) Certificate. SSL is a security technology which allows sensitive information such as social security numbers, credit card numbers and login credentials to be sent securely. To get an SSL Certificate, the company must go through a validation process for it. Google prefers in ranking HTTPS over HTTP because the website indicates that it secured and has been certified by a third party. It is also important for Google that the users can be guaranteed the website encrypts their information more securely. (Digicert 2014; Hernandez 29 October 2019.)

For a website to be mobile-friendly there are three main ways to configure it. Of all three ways Google (b, 2019) recommends to use responsive design because it is the easiest design pattern to implement and maintain. Responsive websites are designed to fit any screen and to be easy to use, no matter of the device a user is using. (Moz a, s.a.)

According to Daniel An (2018), Google Global Product Lead, the quicker the website is the lower the bounce rate it will have. Google made a research of page loading time and according to it loading time of 1-3 seconds have probability of 32% increased bounce rate whereas loading time of 1-5 seconds already increases probability of bounce rate for 90%. Therefore, every website should aim for the lowest possible loading time to decrease bounce rate. Bounce is a single-page session on the site and bounce rate is single-page

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sessions divided by all sessions, or the percentage of all sessions on the site. (Bird 2016; Google Analytics s.a; Google/SOASTA 2017)

There are several factors affecting website speed: the browser, device, web hosting provider and content on the page. Web hosting provider is a business that provides the technologies and services needed for the website or webpage to be viewed on the Internet. A website needs a web hosting provider to be available for users of the web. Before making any changes to upgrade the website speed it is needed to focus on the visitor's needs. (Website.com s.a.)

Majority of the times website owners do not create duplicated content intentionally. Duplicated content is damaging for technical SEO because it can confuse the search engines. The content which can be found on the web on multiple URLs is called duplicated content. The way it can confuse search engines is that if there are more than one URLs that are showing the same content, the search engine does not know which URL to list higher in the search results. As a result, search engine might rank both URLs lower and give preference to other webpages. (Moz e, s.a.)

Extensible markup language (XML) sitemap is a file that is submitted to search engines containing important webpages of the website. It is good for SEO because it helps search engines to crawl the most important content as well as to understand the structure of the website. It tells search engines the location of a page on your website, when it was updated, the updating frequency and the importance of the page. (Quick Sprout 2019.)

Structured data markup is a code which is possible to add to a website to help search engines to understand the content on it. This data helps search engines index the website more effectively and provide more relevant results. (BigCommerce s.a.) Schema markup is a structured data markup that is created by Google, Microsoft, Yahoo and Yandex together, to structure website in a way that search engines can understand it better. It splits the data to smaller pieces so that it would be easier to interpret for search engines as well as to help the users by making the content visually more appealing in SERPs. (Schema.org s.a..)

Figure 3 shows an example of what's the difference in a search result in Google's result page with and without schema markup. The first result pointed at with yellow arrow is with schema markup and the second one pointed at with red arrow is without schema markup. In the first one you can see clearly there is more information given such as rating,

preparation time and calories which makes this result more appealing for the user and can increase probability of a user clicking on it.
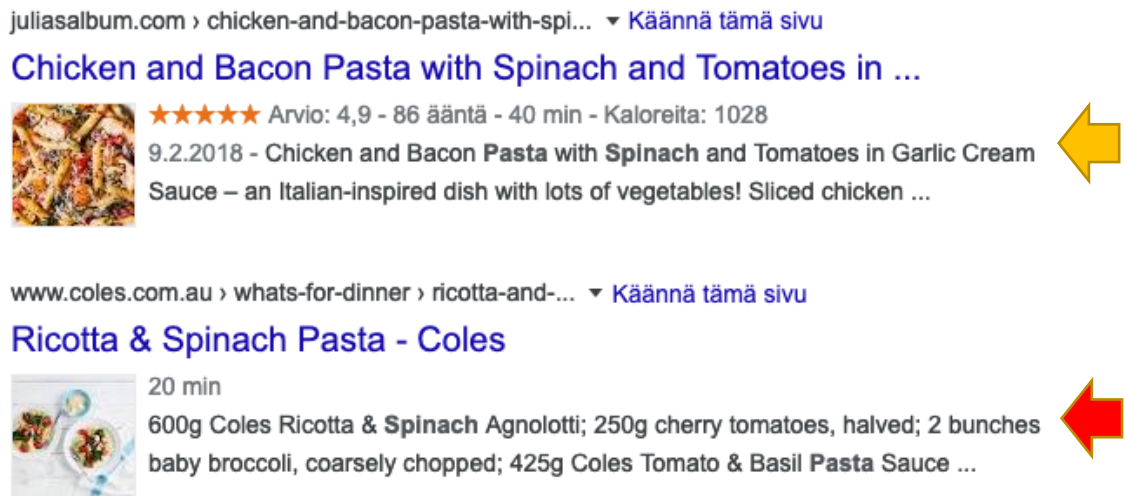

Figure 3. Screenshot of Google's result page (Google c, 2020)

2.2.2 Relevance

Relevance in SEO looks at different elements of the website content to ensure it can be accurately interpreted by search engines. Therefore, the content needs to have optimised title tags and meta descriptions, keywords, headlines, properly structured main content and sufficient topical focus on a single page. (Adams 2015.)

When a user makes a search on a search engine, the title tag is the clickable headline that the user sees at the top of each result on SERP. Title tags help search engines understand what the page is about. To optimize the title tag properly it needs to be under 60 characters long and to have one to three keywords. The keywords should be targeted at the beginning and specific what the content is about. (McCoy 2018.) The screenshot below (Figure 4) shows a title tag circled with a yellow colour.

Figure 4. Screenshot of Google's result page (Google d, 2020)

Meta description is the small snippet of text that occurs under the title tag and URL (circled in red in the screenshot above). While Google has said that meta description does

not directly effect on ranking higher on the SERPs, it explains what the website is about to a user and therefore can affect click-through rate (CTR). That leads to possibility to have an indirect impact on rankings. To optimize the meta description it should be under 160 characters long, describe shortly what the content is about and include relevant keywords. (McCoy 2018.)

Keywords are ideas and topics that define what the content is about. Keywords are important aspect of the content relevance in SEO because they are the words and phrases that searchers enter into search engines and how search engines find the content of the websites. For optimising the keywords there has to be done keyword research. Keyword research is a core SEO task that includes identifying popular words and phrases users enter into search engines. There are head keywords that are singular words which have high search volume and long-tail keywords that are specific combination of several terms. (Moz b, s.a.; Moz c, s.a.)

The figure below (Figure 5) shows the amount of monthly searches compared to the number of keywords used in the searches. The top 10.000 keywords are being searched the most, however they only make up 18,5% of the total search traffic. Furthermore, there is a big competition for the top keywords. The competition for long-tail keywords is lower and therefore it is easier to rank high on the SERPs. Users with a more specific search are also more likely to know what they want. Meaning that the users are more intentional in their searches which results in better conversion. (Moz d, s.a.)
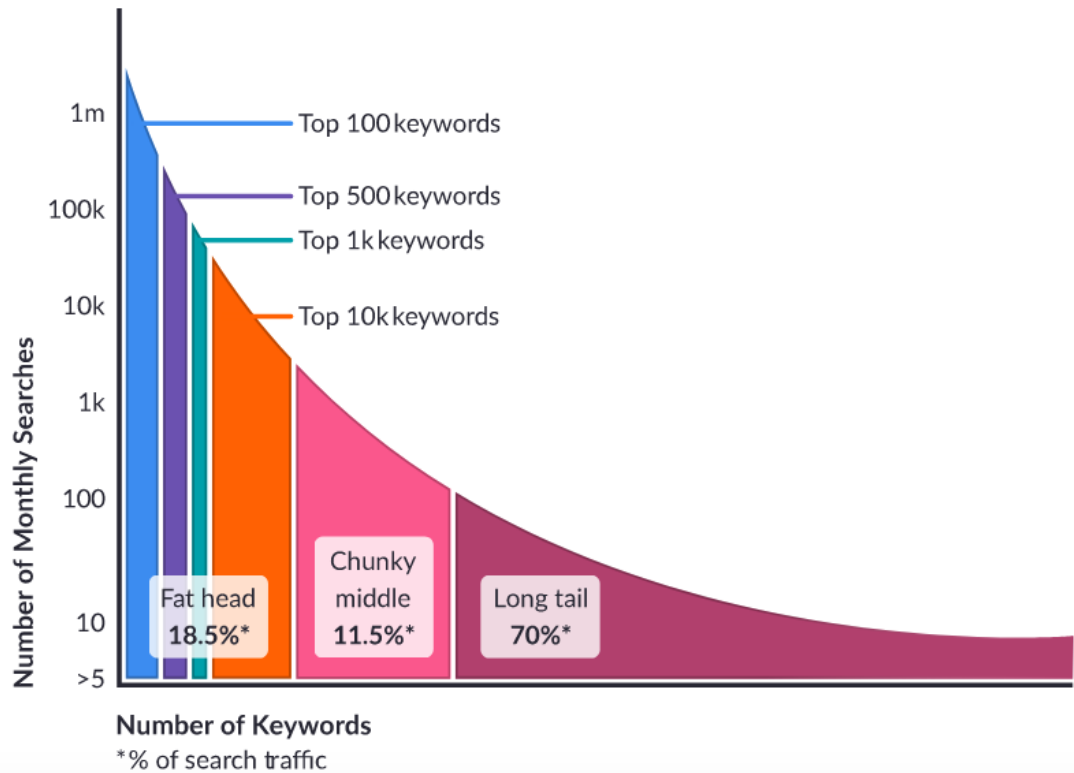
Figure 5. Keyword Research. The Search Demand Curve (Moz d, s.a)

A simple example of the search differences are shown below (see Figure 6 and Figure 7). When searching with a long-tail keyword "climbing shoes for women" and searching with just a keyword "shoes", the results are completely different. If a website wants to rank high for some keyword it needs to contain specific long-tail keywords to get the wanted position in SERPs.
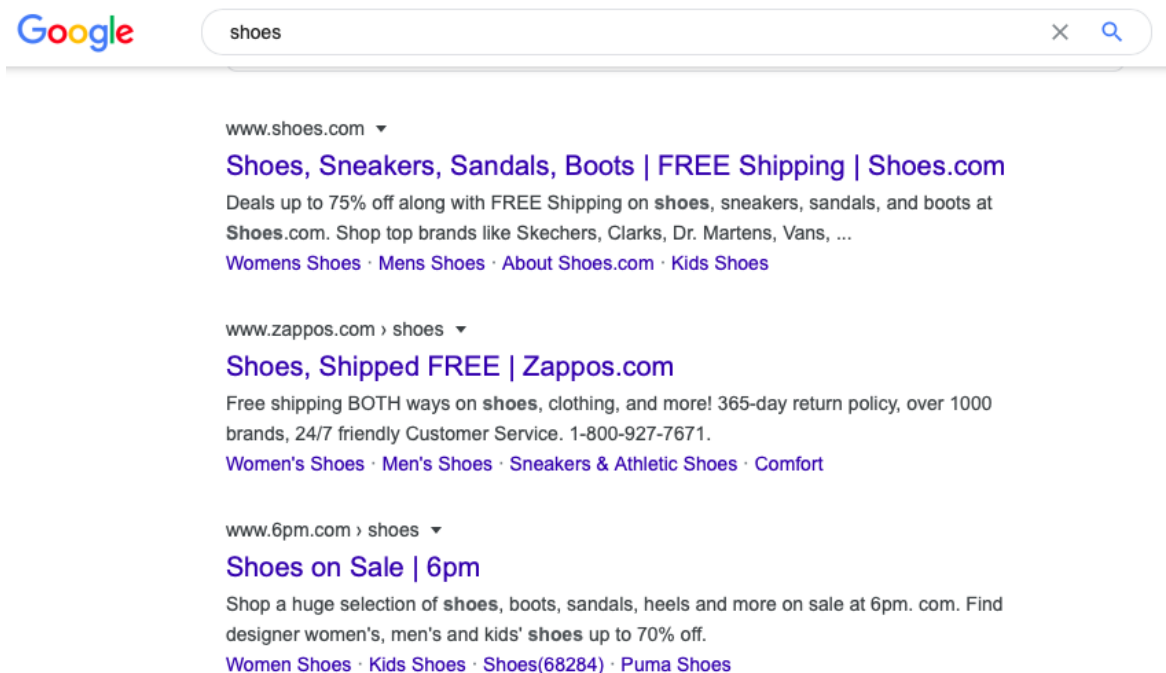
Figure 6. Screenshot in Google's result page. (Google h, 2020)
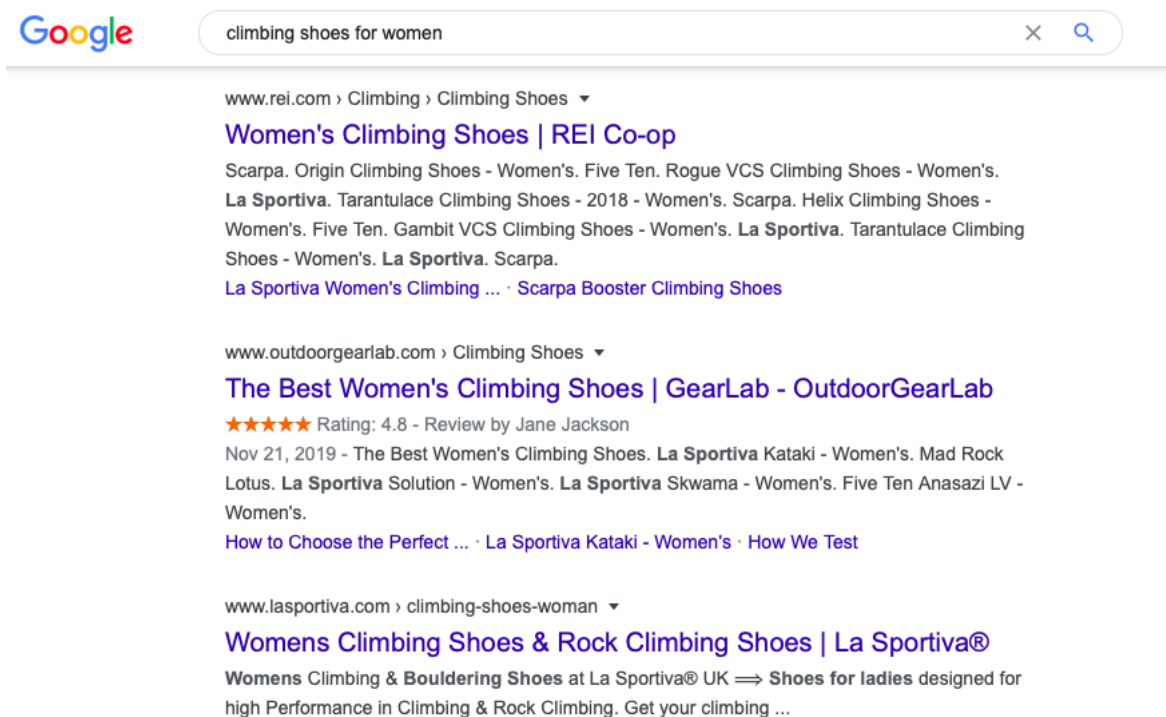
Figure 7. Screenshot in Google's result page. (Google i, 2020)

Content on the webpage needs an interesting for humans and relevant for crawlers headline to perform well in search engines (Patel b, s.a). Online readers tend to have attention span of 8 seconds (Digital Information World 2018) and therefore for optimal readability, content should have 1-4 long sentences paragraphs and sub-headers or visuals after every 150-300 words to break the content for the readers. It is also important

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to have enough topical focus on a single page to improve semantic signals in other words search accuracy. (McCoy 2018; Sanders 2016.)

2.2.3 Authority

Authority defines how trustful the website is. There are three authority levels in SEO. The levels are domain authority, page authority and link authority. (ContentKing s.a.)
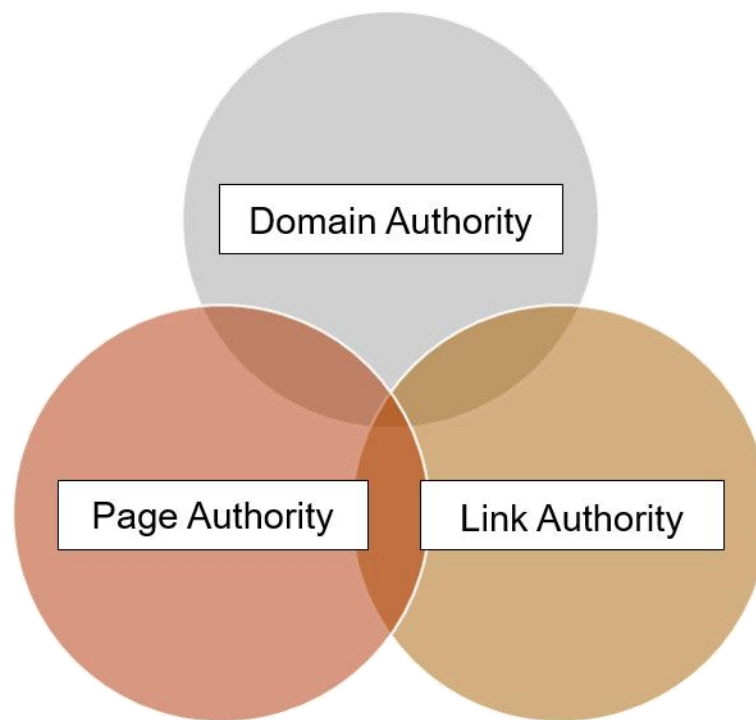
Figure 8. Three Authority Levels of SEO

Domain authority means domain's ability to rank in SERPs, consisting of a variety of signals that indicate that a website is of high quality and that it can be trusted. There are two factors affecting domain authority: age and trust and popularity. The domains that have been existing long, haven't been used to trick search engine algorithms and have good quality content and backlinks, have higher age and trust element. Backlink is a hyperlink that links from a webpage back to one's own webpage or website (Beal s.a). Having many quality backlinks and unique linking domains affect the popularity factor. The more quality backlinks and unique linking domains the domain has, the more popular is the domain and have higher domain authority. (ContentKing s.a.)

Page authority is a metric of a page's ability to rank. It is based on three factors: age and trust, the amount of value received from links and the freshness of the last update. As in domain authority age and trust factor means that the longer the page exists and has good

quality content with high quality backlinks, the better the page will rank for popular keywords. The amount of value received from the links increases authority of the page by having good quality internal and external links pointing at the page. Freshness of the last update means having new and up-to-date content on your page which is the last factor affecting the page authority. (ContentKing s.a.)

The link authority is an indicator of the ranking power a link carries over. It is based on four factors: nofollow attribute, page authority of the page linking out, number of links on the page linking out and location of the link on the page linking out. Nofollow attribute communicates to search engines not to follow the link and crawl the content. Nofollow links are part of natural link profile and they increase link authority level even though they alone have less link authority. Page authority of the page linking out matters because the more authority the page has, the more link authority can be passed on to another page. The amount of links on the page linking out impacts on the link authority because if a page has many links the authority is divided by all the links on the page and therefore every link gets less link authority from the linking page. Lastly, the location of the link on the page linking out impacts on the authority by giving more value to a link that is within the content than to a link that is in the footer. (ContentKing s.a.)

3 Trends in search engine optimisation

In this chapter will be covered SEO trends. SEO is an ongoing process. The market changes, algorithms changes and the competition changes constantly. It is important to research regularly the trends and to be aware of what works today might not work tomorrow. (Duncan 2015.) Even recognized SEO professionals cannot predict what is going to happen next in SEO.

The figure below (Figure 9) is composed based on a secondary research on eight articles of SEO trends in 2020. There was taken into account opinions of eight SEO professionals. Each bubble stands for a trend mentioned by the professionals. The size of the bubbles indicate the amount of times they were mentioned. The more often a trend was mentioned, the bigger the bubble is. The trends that were mentioned the most were voice search optimisation, featured snippets, E.A.T optimisation and content optimisation. Even though voice search was one of the most mentioned trends, it will not be explained in this chapter, because it will be covered thoroughly in chapter 4. The trends that will be covered in this chapter are featured snippets, E.A.T optimisation and content optimisation. All of them were mentioned by five or more professionals out of eight. Therefore, the trends mentioned above are selected to be researched further.
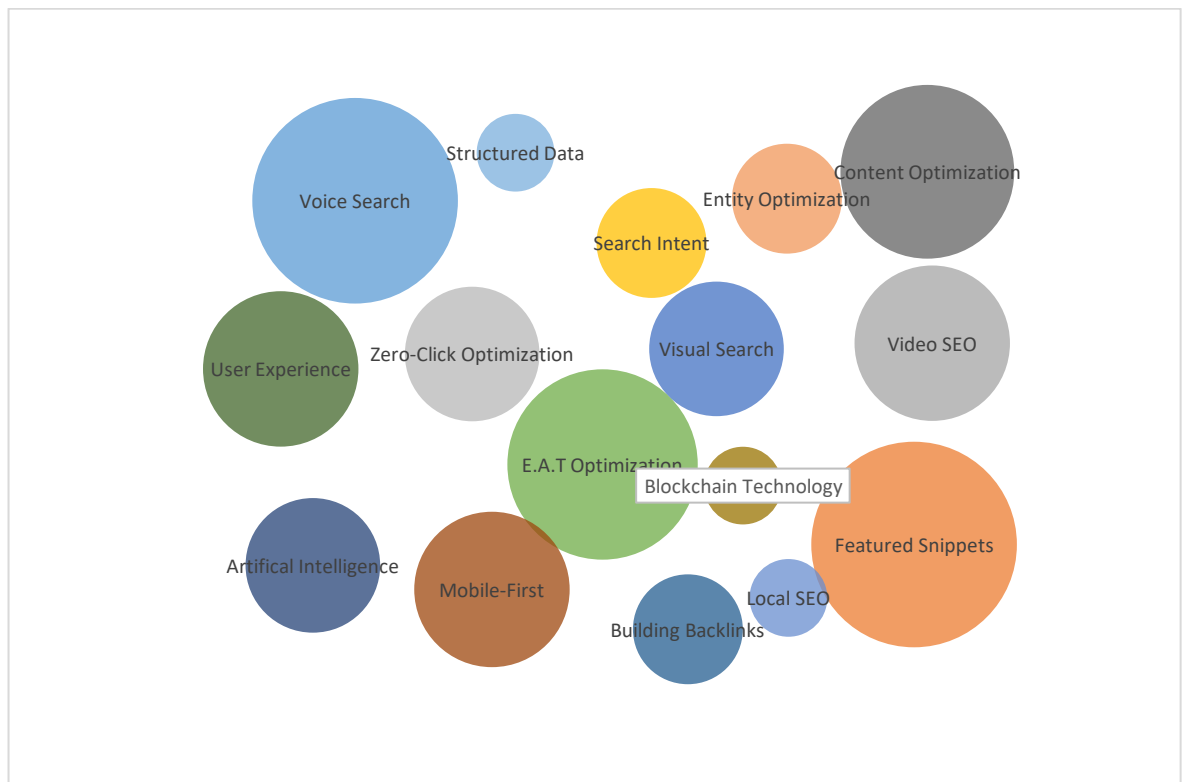
Figure 9. Trends in SEO

3.1   Featured snippets

Featured snippets are short pieces of text appearing at the top of Google's search results that aim to answer a searcher's query. They can consist of definitions, tables, steps or lists. They hold position zero in SERPs instead of position one and therefore could increase organic traffic on your page. The downside is that if you don't already rank on the first page you are likely not going to get featured in featured snippets. Below is showed an example of featured snippet on Google's search result in a form of a list. (Dean a, 2019.)
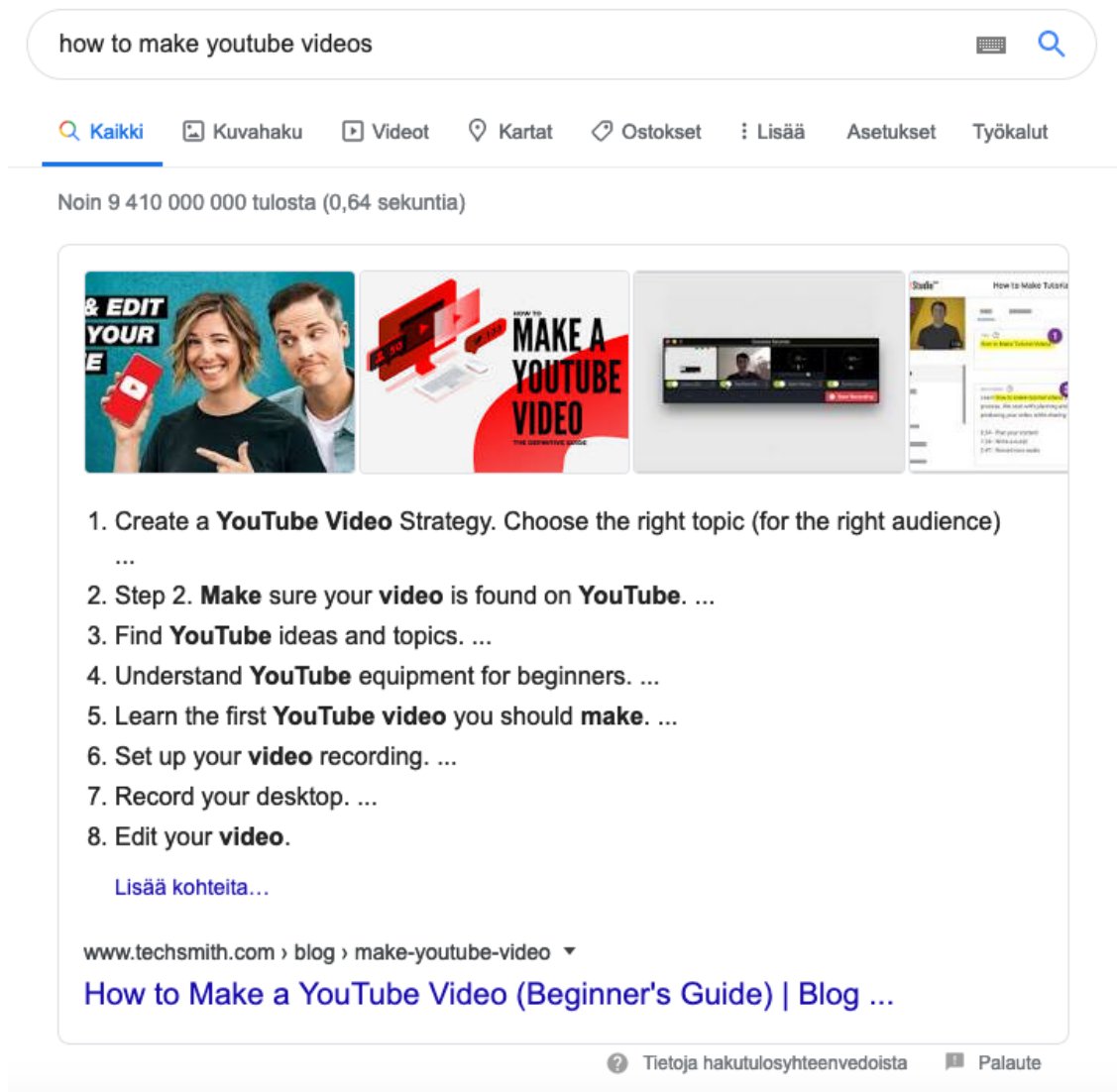
Figure 10. Screenshot of Google's result page (Google e, 2020)

As mentioned before there are different types of featured snippets. First one is a definition box which is designed to give searchers a definition or description about something. Second one is a table for example money exchange rates formatted in a table. Third one is ordered list such as in screenshot above and last one is unordered list, for example list of tools for keyword research. To start optimising for featured snippets there has to be

done keyword research on words that the content already is ranking high in SERPs and include keywords that already rank on featured snippets. In addition, including long-tail keywords in content is important for ranking in featured snippets. (Dean a, 2019.)

To optimize content for definition box snippet the text should be 40-60 characters long with "What is X" heading above it. Formatting the text to look like featured snippet is also very important part as well as to use objective language excluding own opinions in the definition. Optimising table for snippet depends on how the site is set up. Google does not collect the information separately from a website for creating a table but the table has to be formatted on the page. That exact same table from the website is used in SERPs. The key for optimising ordered lists is again presenting clearly the list on the page and using numbering. In addition, the list has to be consistent. For example, if list or step-by-step guide is numbered in one way the numbering should be the same for every number. (Dean a, 2019.)

3.2   E.A.T optimisation

E.A.T acronym comes from words expertise, authoritativeness, and trustworthiness. It is a factor in Google's search algorithm affecting website's ranking in SERPs. Optimising E.A.T of the website means improving the content, reliability and reputation of the website. (Mergenhagen 2019.)

First letter of the acronym E as expertise has two types of expertise levels: formal expertise and everyday expertise. Formal expertise means that the author is a professional and has verified expertise in the field. This is particularly important in medical, finance and legal sectors. On the other hand, everyday expertise means that the author has life experience in the field or topic. Google has said that it will not penalize the author or content for lacking formal education if the person has the type and amount of life experience to make him or her an expert of the topic. (Mergenhagen 2019.)

Authoritativeness, the second word of E.A.T acronym, is about reputation. Website or company to be seen as authoritative, it has to have good reputation. It is possible to showcase authoritativeness for example by displaying author's professional title, photo and short presentation of the author. Reputation however is evaluated by real customer experience. Google looks as well for external sources such as recommendations from trusted experts, news articles or awards for reliable evaluation of authoritativeness of the business or website. (Mergenhagen 2019.)

Last acronym T, stands for Trust. Trust factors honesty of the content, website and business. For example to display trust on the website, one can have HTTPS secure website, contact information and about us page. (Mergenhagen 2019.)

3.3 Content optimisation

Content optimisation has always been an important part of doing SEO. It has been changing greatly since Google launched algorithm update RankBrain in 2015. Since the RankBrain's A.I technology could interpret and understand the content better it made relevant, high-quality content one of the most important SEO trends today. The change meant that the algorithm could now not only read the content but also interpret and understand it. Therefore, the content itself has become more important. Additionally, the importance to write for the readers instead of search engines has also increased. (Condron 2019.)

Other Google algorithm update that has changed the content optimisation is BERT. It was launched in the end of 2019 so it is a newer update than RankBrain. BERT is designed to understand better natural language and conversational long search queries. The long conversational search queries with prepositions such as "for" and "to" should be now improved and return more relevant results after the algorithm update. (Nayak 2019.) To conclude since the Google is becoming smarter and better in understanding the content, the content optimisation is becoming more important trend in SEO.

As it has been explained in subchapter 2.2.2. the main framework for content optimisation remains keyword research, optimising tile tags and meta descriptions, structuring content so that it is easy to read, making it interesting with appealing headlines, pictures and infographics as well as making it relevant for the readers.

The benefit of high-quality content is that it motivates website visitors to stay longer on the website as well as it can improve user experience (UX), CTR and generating backlinks. User experience is about how a person feels while using a system, product or service and it seeks to improve the quality of the user's perception. High-quality content affects UX by providing the answers to user's search queries. It can also affect UX by having a website that has good structure that users can navigate easily and make users more satisfied. Click-through rate tells how many users clicked one's link in SERPs out of all users who saw it. Therefore, as it was stated in subchapter 2.2.2 if a website has well written title tag and meta description it is more likely to get clicked on. If the website also has well written, relevant and interesting content, it has a higher possibility to gain backlinks from high-

authority websites. The more quality backlinks one's site has, the greater the possibility is to get ranked high in SERPs by Google. (CXL s.a.; Sharma 2018; Usability.gov s.a.)

4 Voice search

In this chapter firstly will be explained what is voice search. Continuing to introducing the devices and technology that enables voice searching. After that the concept of voice assistant will be defined. Then will be explained how to do SEO for voice search and lastly there will be analysed the challenges of voice search with adding final thoughts on future of voice search.

4.1 Definition of voice search

Voice search, also known as voice-enabled search is speech recognition technology that allows users to perform searches using voice rather than typing. These searches involve rounds of interactions that allow the software to clarify the user request. (Paldesk s.a.)

Since voice search functionality is based on speech recognition technology, this technology is in turn based on sound packets that we project when we speak words. For instance, if we say the word cat, the program would recognise "c", "a" and "t" as separate phones. Phones are individual letters whereas phonemes are blocks of sound that words are created from. (Technology Org 2018.)

Speech recognition technology combines phones and phonemes together to turn the speech into a set of letters and words which can be put into a context. Our brain does this automatically in microseconds, but speech recognition programs must use algorithms and problem solving to perform the same process of understanding. (Technology Org 2018.)

Voice search starts from processing and transcribing human speech into text by a voice search assistant or a software on computer, mobile device or other voice search enabling device. Then the program analyses the text to detect questions and commands. After that the program connects to external data sources like search engines to find the relevant information for the search require. The last step is translating the information into a format that is easy to understand and fulfils the users intent. (Technology Org 2018.)

4.2 Technology enabling voice search

To be able to make a voice search, a virtual assistant is needed. The virtual assistant handles the communication with a user. There are several virtual assistants available on the market. The most used ones are shown below in Figure 11. Virtual assistant by itself

is a software which can be installed on a device. The devices can differ in type, whereby smartphones are the most common. Besides smartphones, virtual assistants are found on smart TV's, PC's, speakers, cars and many other devices. (Mari 2019.)

Figure 11 shows the amount of available devices enabling voice search (in 2019) through four most popular voice assistants. Combined the assistants reach over 2 billion devices.
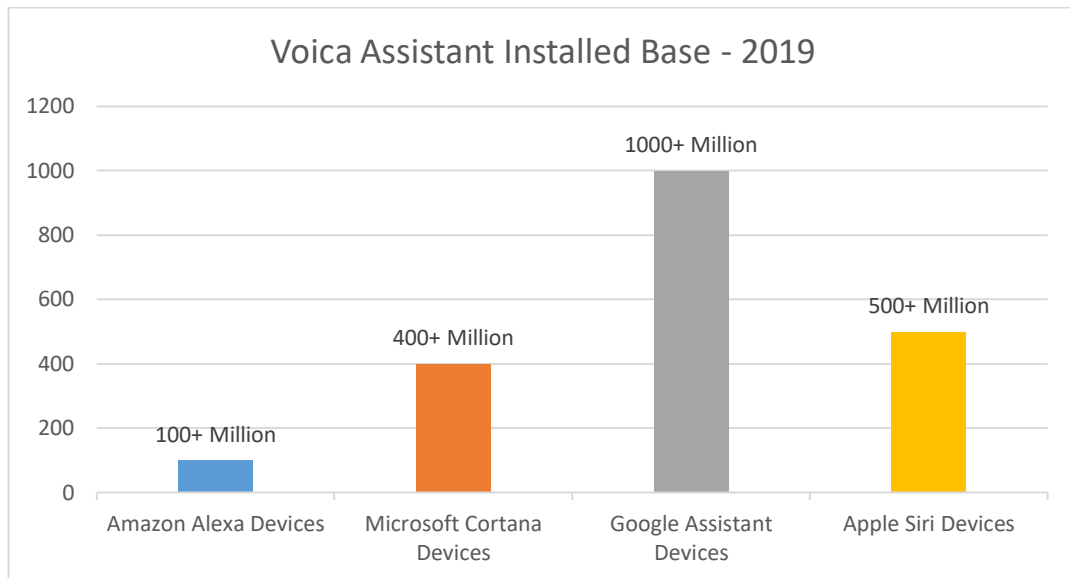
Figure 11. Voice Assistant Installed Base 2019. (adapted from voicebot.ai)

Amazon's voice assistant Alexa is mostly used on smart speakers but there are up to 150 million other devices it can be installed on. Microsoft's assistant Cortana is mostly installed on PC's with a total availability of over 400 million. Whereas Apple's Siri is installed on over 500 million devices, the market leader Google Assistant is on over 1000 million devices, most of them on smartphones. Cortana and Alexa use as a search engine Bing and Siri and Google Assistant use Google. (Kinsella 2019; Pitt 2019; Reviews.com 2020.)

Google Assistant has the highest installed base and it uses Google as a search engine. It is also the most accurate at responses and the fastest voice assistant on the market (Reviews.com 2020). Since this thesis concentrates on Google as a search engine along with the latter findings it was chosen to take a deeper look on how Google Assistant works and enables the voice search in the following.

Google Assistant is Google's version of a voice assistant which was launched in 2016. It was originally launched on the Google Pixel smartphones and Google Home but it is now available also on Android devices, iPhones and iPads. Google Assistant is built in Android

phones but for iPhones and iPads it needs to be installed. There are some restrictions for installing Google Assistant on iPhones and iPads, such as the operating system iOS has to be 10 or higher and language needs to be set to a supported language. (Google f, s.a; O'Boyle & Tillman 2019.)

Making a voice search with Google Assistant starts by saying wake words "Hey Google" or "OK Google" and then continues by user saying the search question. After the wake words, Google Assistant should be able to continue the conversation without trigger phrase because it is designed to give conversational interactions. It means that if a user starts with the wake words and then asks "How old is John Lennon?" Google Assistant should respond to it and after that it should be possible for user to ask a follow-up question "How tall is he?" without saying the wake words again. Google Assistant can also recognise voice profiles for different people, so it can understand who is talking to it and modify the responses accordingly. (O'Boyle & Tillman 2019.)

4.3   Voice search optimisation

There are many similarities in SEO for written search and voice search. The main difference is that in doing a voice search the searches are longer and more conversational which affects SEO the most in keyword optimisation and content optimisation. (Backlinko b, s.a.)

According to The Hoth (a, 2018), American Link Building Service Company, best practises to optimize for voice search are use of long-tail keywords, optimising content particularly for voice search, doing local SEO, optimising for video SEO, increasing domain authority and minimising loading time of a website.

Long-tail keywords are an important pillar of voice search optimisation because they contain more words than regular keywords and therefore are more conversational. Conversational keywords can also be called as "Natural Language" keywords. For example when a user would normally type in Google search "vegetarian diet good", in voice search user would use natural language and "type" in the search "Is vegetarian diet good for you?". Therefore it is important when completing keyword research to take this into account. It is also important to include "question keywords" in your keyword research such as who, how or when because it is more natural to formulate sentences and questions instead of just saying one word to Google. (Backlinko, s.a.)

There are different ways to optimise content for voice search. When a person is writing a long piece of content it should include many long-tail keywords with answers without

"overstuffing" it. Depending on the keyword it can be a good idea to use them also as headings and subheadings which would give the text a structure. Structuring the answers for around 30 words can increase the possibility of ranking in voice search. There are also other ways to optimise the content such as optimising Frequently Asked Questions also known as FAQ's and featured snippets. Since "question keywords" and giving users answers of around 30 words is important for voice search SEO, FAQ pages are great opportunity to use both (questions keywords and 30 character long answers) for optimisation. The featured snippets are important to optimise because according to Brian Dean's (b, 2018) study almost half of the voice search results came from a featured snippet. For optimising the snippets it is beneficial to use schema markup. (The Hoth b, s.a.)

The possibilities of local voice search are exciting. With local voice search it is really easy to get the information about a business or even a route how to go there. Therefore, local SEO results are important to optimise for voice search. There are two ways how users would usually search for results. For example if a user is searching for Indian restaurant in Valencia, the user would type either "Indian restaurant in Valencia" or "Indian restaurant near me". Therefore, it is important to optimise not only website's content for this kind of search query but also to claim and optimise Google My Business (GMB) Profile. GMB is a tool which helps business owners to promote their business website on Google Search and Google Maps. It gives the website a presence on Google Search and Maps, allowing the business owner to respond to reviews, post photos of products or special offers, and add or edit business details. Additionally, when the business owner chooses the category of the business in Google My Business Profile as for example Indian restaurant, it is more likely to appear as a result when someone searches for a "Indian restaurant near me". (Google g, s.a; The Hoth b, s.a.)

As the main differences for optimising searches for voice search is where we search, the conversational language, content and keywords, therefore, long-tail keyword optimisation, content optimisation and local SEO are most important voice search optimisation practises. Additional advices include optimising for video SEO, increasing domain authority and minimising loading time for the website. (The Hoth b, s.a.)

Videos tend to show up more as a top result for natural language searches such as "How do I cut a pineapple". That is because user would rather see how to cut a pineapple than read about it and Google understands it. The top result video snippet can even start to play automatically from the relevant part of the video to answer the search query. To

optimize videos for voice search there has to be focused on titles and writing video descriptions that use long-tail keywords and natural language voice search keywords. (The Hoth b, s.a.)

The last two tactics include increasing domain authority and minimising loading time for the website. The average voice search result page loads in 4,6 seconds which according to Brian Dean's study (b, 2018) is 52% quicker than an average webpage. The site speed is an important factor to get into featured snippet position for voice search. On the other hand, domain authority is also important because it is studied that sites which have more backlinks and authority tend to rank more often in voice search results. Building site's domain authority is explained more thoroughly in subchapter 2.2.3. (The Hoth b, s.a.)

4.4   Challenges of voice search technology and usage

Humans have tendency to do certain things always the same way. This regularly repeated behaviour is called a habit. (Britannica 2014.) The habit of using the internet and searching the web have remained the same for many years and it can be difficult to change it. It is closely related to consumer innovation adoption which means consumers have difficulties of adopting new technological innovations. For example it took some time to shift from home phones to mobile devices or writing text messages instead of emails. Consumer adoption is a process, which carries a sequence of steps in which the consumer passes from initial knowledge of an innovation, to forming an attitude towards it, to reaching an adoption decision. (Saaksjarvi 2003, 90)

There is a theory called diffusion of innovations also known as the technology adoption curve. It describes when and why a person chooses to adopt an innovation. There is five stages of adopters: Innovators, early adopters, early majority, late majority and final stage laggards. Innovators are the first ones to adopt because they are risk takers that have resources and desire to try new things. Then comes early adopters that are selective which technology or ideas they start using. Third comes early majority who take their time before adopting new idea. Then late majority adopt because of peer pressure, emerging norms or economic necessity and lastly laggards who are traditional and rely on their past experience. (Hellem. 2016; Saaksjarvi 2003, 90.)

Below in Figure 12 it is shown that the USA is clearly ahead of use of voice assistant technology having Germany and UK right behind. The figure shows that even though the USA is the leader in adoption of the technology it is also only in early majority state which indicates that the real revolution of voice search technology is not here yet.
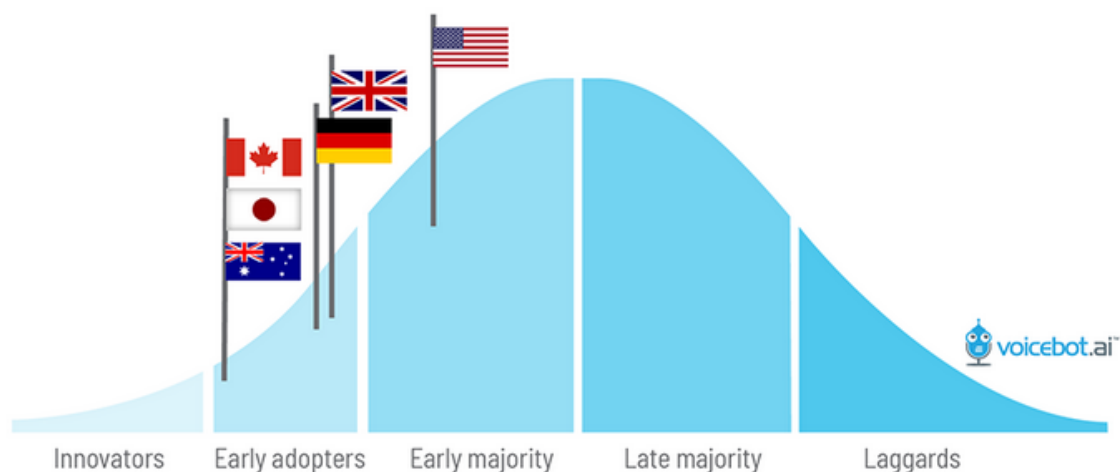
Figure 12. Voice Assistant Technology Adoption by Country (Kinsella 2018)

Language is also one of the barrier in voice search technology. Firstly, at the moment not all languages are supported for smart speakers and voice assistants and only one voice assistant (Siri) supports Finnish. This can affect users' buying decision. If a user's language is not supported he or she might feel uncertain in making searches and commands in other language than his or her own mother tongue. Secondly, programs cannot understand the context of language the same way as humans can. Users have to speak clearly even when using their mother tongue while doing a voice search and it can be frustrating if machine continues misinterpreting the search query. (Wiggers 2019; Wolhuter 2019.)

Voice search technology is not yet advanced enough and that is why we're still in the transition and adjustment phase. Users expect the voice search to work seamlessly which is not always the case. It is also limited what the users can search or ask the voice assistant or software. In doing voice searches it is possible to do only really simple queries such as "How old is John Lennon?" or "Where is pizzeria X?". The searches done with voice assistants are binary searches and to make a purchasing decision the searches would need to be more conversational than one sentence. (Frasca 4 March 2020; Martin 2018.)

The problem with voice search technology is also that the changes take time and therefore also resources. For example it is hard to add a new supported language. The process of adding a new language is multidimensional and requires significant amount of research, development and time. (Wiggers 2019.)

Furthermore, Figure 13 shows the frustrations users have about voice search devices, quoted from a survey with more than 600 respondents (mostly from the U.S. followed by India and Europe) made by Lily Ray (2019) and published on Search Engine Land website. Only 16% of the respondents answered that they don't have any complains using voice search device. Thus remains 84% with frustrations of different kinds. This is a big challenge voice assistants need to overcome, leaving room for improvements in the understanding of search requests, the usability and the quality of response.
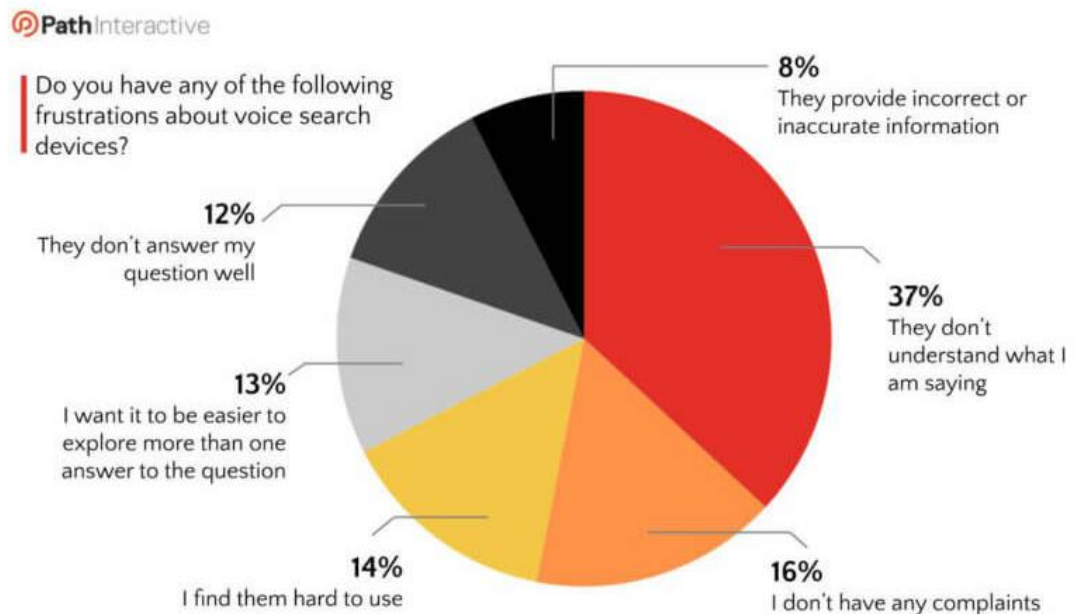
Figure 13. Frustrations in use of voice search devices (Ray 2019)

4.5 Future of voice search

Over the last few years, many claims about the success and the rise of voice search occurred throughout the internet. Most of them were later to be proven exaggerated (Ray 2019.) With this in mind, it is not easy to predict how the future is going to look like.

Furthermore, the possibilities using voice search at the moment are quite limited. Common fields of usage are: getting information (especially local search queries), commerce (possible with Alexa and Google Assistant) and navigation. New use cases can lead to further improvements of the assistants, but they need to be well understood and simple to use. With a growing number of possibilities using voice search, the attractiveness for the population might grow. (Charlton 2020; Munster & Thompson 2019.)

On one hand, the growth of voice search enabling devices is undeniable. With falling device prices (e.g. smart speakers), new standards for smart TVs or a coming establishment in vehicles, the amount of devices with virtual assistants is going to rise. Together with the greater amount of the devices enabling voice search comes the possibility for users to use them. (Lockhart 9 April 2020.)

This leads to the second aspect of how quick and widespread the technology will be. It depends on adoption of the technology by the population. As shown previously in subchapter **Error! Reference source not found.**, at the moment majority of the users get frustrated when they are using voice search. To increase the acceptance of voice search throughout the population, the user experience needs to improve. In fact, the leading digital assistants are constantly improving in this field. Statistics show that Google Assistant, Siri and Alexa are constantly improving in responding correctly to questions asked. All of them have reached an understanding of the query of around of 80-93%. As it was indicated in subchapter 4.2, of all voice assistants on the market, Google Assistant answered the most questions correctly which was 92,9% of the questions answered correctly. Siri answered 83,1% and Alexa answered 79,8% of the questions correctly. Following this trend, the authors predict that the correct response score will soon reach 100%. (Munster & Thompson 2019.)

In conclusion the future of voice search might be led by these three factors; increasing availability of digital assistants, improving accuracy of responses and new use possibilities emerging. A combination of all of these factors will lead the change in peoples' adoption of technology and voice search devices as part of their everyday lives.

5 Methods of the research

Method is a technique that is used to collect information to solve questions of the research. Method includes processing, organising and analysing the collected data. (Drake & Salmi 2018.)

Since the topic of voice search is rather new there was not much academic sources to rely on. Primary research had to be done to acquire needed information and to achieve deeper understanding of the topic as well as to ensure that it supports the secondary information found. In this chapter will be described the method that was chosen to gather the data as well as included justification of the selection of the method. After that will be explained the process of conducting the study and lastly present the analysis method that was chosen to analyse the interviews.

5.1 Qualitative research method

Qualitative research is a broad term that covers extensive range of techniques and approaches. It aims to answer questions such as what, why and how and to describe, understand and interpret phenomena. Since qualitative research is generally used to understand views and new thoughts it was chosen as the research method for this thesis. The topic of the thesis is rather new and therefore there has to be gathered more in-depth data. (Hennink, Hutter & Bailey 2020, 10.)

The qualitative method: in-depth interview, was chosen for conducting the research. The key characteristics of in-depth interviews are open-ended questions, semi-structured format, seeking understanding and interpretation and recording responses. Open-ended questions that are worded so that the participants expound on the topic instead of answering "yes" or "no" helps to gather more information. Semi-structured format is conversational and therefore it does not only include pre-planned questions but as well it gives the freedom for the interviewer to respond to the answers of the interviewees. The interviewer should try to understand and interpret what the interviewees say as well as seek clarity throughout the interview. (Guion, Diehl & Mc Donald, 2011, 1)

Disadvantages of this method can be interviewer's lack of experience in interviewing, the answers and data being misinterpreted by interviewer as well as the answers of the interviewees' being biased. The limitations of the method are that collected data cannot be generalised and the method is time consuming. Lack of experience of interviewer can lead to interviewees not feeling comfortable and interviewer not collecting right data for the research as well as for example feeling shy to ask interviewees' to repeat something. This

can bring to misinterpreting the answers of the interviewees and misunderstand the data. The answers of the interviewees can be biased because of the interviewees believing in a certain way or hoping for a particular outcome. The data of the in-depth interviews cannot be generalised because for the study are chosen small samples and random sampling methods are not used. The method is time-intensive because of planning the interviews, conducting them and lastly analysing them which all consume a lot of time. (Boyce & Neale 2006)

In-depth interviews are usually recorded. By recording responses it is easier to remember how the interview went. Recording responses includes not only audio-recording but making notes (field notes) and observing both verbal and non-verbal behaviours. In conclusion the in-depth interviews not only involve asking questions but recording and documenting the responses to probe for deeper meaning and understanding. (Guion, Diehl & Mc Donald, 2011, 1)

5.2   Conducting the study

The first step of the study was defining the goal of the study and then choosing the data collection method. As it was mentioned in subchapter 5.1 the method that was chosen was in-depth theme interview. This type of method allows to acquire specific information on the subject. After the method was chosen, the theme and the questions were outlined. The questions were planned in-line with the main questions of the thesis: what are current SEO trends, how voice search affects SEO and what is the situation of voice search now and in the future.

After outlining the questions next phase was to choose sampling method. Sampling means choosing participants for the research with different methods depending of the goals of the research (Statistics Solutions a, s.a). Since there was needed to select relevant participants to the research to be able to answer the required questions, purposive sampling was chosen as a sampling method (Saunders, K. N. M., Lewis, P. & Thornhill, A. 2019, 321). According to the sampling method four professionals with required knowledge to answer the questions were chosen. They are all working in the field of SEO and marketing either in Digital Marketing Agencies in Finland or as entrepreneurs.

Practicalities of conducting the interviews included choosing time and location of the interviews. Since the researcher and the interviewees were in different countries it was agreed to have the interviews via Skype or Microsoft Teams software. The interview questions were sent beforehand as well as the interviewees were asked permission to record the interviews for the purpose of transcribing the interviews. The interviews were

conducted in Finnish and they lasted around 40 minutes per interview. Questions were same for every participant. The order of the questions asked was also the same in every interview.

The interviews consisted of three parts. First part contained questions about the backgrounds of the interviewees. The questions that were asked were: "What is your area of expertise?" and "How long have you been working in SEO and marketing?". The objective was to get more information about the interviewees. Middle part was about SEO trends and how they will possibly change in the future. The last part concentrated on voice search, how to optimize SEO for voice search and what is the future of voice search. All of the interviews were ended with questions as "Do you have anything to add to your responses?" and "Do you have any questions for me?". In total there were asked nine questions. The interview questions can be found in appendixes in English and Finnish.

While conducting the interviews there were taken field notes. Notes included written responses as well as the observations of the tones in voice. Since the interviews were conducted by internet calls without using web camera it was not possible to observe non-verbal behaviour such as facial expressions or body language. After the interviews were conducted, the recorded audios were listened to and transcribed into text to be ready for analysis.

5.3   Analysis

The method used to analyse the interview answers was qualitative content analysis. Meaning that the data is analysed and categorised to find connecting themes from the content of the interviews. (KAMK University of Applied Sciences s.a.)

As it was indicated in subchapter 5.2. after the interviews were finished the recordings were listened for transcribing them. After transcribing the recordings, they were listened two more times to find possible errors and add missing parts to ensure that nothing was left out. According to Bianco, Gasparini and Schettini (2014, 85) for encoding the research results, the use of colour can greatly improve understanding of the information depicted by image and the capacity for remembering it. Colour coding process involves searching the text for mutual themes, ideas, concepts and key words and marking them with a colour. Therefore, after listening the recordings and ensuring reliability of the data, mutual answers were colour coded. Then an excel file was created to gather all the information together, so that it would be easier to compare the answers which arose from the interviews. In excel was used same colour coding method to underline the most important topics and themes.

6   Results

In this chapter the results of the qualitative research that was conducted for the thesis are presented. The data was analysed according to the principles explained in chapter 5. The themes that arose from the research were in-line with the main questions of this thesis.

6.1   Current practises of search engine optimisation

In the interviews the responses about trends in SEO were narrowed down to the following results: high-quality trustworthy content, user experience and featured snippet optimisation. The authority of the website, importance of the entities rather than having content stuffed with keywords and the trend of decreasing CTRs were also mentioned quite frequently.

High-quality reliable content optimisation was mentioned by all of the interviewees as an important trend. Interviewee 2 specified that it is not enough to write articles such as "5 ways to optimise your content for voice search" but the articles have to be long and thorough. Related to the high-quality content interviewees 1 and 4 said that it is more important to have the content entity optimised than just having many keywords to rank higher in SERPs. Interviewee 4 explained that in the past it was possible to rank high in the SERPs just by couple of good articles but now it is really important to have the whole website's content optimised. Interviewee 4 also mentioned that it becomes more and more important to be an expert in the topic of what a person is writing about. It does not matter if the topic expertise is gained from own experiences or academically it just has to be reliable.

User experience was also slightly connected to the high-quality content. Interviewee 2 said that it is possible to affect positively on user experience by writing well-structured and visual content. Interviewee 3 mentioned that mobile-friendly website, website speed and content that is optimised for humans rather than the search engines have an impact. Interviewee 3 also voiced that building the website first for smartphones rather than to desktops could also increase the usability of the site and therefore increase quality of user experience. Understanding well search query and understanding the customer and the business were the main points for user experience of the interviewee 4.

Featured snippet optimisation was also mentioned by all four interviewees as a growing trend. Interviewee 1 also said that rich snippet optimisation is being connected to the featured snippet optimisation. The rich snippet is an enhanced result of featured snippet and it comes from the information in the schema markup data on a website. Featured

snippets hold position zero on Google's SERPs and contain various information cited from the original site whereas rich snippet is a search result that contains more information than normal result. Rich snippet can also rank on position zero such as business information rich snippets. Other forms of rich snippets are for example recipes and products. (Turnbull 2020.) Interviewees 2 and 3 mentioned that featured snippets affect negatively on CTRs of the websites. Since the users find the answers to the questions already in SERPs, they do not have to proceed to the websites.

Authority of the website was mentioned by interviewees 2 and 4. Interviewee 2 said that the authority is an important trend that changed ranking couple of years ago. Interviewee 2 also mentioned an example about how smaller businesses and blogs dropped down in the ranking while bigger businesses rose because of the authority signals. Interviewees 1 and 3 did not mention anything about websites' authority.

Some other themes that arose about trends in SEO from the interviews were influencer marketing and how to use influencer marketing for creating backlinks. Influencer marketing was brought up by interviewee 3. From a technical point of view interviewee 4 considered building a website with JavaScript was a rising trend. It was also mentioned by Interviewee 1 and 2 that SEO does not generally change much and there is always same basis that works well for years. Interviewee 1 continued the thought by saying that it feels like Google would like to get rid of the ability to do SEO.

Voice search was mentioned as a trend by Interviewees 1 and 3. Interviewee 4 said that there has been already some saturation with the topic because it has been predicted for years to be the newest trend. Interviewee 3 commented that voice search is not just a trend but it is waiting for its revolution such as what happened with the mobile phones.

6.2 The impact of voice search in SEO

The interviewees were asked "How voice search is impacting on SEO?" and "How voice searching should be taken into account when doing SEO?." Main keywords that arose from the interviews were content, featured snippets, question and answer format, FAQ pages, long-tail keywords, structure data and local SEO.

Interviewees 1, 2 and 4 mentioned the importance of optimising for featured snippets. Interviewee 2 added that there is a synergy between optimising featured snippets and voice search which makes the voice search automatically optimised if the content is optimised for featured snippets. Interviewee 2 emphasized on importance of writing without hard terms and many citations in the text. Interviewee 2 and 3 also suggested

having questions in subheadings or even main headings and the answers under the questions to get featured in snippets and therefore to voice search results.

Voice search impacts SEO content optimisation with high quality and simple to read content according to interviewee 2,3 and 4. Interviewees 1 and 3 agreed that the content contains more long-tail keywords when it is optimised for voice search. Use of conversational language was brought up by interviewee 4. Optimisation for FAQ pages was commonly agreed by interviewees 1,2 and 3. Interviewee 3 added that even if the website would not have a separate page for FAQ's that having questions in the content is beneficial for voice search optimisation. All of the interviewees agreed on having questions in the content is valuable for voice search optimisation.

Interviewees 2 and 4 said that in optimising for voice search it is more common to use structure data so that search engines clearly know which piece of content is the question and which part is the answer. The structure data helps search engines to understand what the question is and what the answer in the context is.

Interviewees 3 and 4 said local SEO is an important part of voice search optimisation. It is typical for consumers to search for this kind of location-based search queries. It was also mentioned by interviewee 4 that since voice search is in its beginning of evolution, voice search is used for doing really basic things such as asking the opening hours of a local pizzeria. Both of the interviewees agreed that for the local businesses to be ready for this kind of searches their Google My Business Profile should be actively working and optimised.

It was agreed by interviewees 2, 3 and 4 that in general voice search does not affect much how SEO is done. Interviewee 3 explained that voice search might have an impact on content optimisation however not on the technical aspect and off-site SEO. It was also mentioned by interviewee 3 that voice search is not its own thing that has to be exceptionally concentrated on but it is more important to concentrate on doing SEO as a whole. Interviewee 4 (31 March 2020) added that voice search is not here yet, it is the future. Interviewee 1 agreed with interviewee 4 by saying that we have not seen yet the ecosystem of the voice search yet.

6.3   Challenges of voice search

The challenges of voice search rose as one of the theme because all of the interviewees agreed that there are some obstacles that voice search needs to overcome before it can really be adopted by the users.

The main challenges that were mentioned were location where people search and the topics you can search about using voice search. Meaning that it is not possible to use voice search everywhere and search about everything out loud. Interviewees 1, 2 and 3 said that people might not feel comfortable using voice search in public places such as supermarkets or bus stops where other people are around. They also mentioned that there are some private matters such as illnesses that people search for in general and they do not want to share it with other people by searching using voice. Interviewee 3 mentioned the cultural side of using the voice search. Culture can affect in a way how people are expected to behave in public spaces. Interviewee 3 added that it is common in Finnish society to behave in public calmly without disturbing others whereas in some other cultures people can be more outgoing and loud. It was concluded by interviewee 4 that the search queries are different with the two ways to search (voice and written).

Interviewee 2 said that there is a contradiction between the voice assistant services and the websites. The interest for the voice assistants is to create good user experience by offering fast reply through highlights in featured snippets. Whereas to websites it is more appealing to have traffic on their websites through search queries.

Interviewee 4 stated that the technology is not yet advanced enough. It was also mentioned by interviewee 4 that at the moment the search queries that are possible to make are really simple. People usually search for the weather, local searches or other simple search queries. Interviewee 4 suggested that if it would be possible to ask for example "Until what time is the hair salon on my right open?" and instead of saying one sentence having a full conversation with voice assistant it could be more valuable for businesses to optimise for voice search. Interviewee 3 added that there might be language barriers as well because Finnish language is hard for search engines to understand.

Voice search technology is not profitable yet for the websites. As with traditional SEO it is possible to make revenue but optimising solely for voice search does not generate any more revenue for the websites. Also analysis of the results is nearly impossible. Both arguments were said by interviewee 4. It was also suggested by interviewee 4 that the only way to analyse the results on some level is to see if the website converts many views by question queries. Even in this situation it can only be assumed that some of the people have come to the site using voice search. Interviewees 1 and 2 both agreed of interviewee 4's statement that it is not possible yet to analyse the results. Interviewee 4 also explained that SEO is based on analysation of the results and there are many tools for traditional

SEO. Interviewees 2 and 4 said that for voice search there are no tools available to analyse which of the users have come to the website using voice search and which users using traditional written search. Interviewee 4 concluded that the end goal of doing SEO is to make profit and with voice search it is not possible yet.

6.4 Future of voice search in Finland

The interviewees were asked if voice search will ever overcome traditional written search in the future. The answer was the same for every interviewee: voice search will not replace traditional search. Interviewee 4 explained that voice search might become quantitatively more popular but it depends on how technology will evolve. As an example interviewee 4 told that it should be possible to have a conversation with voice search about a buying decision before it could grow nearly as popular as traditional written search. Interviewee 2 added that at the moment the voice searching affects more peoples' behaviour than search engine optimisation.

To describe the current situation of voice search in Finland all of the interviewees agreed that it is not widely spread yet. Every time the interviewees spoke about voice search they referred to the market in North America and compared the Finnish market to the American.

The interviewees were asked "How companies can take voice search into account now and its possible growing popularity?". All of the interviewees had different answers.

The suggested actions which can be taken now in Finnish companies regarding the voice search were by the interviewees as follows:
- Hire a voice search expert or suggest someone in the company to study everything about voice search and pass on the knowledge to others (interviewee 1)
- Make a business analysis and make question phrases based on the results (interviewee 2)
- Acknowledge voice search as a part of SEO and try to include some practices supporting voice search in the traditional SEO work (interviewee 3)
- Be aware what is happening in other countries e.g. the USA (interviewee 4)
- Observe how e.g. Amazon is developing its product since it is monetised already quite far (interviewee 4)
- Reserve time and money when the revolution of voice search will begin affecting Finnish market (interviewee 4)
- Analyse how internal processes of the business can be affected by voice search (interviewee 4)

As possibilities of voice search there were listed new opportunities to use digital tools and opportunity to more effective time management by interviewee 3. Interviewee 3 also provided an example about mobile revolution. Before mobile revolution people could use

internet only at their desktop computers and when mobiles became more popular people could use their time more effectively. There are also some speculations about what could happen in the future of voice search. Interviewee 1 suggested that there will not be one market leader voice assistant, so to say "one Google" but many different assistants performing different tasks. As an example interviewee 1 mentioned own assistants for cars or other specific assistants for different devices.

7 Conclusions

In this chapter will be discussed the results of the research conducted in empirical part of this thesis. The results will be compared to theoretical part and secondary data that was found and used in chapters 2-4.

The aim of this thesis was to answer the research questions as follows:
- What are the current trends in SEO?
- How voice search impacts SEO?
- What will be the role of voice search in the future?

Data collected in the framework chapter and the qualitative research had some mutual results. The data in both of the researches cannot be generalised because of the low amount of the participants. The collected data is rather intended to show the direction of the underlying trends.

7.1 The trends in search engine optimisation

In the theoretical chapter 3 was gathered data and made a figure 9 to get an understanding what are the trends in SEO. According to the data that was found, the content optimisation, E.A.T optimisation and featured snippets are the most important trends in SEO. In the empirical part of the thesis subchapter 6.1. were described the results of the study of SEO trends being high-quality trustworthy content, featured snippet optimisation and user experience.

Both, secondary data and primary data collected, underlined the importance of high-quality content and a reason for that can be the Google's RankBrain algorithm update. As it was mentioned in subchapter 3.3, RankBrain algorithms' machine can not only understand but also interpret the text better than ever before. Interviewee 1 and 3 mentioned that algorithm updates are going more towards evaluating and understanding the context and the quality in content. This claim is supported by data in subchapter 3.3. as it describes the algorithm updates RankBrain and BERT. Therefore, the content has to be high-quality, relevant and more than just stuffed with keywords.

User experience is a relevant trend that all of the interviewees agreed on. It was mentioned by the interviewees that many different matters such as mobile-friendly websites , great content and website speed have an impact on great user experience. In subchapter 3 it is indicated that user experience could be one of the most important SEO trends (see Figure 9). The data in subchapter 3.3 supports the statement of the

interviewee 2 that optimising for good quality content has a positive impact on the user experience.

Featured snippet optimisation was stated by all of the interviewees as a trend. However, as it was mentioned in subchapter 6.1 featured snippets can affect negatively on CTRs of the websites. Since the users find the answers to the questions already in the SERPs, they do not have to click and proceed to the websites. This makes it less attractive to SEO professionals to optimise for featured snippets. On the other hand, in subchapter 3.1 was stated that featured snippets can increase the traffic of the website. The latter statement is an opposite of what the result of the qualitative research indicated.

According to both data presented it can be assumed that the website gets clicked on in featured snippets when it contains long content that will not be clear by just a glance in SERPs. Figure 10 in subchapter 3.1 shows an example of this kind of content. To investigate further this topic there was found out that featured snippets are not the only factor affecting CTR by Tim Soulo (2020) CMO and Product advisor at Ahrefs. Therefore it cannot be said clearly if featured snippets are a trend that SEO professionals want to include in their SEO strategy.

E.A.T optimisation was listed as a trend of SEO in theoretical framework. Overall, in the qualitative research it was not mentioned as a top trend. Only interviewee 4 mentioned it as an important trend at the moment. Interviewee 2 did not mention directly E.A.T optimisation but it was said that authority and trustworthiness of the website are important which are two of three E.A.T optimisation factors. It was also mentioned by interviewees 2 and 3 that websites cannot rank high in SERPs overnight. E.A.T is about building trust, quality content, expertise and reputation therefore it needs some time for websites to achieve that.

To conclude the interviewees 3 and 4 said that there are too many trends in SEO to list them all. In opinion of interviewee 2 there is no trends in SEO. *"It is such an exceptional business field where trends are long-term and same things work for years"* (interviewee 2, 8 April 2020). Interviewee 1 also said that in SEO there are same principles that work for years and if there will be new ways to consume media (such as voice search for example) then SEO would need to adapt. Interviewee 4 added that it is more important to know your business and your customers so well that you can optimise particularly for them. Interviewee 3 (2 April 2020) sums up, "*There are so many trends and it depends always on the industry and the company what works"*.

7.1 Impact of voice search on SEO

As it was indicated in subchapter 6.2 it was agreed by the interviewees that main themes of voice search optimisation are content optimisation, featured snippets, question and answer formats, including FAQ pages, long-tail keywords, local SEO and use of structure data. There were many mutual themes with theoretical subchapter 4.3 about voice search optimisation with only slight differences.

Importance of content optimisation has risen as a main theme in every aspect of SEO. It has also been supported by theoretical framework. As it was said in subchapter 6.2 writing high-quality content, using question and answer format as well as long-tail keywords, and creating FAQ pages are all part of content optimisation.

Previous is confirmed in subchapter 4.3 by The Hoth (b, s.a*) "There are different ways to optimise content for voice search. When a person is writing a long piece of content it should include many long-tail keywords with answers without "overstuffing" it. Depending on the keyword it can be a good idea to use them also as headings and subheadings which would give the text a structure. Structuring the answers for around 30 words can increase the possibility of ranking in voice search. There are also other ways to optimise the content such as optimising Frequently Asked Questions also known as FAQ's and featured snippets."*

As it was said in subchapter 6.2 there is a synergy between optimising featured snippets and voice search which means the voice search is automatically optimised if the content is optimised for featured snippets. The claim is not fully supported by theoretical data but it is said in subchapter 4.3 that almost half of the voice search results come from featured snippets. Also taken into account to optimise for featured snippets there are used long-tail keywords and question and answer format as well as usually answer for voice search query is in position zero in SERPs there are many similarities for optimising for voice search and featured snippets.

Local SEO is an important part of voice search optimisation. It was said in the subchapter 6.2 that it is typical for consumers to do location-based search queries with voice search. It was also mentioned that for local businesses to be ready for this kind of searches their GMB Profile should be actively working and optimised. In theoretical subchapter 4.3 it is agreed on that it is convenient to use local voice search to get the information about a business or directions. As well as the claim about optimising the GMB profile is supported in subchapter 4.3. It is explained that GMB is a tool which helps business owners to

promote their business website on Google Search and Google Maps. So if a user searches for a business it is good to get the result visible as a Business Profile at the top of the SERPs and Google Maps.

It was said in subchapter 6.2 that voice search might have a small impact on content optimisation however not on the technical aspect and off-site SEO. It was also said in subchapter 6.2 that voice search optimisation is not its own thing but an aspect of SEO. As well as featured snippet optimisation, long-tail keywords, FAQ pages, question and answer content and use of structure data are used not only for voice search optimisation but also for traditional SEO. In conclusion it is possible to say that voice search optimisation does not affect traditional SEO considerably. The main theme arose that in general the content has to be great in SEO.

7.2 Challenges of voice search technology expanding in Finland

The main challenges that arose from the qualitative research were location of the search, culture, contradiction between voice assistants and websites, technology, popularity, issues in data analysis and profitableness.

It was said in subchapter 6.3 it is not possible to use voice search everywhere, especially public places were mentioned as a place where people do not want to conduct searches out loud. There was also mentioned by interviewees cultural aspect as Finnish are quiet and reserved people so using voice does not come naturally. This is not mentioned in the theoretical framework but as I have lived in this culture I agree that this can be a challenge for voice search to overcome and not only in Finland but all around the world. Not only it matters where people search but there are delicate topics that people do not want to search out loud when there are other people around. This behaviour is connected to the adoption of the technology which was stated in subchapter 4.4. The trend would be that more people start using voice search in public the more natural it becomes. As it was said in subchapter 4.4 it is hard to impact on human behaviour and therefore it is a challenge for voice search to overcome. However, with risen popularity and acceptance of voice search it is possible. It just takes time to educate the consumers.

As it was stated in subchapter 6.3 there is a contradiction between voice assistants' goals and the goals of the websites. Websites want to gain visitors to be able to make sales and re-marketing but it is hard to do so for website visitors who want quick answers. Main goal of voice search assistants is to offer quick user experience. The challenge is how to make it appealing for websites to be optimised for voice search queries without losing website traffic or gaining benefit in other way.

As a consequence the problem with the latter is that with voice search the websites' are not making money at the moment. It was stated in subchapter 6.3 that the end goal of SEO is to make profit which voice search has not accomplished yet. Today, the searches done with voice search are quite simple such as weather forecasts and easy search queries. This claim is supported in subchapter 4.4. It is said that searches done with voice assistants are binary searches and to make a purchasing decision the searches would need to be more conversational than one sentence. It was mentioned in subchapter 6.3 that if it would be possible to have a full conversation with voice assistant it could be more valuable for businesses to optimise for voice search. Those search queries could lead customers to local businesses in a different way that traditional SEO is capable of doing now.

Continuing to the fact that the technology is not yet advanced. As it was mentioned in previous paragraph it is possible to do only simple searches with voice search. This claim is supported in subchapter 4.4 by Nicole Martin (2018) saying that it is limited what the users can search or ask using voice assistant or software.

Referring to unadvanced technology, in the subchapter 6.3 was also mentioned that in Finland language can be a barrier because it is a hard language for search engines and the voice assistant or software might misunderstand many words. This can affect voice search expanding to Finland on a bigger scale. This is supported in subchapter 4.4 by indicating that from the most popular voice assistants (Google Assistant, Apple's Siri, Amazon's Alexa and Microsoft's Cortana) the only voice assistant that supports Finnish language is Apple's Siri. It was also said that adding a new language to voice assistant is hard and multidimensional and requires significant amount of research and development which leads to slowed down voice search expansion to Finland.

In subchapter 4.4 Figure 13 indicates that as much as 37 % in the research of 600 survey participants said they were frustrated with voice search not understanding what they are saying. This leads to the fact that language is not problem only in Finnish but all over the world which proves that the technology is not developed yet to the level it is expected to be.

In subchapter 6.3 it was said that it is not possible to analyse the voice search results because there are no tools available. It was also explained in subchapter 6.3 that SEO is based on analysation and there are many tools for the traditional SEO to do the analysation. Through analysation it can be discovered which practises are working well

towards the goals which are wanted to achieve as well as which practises are not working and therefore should be reconsidered.

7.3 Present and the future of voice search

As it was specified in subchapter 6.4 voice search will not replace traditional search. It was said that voice search might become quantitatively more popular but it depends on how technology will evolve. As an example there was presented a possibility to have a conversation with voice search about a buying decision before it could grow nearly as popular as traditional written search. The current situation of voice search in Finland was agreed in subchapter 6.4 to be limited.

According to opinions in subchapter 6.3 voice search does not affect SEO in Finland at the moment. As there was seen challenges such as Finnish culture and behaviour, the language, technology development and issues with analysing the data, voice search was seen as it does not affect SEO in Finland at this very moment. It was also established in subchapter 7.1 that voice search optimisation does not affect traditional SEO considerably. It was also said in subchapter 6.4 that voice searching affects more peoples' behaviour than search engine optimisation.

In subchapter 6.4 there were suggested actions that Finnish companies could now take regarding the voice search optimisation. There was no any particular measure that was standing out of the suggestions. All of the interviewees suggested something different. The suggestions were from hiring a voice search expert to analysing own business to observing what is happening in the technology in other countries. Especially in the USA since it was mentioned that voice search technology is most developed and used in there in theoretical subchapter 4.4.

As possibilities of voice search there were mentioned new opportunities to use digital tools and opportunity to more effective time management as soon as the technology develops. There were also a speculation that there will not be one voice assistant that will be a market leader but many different assistants performing different tasks. All interviewees expressed excitement to see how voice search and voice assistants will develop in the future.

8 Evaluation

In this chapter will be firstly explained trustworthiness of the study that was conducted with the SEO professionals. After that the trustworthiness will be evaluated according to the four principles that will be explained. Then there will be done a self-reflection of the process, outcome and the evaluation of the challenges that were accomplished.

8.1 Trustworthiness of the study

Trustworthiness of the study includes four aspects: credibility, dependability, transferability, and confirmability. Credibility is seen as the most important criterion in establishing trustworthiness of the study because it obligates the researcher to link the research study's findings with reality in order to demonstrate the truth of the research study's findings. (Statistics Solutions b, s.a.) Dependability shows if the research study's findings are consistent and repeatable (Statistics Solutions c, s.a.). Transferability is established by demonstrating that the research study's findings could be applicable to other contexts, situations, times, and populations (Statistics Solutions e, s.a). Lastly, confirmability is the amount of neutrality in the research study's findings and the confirmation that the researcher has used solely participants' narratives and words without biased opinion (Statistics Solutions f, s.a).

There are several techniques to establish the credibility of the research. Triangulation is one of the most used ones. (Statistics Solutions b, s.a.) There are four kinds of triangulation methods that can verify and validate qualitative analysis. First one is methods triangulation which means checking out the consistency of findings generated by different data collection methods. Second is triangulation of sources which means examining the consistency of different data sources within the same method. Third one is analyst triangulation which consists of using multiple analysts to review findings. Last one is theory triangulation which works by using multiple perspectives or theories to interpret the data. (Patton 1999, p. 1193.) In this thesis was used triangulation of sources method. There were interviewed multiple persons and used literature of theoretical chapters to refer to the study and discuss the findings.

Dependability can be established by several techniques. One of the best techniques is to have an outside researcher to confirm the findings by conducting an inquiry audit, also called an external audit. Meaning that the outside researcher would examine the processes of data collection, data analysis, and the results of the research study. This is done to make sure that there was not anything missed in the research study, or that the original researcher was not distracted while conducting his or her final report. (Statistics

Solutions c, s.a.) Dependability of the research also means that the study could be repeated by other researchers and that the outcome would be consistent. (Statistics Solutions d, s.a). In this thesis, it is possible that while composing the interviews the data collection and analysis can be defective because an external audit was not presented. As well as, the sampling size and nature of the semi-structured interviews is causing difficulties to repeat the study to get exact same results. Therefore, dependability of the study cannot be verified.

In transferability it cannot be proved that the study's findings could be applicable to other contexts, situations, times, and populations but instead it is important to provide the evidence that it could be applicable. One of the techniques to establish transferability is providing thick description of the phenomenon. It is a technique in which a qualitative researcher provides a powerful and detailed description of their experiences during data collection. Meaning that talking about where the interviews occurred or the possibility of participants conducting the interview after work and other aspects of data collection that help provide a richer and fuller understanding of the research setting. (Statistics Solutions e, s.a.) Transferability in this thesis cannot be established because the interviews were conducted via Skype and Microsoft Teams and therefore there cannot be described much in detail about the surroundings. As well as there was not asked about nor acknowledged interviewees' feelings or experiences.

Confirmability establishes confidence that the research study's findings are based on the participants' descriptions and words rather than potential researcher preferences of the outcome. In other words, confirmability helps to verify that the findings of the research are shaped by participants more than by the researcher. Audit trail is the most popular technique to establish confirmability. It is also really useful when writing the results chapter because there has been detailed the process of data collection, data analysis, and interpretation of the data. (Statistics Solutions f, s.a.) Process of data collection, data analysis and interpretation of the data are explained in chapter 5 of this thesis.

There were interviewed four SEO professionals. It is suggested that the adequate amount of participants in qualitative research should range from 5 to 50 participants to get accurate results (Dworkin 2012). Because of lack of the interviewees it can be said that the data cannot be generalised. On the other hand it is only one person less than the suggested minimum of 5 participants and the data acquired can be still used to understand the phenomena.

To conclude the most important aspect of trustworthiness of the study credibility can be established thorough the data showed above in this chapter. As there was mentioned, there was used multiple sources of data and the research data was compared to the theoretical data. The confirmability can also be established because of the information indicated in this chapter above explaining that process of data collection, data analysis and interpretation of the data are defined in chapter 5 of this thesis. Therefore. it can be assumed that the research has credibility and confirmability. On the other hand the dependability and transferability of the research cannot be established because of lack of evidence and missing data. In conclusion 2 out of 4 trustworthiness aspects are established and as already mentioned one of the most important aspects is confirmed. The results and trustworthiness of the research can be assumed to be correct but not generalised.

8.2   Self-reflection

The process of writing the thesis has had its high's and low's. I experienced high's after achieving something difficult or overcoming some issue that was slowing me down. Low's I have felt when the pressure was feeling unbearable or when I did something for really long time without achieving it or when I had those days that I could not write one single page, even though I was researching the whole day about the subject.

As for many other people in their bachelor's, for me it was the first time writing academic paper that was this long. I had written reports and essays before my bachelor's thesis but never a scientific paper that is over 30 pages. Anyhow, this project consisted of so many aspects such as acquiring data, writing, becoming an expert in what I write, conducting research, analysing the research data and making conclusions from it. In addition to the latter, writing in English which is not my mother tongue, checking spelling and grammar and much more.

This project has taught me many things and many of them I did for the first time in my life. As I mentioned before I never wrote anything this long but additionally to that I learnt how to conduct a research, analyse it and conclude my thoughts. The difficulties that I faced included also doing this whole project remotely in Spain where I was at the time doing my internship.

In the beginning it was hard to find a suitable thesis topic but after discussing it with my thesis supervisor and researching I could find one that was interesting for me. It took some time from the start but I could manage and compensate it during the project. Since, I was in Spain during writing the thesis it was hard to find good books and academic

sources for it in a language I could understand fluently. Even though I learnt Spanish during my time in Spain it was not on the level that I could read books about SEO or qualitative research. Nonetheless, I managed to use some books and e-books, articles, blog posts and videos to acquire the data.

To conclude this project was hard but teaching and I learned a lot. Despite the struggles I enjoyed writing my thesis most of the time and it did not feel so hard to overcome. Of course as I already mentioned I also had days that I could not write one single word and it was frustrating at the time. In the end I was satisfied with the outcome and I am glad I achieved this step in my life and I am looking forward for more challenges to come.

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Appendices

Appendix 1. The interview questions in Finnish

<u>Haastateltavan taustatiedot</u>
- Mikä on sinun erikoisosaamisen alue/osasto ?
- Kuinka pitkään olet työskennellyt hakukoneoptimoinnin ja markkinoinnin parissa?

<u>SEO trendit</u>
- Mitkä ovat hakukoneoptimoinnin ajankohtaiset trendit tällä hetkellä? Mitkä asiat ovat pinnalla? Mistä keskustellaan?
- Miten hakukoneoptimointi tulee mahdollisesti muuttumaan tulevaisuudessa?

<u>Äänihaku</u>
- Miten äänihaku tulee muuttamaan hakukoneoptimointia?
- Miten äänihaku tulee huomioida hakukoneoptimoinnissa ja verkkosisältöjen tuottamisessa?
- Miten hakukoneoptimointi eroaa kun kyseessä on äänihaku?
- Mikä on äänihaun asema tulevaisuudessa – korvaako äänihaku kirjoitetun haun?
- Miten yritysten pitäisi huomioida äänihaku ja sen mahdollinen lisääntyvä käyttö?

Appendix 2. The interview questions in English

Background information of interviewee
- Which are of expertise you are particularly specialised in?
- How long have you been working in SEO and marketing?

SEO Trends
- What are the trends in SEO now? What is trending at the moment? What is discussed among the professionals?
- How SEO will possibly change in the future?

Voice Search
- How voice search will change SEO?
- How voice search needs to be acknowledged while conducting SEO and writing online content?
- How doing SEO differs from optimising for voice search?
- What will be the role of voice search in the future? Will it eventually replace traditional search?
- How companies should take into account voice search and its growing use and popularity?