# PERSPECTIVE OF SMALL ENTERPRISES – HOW WEB ANALYTICS ARE USED BY FINNISH ONLINE RETAILERS?

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**ABSTRACT**

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Abstract
In order to succeed in the digital era, it is important to be able to track and understand customer behaviour in the online environment. Web analytics can offer valuable insight for decision-making, but especially small enterprises may lack some crucial components, such as know-how and resources, which prevents them from utilizing web analytics with a full potential. Typically, owner-managers in small companies are in a crucial position, and they have a huge impact, whether analytical solutions are adapted or not. Analytical solutions are nowadays easily available, and they are easy-to-use, but their professional usage does not come without any learning. However, it would be important, that every company would be able to use these tools in their daily business operations.

Hence, the aim of this research is to increase the knowledge about the usage of web analytics within small enterprises. We investigate this phenomenon through three themes: content, process, and context. These themes answer the questions, that (1) what kind of data is collected, (2) how the data is managed within a company, and (3) how the organizational context affect on the usage of web analytics. A qualitative approach was chosen for this research, because the nature of this study is descriptive. 19 semi-structured interviews were conducted with small Finnish E-commerce businesses to shed light on these themes. The material was then analyzed through content analysis, and the previous theory gave a direction for the analysis process.

This study is consistent with the previous literature about the usage of web analytics. The findings indicate, that the usage of web analytics is quite ad-hoc, and it is usually based on urgent needs and ongoing projects. Many companies do not have time to monitor the data regularly, but the right data is looked for, when it is really needed. The most popular measures include different variations of sales data, the information about traffic sources, and marketing profitability. The study revealed, that the contextual factors have the biggest impact on a company's ability to utilize web analytics. First of all, there is a limited amount of time and resources, which slows down the usage of web analytics. Secondly, know-how and skills have a major impact, whether analytical applications can be used. Thirdly, the level of a company's marketing activity determines, if there is an actual need for measurement. To examine the contextual factors more closely, a contextual framework was created, which examines the relationship between the level of know-how and the usage of web analytics. Finally, the framework presents three types of companies, which have similar characteristics – beginner, conscious and advanced.

Key words
Web analytics, clickstream data, marketing measurement, E-commerce, small and medium-sized companies

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**TIIVISTELMÄ**

Tekijä
Esra Pirinen

Työn nimi
Miten data-analytiikkaa hyödynnetään pienissä suomalaisissa verkkokauppayrityksissä?

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Tiivistelmä
Yritysten on tärkeää seurata ja ymmärtää asiakkaiden toimintaa verkossa, jotta osataan tehdä liiketoiminnan ja markkinoinnin kannalta hyödyllisiä päätöksiä. Erilaisten analytiikkatyökalujen avulla datan kerääminen verkkosivuilta on tänä päivänä melko vaivatonta, yksinkertaista, ja useimmiten myös ilmaista. Varsinkin pieniltä yrityksiltä saattaa kuitenkin puuttua tarvittavaa tietotaitoa sekä resursseja, eikä dataa siksi päästä hyödyntämään niin paljon, kuin ehkä olisi mahdollista. Pienissä yrityksissä on monesti perustajahenkilö tai omistaja, joka vastaa liiketoiminnan eri osa-alueista, ja on siis paljon hänen omasta kompetenssistaan kiinni, kuinka paljon digitaalisia työkaluja voidaan omaksua yrityksen käyttöön. Olisi tärkeää, että kaikilla yrityksillä olisi mahdollisuus ottaa analytiikkatyökalut hyötykäyttöön oman yrityksen tavoitteiden saavuttamista varten.

Tämän tutkimuksen tarkoituksena on siis lisätä tietoa siitä, miten data-analytiikkaa käytetään pienissä suomalaisissa, verkkokauppaa tekevissä, yrityksissä. Ilmiötä tutkitaan kolmen pääteeman kautta: sisältö, prosessi ja konteksti. Nämä teemat asettavat tälle tutkimukselle kolme kysymystä: (1) millaista dataa kerätään, (2) kuinka dataa käsitellään yrityksessä, ja (3) miten yrityksen konteksti vaikuttaa datan käyttöön. Tutkimustavaksi valikoitui kvalitatiivinen tutkimus, sillä tutkimus on luonteeltaan kuvaileva. Aineistonkeruumenetelmänä toteutettiin 19 teemahaastattelua yhdessä pienten suomalaisten verkkokauppiaiden kanssa. Kun aineisto oli kerätty, se analysoitiin noudattamalla sisällönanalyysin periaatteita niin, että teoria oli johdattamassa tulosten muodostumista.

Tämän tutkimuksen tulokset ovat pitkälti yhteneväisiä aiemman tutkimustiedon kanssa, jossa on tutkittu analytiikan käyttöä yrityksissä. Tulokset osoittavat, että datan käyttö pienissä yrityksissä ei ole kovin organisoitua, vaan se perustuu yleensä senhetkisiin tarpeisiin ja päätöksiin. Dataa ei välttämättä seurata säännöllisesti, mutta tarvittava tieto etsitään aina silloin, kun tehdään siihen liittyviä päätöksiä. Suosituimmat mittarit liittyvät myyntilukujen erilaisiin muotoihin, sekä siihen, mistä kanavista sivuvierailijat tulevat, ja miltä markkinoinnin tuloksellisuus näyttää. Tuloksista kävi ilmi, että yrityksen kontekstiin liittyvät tekijät vaikuttavat eniten, miten dataa pystytään hyödyntämään yrityksessä. Ensinnäkin, puute ajasta ja resursseista hidastaa datan käyttöä. Toiseksi, tietotaidolla ja osaamisella on keskeinen merkitys, jotta analytiikkaa voidaan käyttää tehokkaasti. Kolmanneksi, yrityksen markkinointiaktiivisuus määrittelee, kuinka suuri tarve yrityksellä on seurata data-analytiikkaa. Näiden pohjalta tutkimuksessa esitellään kontekstuaalinen viitekehys, jossa osaamisen sekä datan käytön keskinäistä suhdetta tarkastellaan kolmen tyyppiesimerkin kautta – aloittelijat, tietoiset sekä osaavat tekijät.

Asiasanat
Verkkoanalytiikka, markkinoinnin mittaaminen, verkkokauppa, pienet yritykset

Säilytyspaikka
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# 1 INTRODUCTION

Online shopping keeps growing both in Finland and globally. Annual growth is remarkable, because consumers are buying goods and services from online shops more often and in bigger amounts (STT, 2018). Recent rumors have also said, that the global e-commerce giant, Amazon, might be expanding to the Nordic Countries in the near future (Lehtiniitty, 2018). Amazon is a great example of a company, which is strongly managed by data and analytics (Davenport, 2006). The completion will become much harder, if Amazon enters Nordic markets, as Amazon sets various challenges, such as, because of their efficient logistical solutions, for local e-commerce businesses (Högmander, 2018).

Technology and globalization offer both opportunities and big challenges for entrepreneurs (Fillis & Wagner, 2005). But it means, that clear and proactive actions should be taken, if Finnish online retailers want to succeed both domestically and globally. In order to succeed in e-commerce environment, managers need to have a deeper understanding of customers' online behavior (Bucklin & Sismeiro, 2009), since customers are the key element to the success of online shops (Phippen, Sheppard & Furnell, 2004). On the bottom line, it is always the customer (website visitor), who makes the final choice. He or she can always switch to another provider, because there will always be other options available online (Phippen et al, 2004). Technological developments have brought more power to the consumers, which requires marketers to engage more in measurement and outcome evaluations (Hennig-Thurau et al, 2010). Additionally, Leeflang, Verhoef, Dahlström & Freundt (2014) conducted, that harnessing deep customer insights with decision-making is the most important challenge for marketers in the digital era.

Therefore, the efficient use of web analytics already is – but especially will be a crucial management tool for online shops in the future (Phippen et al, 2004), as clickstream data is one of the most useful tools in an attempt to evaluate customer behavior (Su & Chen, 2014). By harnessing web analytics to understand customer behavior and to make better decisions, companies are able to gain competitive advantage (Davenport, 2006; Germann, Lilien & Rangaswamy, 2013). With web analytics, companies are, for example, able to increase their website value, customer experience and marketing effectiveness (Hong, 2007). Also, the digital environment offers many different possibilities to gather clickstream data, which can improve the measurability of marketing actions (Järvinen et al, 2015). Thus, understanding web analytics is one of the most important skills in the context of digital marketing (Leeflang et al, 2014).

In the field of marketing, a lot of valuable metrics exist, but their potential is not often fully released (Stewart, 2009). Especially, when looking at e-commerce, the adoption rate of different web analytics tools is quite high, but firms do not seem to utilize them as much as they could (Bucklin et al, 2009; Chaffey et al, 2012; Järvinen et al, 2015;). The low usage of web analytics indicates, that managers are not able to see the benefits, which could be acquired through them (Germann et al, 2013). Typically, website performance and online consumer behavior

is measured somehow, but companies do not know precisely, how to use them in strategic decision-making (Weischedel, Matear & Deans, 2005). Marketers have also reported, that it is often hard to see the financial impact in the web metrics, and also, what the measures precisely indicate (Leeflang et al, 2014).

In practice, many companies use web analytics only for ad-hoc purposes, or to follow the amount of website visitors without a deeper understanding (Welling et al, 2006; Hong, 2007). Moreover, clickstream data is usually used to track the amount and demographics of website visitors, and to observe their average visiting times. While these metrics are very useful, there would be so much more valuable information to use. (Hong, 2007; Bucklin et al, 2009.)

The blame is not on the marketers or entrepreneurs though, as professional usage of web analytics requires a lot of effort and work. Especially, small businesses are usually very willing to utilize new technologies, such as web analytics, but they often lack the required amount of knowledge and skills (Alford & Page, 2015). Indeed, it is often people and process, which slow down the implementation of web analytics (Chaffey et al, 2012). Hence, it is no surprise, that implementing a valuable web analytics process requires managers to make changes in their organizations (Davenport, 2006). Thanks to the applications like Google Analytics, the basic use of web analytics still remains relatively easy and simple (Pakkala, Presser & Christensen, 2012).

Many earlier studies have focused on the usage of web analytics within larger corporations (e.g. Germann et al, 2013; Järvinen et al, 2015). On the other hand, another research direction has examined technology adaption in small companies, but they have usually had a broader view, which has included a wide selection of tools from websites in general to communication and networking tools (e.g. Simmons, Armstrong & Durkin, 2011; Alford et al, 2015). Thus, we want to combine these research directions together and concentrate on web and marketing analytics within small Finnish enterprises.

According to Suomen Yrittäjät (Finnish Enterprises, 2016), 93,3 percent of Finnish companies are micro-enterprises, which is defined here, that they have less than 10 employees. Hence, they comprise the clear majority of existing Finnish enterprises, and they employ about 25 percent of the personnel in Finnish companies. It is then very clear, that their importance for Finnish economy is noteworthy important. The situation is also very similar in other countries, because micro-enterprises always constitute the biggest portion of local companies. In the whole EU, small and medium-sized companies represent 99 percent of all enterprises (EUR-Lex, 2016). Thus, they are not only very interesting object for research, but they also have a very strong strategic and economical importance. In this study, when we talk about small enterprises, we refer to companies, which employ up to 50 people.

## 1.1 Study objective and research questions

Therefore, in this study, we want to examine, how small e-commerce businesses in Finland are able to utilize web analytics in their daily operations and decision-making. The aim of this research is to increase the knowledge about the usage of web analytics within small firms. We use Järvinen et al's (2015) three-dimensional framework – (1) content, (2) process and (3) context – to organize this study into clear sections. We want to describe in detail, what kind of web analytics are used, how they are used, and what kind of contextual factors support the usage of analytical tools. Thus, based on these dimensions, three research questions are placed:

1. What kind of data is collected?
2. How is the data managed within the company?
3. How does the organizational context affect on the usage of web analytics?

As a research method, we chose to use qualitative approach, because the nature of this study is descriptive, and the phenomenon is investigated in specific contexts. To find purposeful and relevant answers to our research questions, 19 semi-structured interviews with small Finnish online retailers were conducted in May and June 2018. In addition, most of our interviewed firms were micro-enterprises, which employ 1-4 people. The data was then analyzed by conducting a content analysis, which also included thematising and typification. The interviews and this study are part of a bigger research project, which investigates the internationalization and data solutions within Finnish e-commerce businesses.

## 1.2 Structure of the study

This study consists of five chapters. After introduction, we start by looking at the theoretical background, which is discussed in chapter three. It is divided into three main themes – content, process and context. In the fourth chapter, research methodology, analysis techniques and the gathered data are presented. Next, the results are presented in chapter four. We first have a look on the three dimensions – content, process and context, which is then followed by our contextual framework. The framework presents the usage of web analytics in relation to a company's skills and know-how. Finally, in chapter five, we draw conclusions based on our results, we suggest recommendations for future research, and evaluate the limitations of this study.

# 2 THEORETICAL BACKGROUND

## 2.1 Web analytics

We start by defining the most important concepts for this study: 'clickstream data' and 'web analytics'. They have received increasing attention in the literature in recent years, while many issues still remain not answered, and thus, more research is needed. After defining the central concepts, a thorough discussion of the current knowledge about web analytics is followed. In order to fully understand the purposeful usage of clickstream data and web analytics, some aspects from performance measurement research is included in the literature review alongside with the more contemporary research about web analytics. We end this first chapter by presenting a theoretical framework originally developed by Pettigrew and Rosenfield (1989), which was later adapted to the context of web analytics by Järvinen et al (2015). This framework forms a base for this study as well, and thus, its dimensions – content, process and context – are discussed in detail in the next sub-chapters

Bucklin et al (2009) define clickstream data "as the electronic record of a user's activity on the Internet." Clickstream data is easy to collect, and compared to surveys and other methods, clickstream data offers a lot of information about the website visitors with less effort (Weischedel et al, 2006). By analysing clickstream data, companies are able to recognize, how their website is used and navigated (Lee, Podlaseck, Schonberg & Hoch, 2001). It is one of the most widely used forms of data, and numerous companies utilize precisely clickstream data in their decision-making (Shahriar & Wamba, 2016).

It is also worthwhile to make a distinction between user-centric and site-centric clickstream source. Site-centric source collects data on a certain website and it can efficiently record visitor behaviour on that site. User-centric source, on the other hand, records behaviour on all websites, but it is based on a panel data, which is consisted of a sample of participating people. Both collecting systems have their pros and cons, but because of the popularity of site-centric data, which applications like Google Analytics utilize, site centric clickstream data is examined in this study. (Bucklin et al, 2009.)

Consequently, Järvinen et al (2015) define web analytics as: "a tool that collects clickstream data regarding the source of website traffic (e.g., e-mail, search engines, display ads, social links), navigation paths, and the behaviour of visitors during their website visits and that presents the data in a meaningful format. The WA data are used to understand online customer behaviour, to measure online customers' responses to DM (=digital marketing) stimuli, and to optimize DM elements and actions that foster customer behaviour that benefits the business." In e-commerce, web analytics can tell, how customers find the online shop, and how they engage with the content on the website (Lee et al, 2001). Moreover, Wedel et al (2016) define marketing analytics "…as the methods for measuring, analysing, predicting, and managing marketing performance

with the purpose of maximizing effectiveness and return on investment (ROI)." Thus, the main purposes for web analytics usage are the measurement of marketing actions, website performance monitoring and gaining better customer insight.

In the performance measurement context, it is a widely accepted fact, that marketing has to be accountable nowadays (Clark, Abela & Ambler, 2006). Patterson (2007) argues, that out of all possible challenges, proving marketing's value is the biggest challenge for marketers. Evaluating marketing actions through financial measures and proving marketing's productivity has been a major issue already for some time (e.g. Rust et al, 2004; Ambler & Roberts, 2008). Hence, the call for marketing metrics, which are accountable and linked to financial performance, is evident. Marketing is lacking standard measures, which are simply linked to economic or marketing outcomes. (Stewart, 2009.) Thus, these findings should be applied to the web analytics context as well.

Weischedel et al (2006) argue, that with the help of web analytics, companies are able to offer better quality on their website. E-Quality has received a lot of attention in the e-commerce literature throughout the years, and based on that literature, efficiency and fulfilment are regarded as unifying themes, which are present in the website quality (e.g. Wolfinberger et al, 2003; Parasuraman et al, 2005). Much research has addressed these themes from many different angles. However, most studies agree on the fact, that ease-of-use remains as the most important factor of the attributes (e.g. Klaus, 2013; Rose et al, 2011; 2012). These elements can be also enhanced with a purposeful usage of web analytics.

Thus, applying a structured web analytics system brings many benefits to a company, and a proper use of web analytics can be a source for a sustainable competitive advantage (Germann et al, 2013). In the previous literature, the main interest has been, how the implementation of web analytics helps companies to improve performance and make better decisions (Shahriar et al, 2016). Firms with marketing performance measurement systems appear to outperform their competitors (Patterson, 2007). According to the study by O'Sullivan & Abela (2007), marketing performance measurement ability is positively connected to firm performance, and it improves CEO's satisfaction with marketing actions. Thus, it clearly links to the concept of marketing accountability too (e.g. Clark et al, 2006). Moreover, the usage of web analytics is positively connected to a marketing mix performance (Mintz & Currim, 2013; 2015).

However, while clickstream data is able to address the questions of 'what' and 'why', it cannot clearly clarify 'how' and 'why' customers are behaving in a certain way. Still, web analytics offer managers important, quantitative, insights for rational decision-making. Instead of trusting their intuition, managers can nowadays look at the clickstream data and make decisions, whether different actions should be carried out or not. (Weischedel et al, 2006.)

Nevertheless, managers have reported that they would like to know even more about specific visitors. Hence, in order to better understand what really happens in the online environment, qualitative data could be included in the analysis together with clickstream data. Although that would require more effort,

for example collecting customer surveys, it would give a bigger picture for managers. (Weischedel et al, 2006.) Also, Bucklin et al (2009) suggest that clickstream data could be complemented with additional data from various different sources. Web analytics is just one tool among many other methods, and by combining several information sources together, the best picture can be achieved (Järvinen et al, 2015; Hanssens & Pauwels, 2016).

Finally, based on Pettigrew et al.'s (1989) framework, Järvinen et al (2015) divided web analytics performance measurement into three dimensions: content, process and context:

- *Performance measurement content* describes characteristics of the actual metrics system: what is measured and why. This gives a holistic idea about the metrics in use. Main points usually indicate, that metrics should be clearly defined and based on marketing objectives. Thus, the phase 'design' belongs to this section.

- *Performance measurement process* refers to the actions like data gathering, analysis, reporting, performance improvement and updating the metrics. Hence, it includes all phases, which companies have to go through when implementing and using web analytics.

- *Performance measurement context* describes the factors that may affect on the web analytics usage internally or externally. This section includes capabilities in the company, for example skills and competence, technological solutions, organizational culture and management. Besides, from the perspective of small enterprises, the role of owner-manager is very important.

Järvinen et al (2015) conducted, that all these three dimensions have an impact on company's ability to utilize web analytics in their operations and decision-making. That is why, managers should ensure that these dimensions meet optimal conditions, because besides, according to Bourne, Neely, Platts & Mills (2002), these dimensions determine, whether a metrics system will have a success or fail. The dimensions and their specific attributes are discussed in detail in the following sub-chapters.

## 2.2 Web analytics content

We will firstly discuss the data content. Three perspectives are applied to examine the contents of a metrics system, which basically answer the questions of "what, why and how?" Hence, based on the previous literature, we will go through, (1) what kind of metrics should be selected and why, and (2) how they should be organized and presented in order to create a meaningful and understandable system. Finally, we will have a look, (3) which web metrics are found to be the most popular and considered the most valuable in the previous literature. At last, we also have a brief discussion of the online purchasing path, because it is closely related to the online measurement.

### 2.2.1 Selection of metrics

Numerous scholars point out that a solid metrics system has to be clearly linked to both business and marketing objectives (e.g. Weischedel et al, 2006; Chaffey et al, 2012; Järvinen et al, 2015). Therefore, metrics should basically measure, how company's strategy is working out (Bourne, Mills, Wilcox, Neely &, 2000). It is necessary to align corporate goals and underlying business processes with the metrics, because it is the only way to track the progress and see the results (Clark et al, 2006). The 'design' phase has two important goals: key objectives have to be recognized first, and only then, the designing of specific metrics can start (Bourne et al, 2000). Doing analytics without a clear business direction do not bring obvious benefits (LaValle et al, 2011).

Seggie, Cavusgil & Phelan (2007) provide seven possible changes, which could improve the accountability of the marketing metrics systems. Firstly, they suggest marketers to switch (1) from non-financial to financial metrics and (2) backward-looking metrics to forward-looking ones. Secondly, metrics should be adjusted to reflect (3) long-term objectives rather than short-term goals, and instead of collecting (4) macro data, marketers should collect more sophisticated micro data. Moreover, rather than (5) having several independent metrics, measures should describe causal chains. Finally, changes should be made from (6) absolute to relative measures and (7) subjective to objective measures. (Seggie et al, 2007.) While these suggestions have important notions, it may not be a good idea just to execute these changes, as the best combination becomes through a wide selection of metrics.

Indeed, from the managerial perspective, it is important, that the metrics system has a clear linkage to financial performance (Stewart, 2009). From a strategic point of view, metrics, which clearly indicate the financial impacts of actions, are the most valuable (Patterson, 2007). However, it is not only financial measures, but also non-financial measures, which create the best combination together (O'Sullivan & Abela, 2007). According to Mintz et al (2013), non-financial marketing measures are as important as financial measures. Thus, metrics systems should contain a broad set of measures, including both short-term and long-term measures (Stewart, 2009; O'Sullivan & Abela, 2007). Typically, short-term

metrics are good indicators to monitor and control the current performance, while long-term metrics are better in planning future actions (Clark et al, 2006). Hence, it is worthwhile to include all kinds of measures to a metrics system.

### 2.2.2 Scope – focus on the primary interests

Accordingly, there are unlimited amount of different possibilities to measure data, so managers should carefully choose the best combination of metrics for their specific marketing objectives, because gathering unnecessary material is confusing and a waste of resources (Phippen et al, 2004; Welling et al, 2006; Weischedel et al, 2006). Selecting the right metrics is not an easy business though (Clark et al, 2006). The focus must be set on the most relevant and essential issues (Patterson, 2007). Weischedel et al (2006) point out, that it is crucial to know, what information is needed, and how the data helps to reach the marketing objectives. Indeed, it is more important to define the questions first, which help to reach the goals, because that information helps one to collect exactly the right data (LaValle et al, 2011). In practice, Järvinen et al (2015) found out, that companies, which only choose metrics that are easily available and considered useful, do not gain such benefits than companies, which select their metrics based on their individual marketing objectives.

In order to create an efficient web analytics system, it is important to group different measures into different categories (Chaffey et al, 2012). Additionally, metrics should be prioritized by their relevancy and organized clearly in order to avoid information overload (Järvinen et al, 2015). Indeed, setting the right focus, "Why do we gather exactly these data?", is very important (Davenport, 2006). By having a structured metrics system, where all information is easily available, the usage of web analytics is easier for different decision-makers in the organization (Chaffey et al, 2012).

In online context, the purpose of the website determines, what kind of metrics are needed (Patton, 2002). Website success can be defined in many ways, such as return on investment, profitability, reliability, usability or competitive advantage, and what works for another company very well, might be totally different for another website (Phippen et al, 2004). Also, Hong (2007) conducted, that websites have different objectives, and thus, they need different kinds of measures. Hence, no company is similar, and targets and needs are much different, which also means, that metrics systems have to be unique and objective-driven (Phippen et al, 2004). According to Welling et al (2006), it is basically impossible to create a single framework of good web metrics, which could be applied universally by all online shops.

Patterson (2007) presents 'the metrics continuum', which divides marketing metrics into five categories. Considering this study, only the first three categories are actually relevant, because the latter two categories in the model are very sophisticated and predictive. Starting from the lowest point of the continuum, the types of measures develop from simple indicators into complex calcu-

lations. However, it might be necessary to include metrics from all the three categories to the company's metrics system, in order to reach the best possible combination. The different categories are listed below:

1. *Activity-based metrics* include everything, that can be simply counted, such as visits or page views. These do not have any sort of clear linkage to business outcomes.

2. *Operational metrics* are meant to improve the effectiveness, and thus, these have a clearer connection to the business outcomes. Examples of operational metrics include numbers such as cost per lead, campaign ROI and conversion rate.

3. *Outcome-based metrics* offer a thorough strategical perspective, which is not reached in operational metrics. Examples of these metrics are market share and lifetime value.

The model is developed for marketing measurement in general, so we have to adapt it to the context of web analytics. Thus, it could be argued, that the data generated through websites mainly fit into the first two categories. At least, we argue, that developing web metrics, which are really outcome-based, would require a lot of knowledge from marketers.

### 2.2.3 Popular web metrics

If we take a closer look at the actual web metrics, the most popular web metric tends to be the website traffic, which is a very simple way to follow the website performance (Welling et al, 2006; Hong, 2007; Bucklin et al, 2009). This has been considered as a straightforward metric to follow the changes in the success of a website (Weischedel et al, 2005). Based on Hong's (2007) findings, other important purposes to measure online metrics, reported by companies, are "spotting popular contents, improving site contents, measuring the effectiveness of ad campaigns/promotions and improving site navigation", which are all closely related to visitor's behaviour on the website. Weischedel et al (2005) reported that user behaviour, surfing patterns and changes over time are popular metrics, besides the widely used traffic numbers. Finally, visitor demographics are considered as an interesting information in many cases (Hong, 2007; Bucklin et al, 2009). Based on these multiple findings, it is perhaps no surprise that Hong (2007) conducted that the top three web metrics are visits, page views and best pages. Hence, in the light of Patterson's (2007) metric categorization, all these metrics are quite clearly *activity-based*, and thus, there is no clear linkage to financial performance.

Accordingly, online retailers should closely follow conversion rates and average purchasing values (Weischedel et al, 2005). Patton (2002) proposes, that it is important to combine revenue-based metrics with customer behaviour in the e-commerce context, such as comparing conversion rates with drop-off rates.

Therefore, information about navigation paths and entry and exit pages is considered important. Besides these, referrals and click-through rates are usually also important numbers together with conversions (Weischedel et al, 2005). Thus, these metrics represent *operational metrics* as indicated in Patterson's study (2007).

Many interesting observations can be drawn from these most popular web metrics. Rather than utilizing web analytics for strategical purposes, companies' perspective is more operational, and focuses on short-term activities and performance monitoring. However, this helps companies to spot possible problems on the website and correct them, which then offers better value and a smoother experience for visitors. (Hong, 2007.) Besides, some other studies have conducted that even simple data, such as visiting rates, are good indicators of customer behaviour and buying propensity (Moe & Fader, 2004). At simplest, visitor tracking can tell marketers, which marketing actions work, and which do not, because the changes in the traffic amounts are easy to spot (Wilson, 2010). Accordingly, Pakkala et al (2012) point out that the usage of web analytics is nowadays relatively easy, even without a big effort or financial investments.

On the other hand, the usage of simple measures also has its criticism. In the light of Patterson's (2007) categorization, these metrics are not very sophisticated nor financial-related. Thus, by following only these basic measures, the full potential of the available information is not harnessed (Bucklin et al, 2009). Phippen et al (2004) argue, that simple and basic metrics, such as hits and page views, do not offer enough insight for marketers, and they can even lead to inaccurate interpretations. However, together with advanced metrics, these basic indicators can offer valuable information as well. One of the issues, which Davenport (2006) recognized, that companies with successful analytics system do, is that they know, how to delve deeper and look beyond the basic metrics.

In conclusion, we suppose that the metrics system should be based on a company's marketing objectives, and the selection of metrics should be justified with company's personal needs. A broad set of measures from financial to non-financial, activity-based to operational metrics, should be included in the system.

### 2.2.4 Online purchasing path

We will also briefly discuss the online purchasing path, because by tracking the customer's online journey, marketers are able to optimize the actions taken in the online environment (Leeflang et al, 2014). The views about the online purchasing path are somewhat similar, and some of the central issues are discussed in the following section. As stated by Järvinen et al (2015), a great way to structure web metrics is to categorize them according to the phases of the online customer journey. This can also be called as 'Customer lifecycle analysis', where the interaction between the customer and the website on different stages is examined (Phippen et al, 2004).

It could be argued, that the online purchasing path is more complex than the traditional shopping path. Because competing online shops are just few clicks away on the Internet, consumers are able to visit multiple websites during several occasions before the actual purchase (Park, 2017). It is important to note, that

paths to the purchase can still have big differences across industries (Muret, 2013). In general, however, as customers visit online shops many times, later visits tend to convert more likely (Park, 2017), and customers who visit the online shop more often have a greater propensity to buy (Moe & Fader, 2004). Also, it may not be a surprise, that orders with higher value usually take a longer time compared to smaller purchases (Muret, 2013).

One way to define the online purchasing path from the managerial point of view is a three-staged approach, which consists of (1) traffic generation to website, (2) website behaviour and (3) revenue and profits (Järvinen et al, 2015). A large number of metrics can be put in each of the categories. Central issues to follow from this point of view are the amount of customers in each stage, customers' movement between the stages and the amount of 'dropouts' – customers who exit the purchasing path at some point (Phippen et al, 2004). This helps marketers to notice, which steps are functional, and which contain problems.

According to Lee et al (2001), there are four general steps in online shopping. (1) Product impression happens, when a customer comes across with a link to a product page. (2) Clickthrough happens, when the customer clicks on the link, which he or she just saw, and now lands on the product page. (3) Basket placement naturally describes the stage, when the customer moves chosen products to the shopping basket, and finally, (4) purchase, in other words, conversion happens.

In addition, Chaffey et al (2012) present RACE framework, which includes four following steps: Reach, Act, Convert and Engage. The framework covers the whole customer journey through the online environment from the managerial perspective. These steps are shortly presented here. 'Reach' stands for the acquisition of customers from different sources in order to generate traffic to the online shop. 'Act' covers the phase, when the customer becomes familiar with the website/company and navigates through the information and content. 'Convert' describes the stage, where customer makes a purchase or somehow brings value to the company. Finally, 'Engage' means building customer relationships through different post-purchase activities.

The previous examples covered the whole journey from the start to the finish, and now we will have a look on the steps, which occur on the website itself. Tamimi, Rajan & Sebastianelli (2003) identify four phases, which usually take place on the website. On the first stage, the visitor enters the home page and familiarizes with the content. On the second stage, the visitor browses and chooses desired products from the product catalogue. It is followed by the completion of an online form, which is the third stage. On the fourth and final stage, possible post-purchase customer service and support takes place. However, the authors note that the purchasing path does not necessarily follow this particular order, as the visitor might enter the online shop on the product catalogue phase, for example. Similarly, McDowell, Wilson & Kile Jr (2016) described the online shopping path almost in the same way, which consists of four phases. However, they divided the latter two steps, online form and post-purchase customer service, into shopping cart and checkout. They also conducted, that website design has a major impact on the conversion rate on all stages of the online shopping path.

Google Analytics (later referred to as GA) is perhaps the most famous clickstream application, which is used worldwide by thousands of websites. It offers a lot of different reports, so it is a good benchmark to look at. Their reports are basically divided into four categories: audience, acquisition, behaviour and conversions. Audience gives an insight about visitor characteristics, for example demographics, browser types and used devices. Acquisition tells, how visitors have found the website and which sources generate the most traffic to the website. The third category, behaviour, gathers data about things, which happen within the website: for example, what content gets the most views, and which pages have the highest exit rates. Finally, 'conversions' includes the goals, which the company has created itself; how they are achieved etc. (Hines, 2015.)

Hence, the reports offered by GA are very similar to the models presented by Chaffey et al (2012) and Järvinen et al (2015). Based on these findings, we will categorize online purchasing path into four phases: traffic generation (source), website behaviour, conversions and post purchase behaviour and customer relationship management. These phases are important especially, when examining customer behaviour in the light of web analytics. Clickstream data typically offers information about acquisition, website behaviour and conversions and set goals. The data about recurring customers and post-purchase behaviour is rarer though.

## 2.3 Web analytics process

As indicated earlier, 'data process' describes the whole spectrum of activities: data gathering, analysis, reporting, performance improvement and updating (Järvinen et al, 2015). A usual way to define the analytics process is to divide it into three consecutive phases: collect, analyse and use (Maxwell, Rotz & Garcia, 2016). We basically went through the first phase, collect, in the previous chapter, as we examined, what data should be gathered and why. Now we will discuss, how the data can be analysed and used in order to improve performance.

According to Stewart (2009), process seems to be the biggest challenge in the measurement context. Additionally, there is a big difference, whether web analytics are used for simple reporting or as an information to plan future strategy (Phippen et al, 2004). Especially for small businesses, it may be very hard to understand, how to utilize that information strategically (Alford et al, 2015).

Since data gathering itself can be automated, that particular phase has become quite effortless. According to LaValle et al (2011), collecting the right data is usually not a problem, when implementing a web analytics system. Thus, it is argued, that the biggest challenge for companies is the professional interpretation of the gathered data (Järvinen et al, 2015). Besides, there is no point to gather data, if them cannot be analysed (Phippen et al, 2004). In order to enhance this process, it is recommended to divide clear responsibilities for personnel, coordinate the process better and keep the management informed (Chaffey et al, 2012; Järvinen et al, 2015).

Managers have also reported, that insights should be communicated in an easy format, so that implications could be drawn quickly, and actions could be taken (LaValle et al, 2011). Thus, structured reporting has an important role in the process. Regular reports, weekly and monthly, make the web analytics process much better (Järvinen et al, 2015). In addition, new tools, such as visualization, can shape data into more understandable format, which can be then read by all, despite of their skill level (LaValle et al, 2011). The way of communicating analytical information should be also adjusted to the style of the company and its decision-makers (Hanssens et al, 2016).

### 2.3.1 Dashboards

Dashboards are a popular way to visualize data into a simpler format. Dashboards have received increasing interest both in research and practice in recent years, as they have been viewed as a possible solution to present data and analytics in a meaningful format (Clark et al, 2006). Visualization of data and analytics has been considered as an important factor to organize data in an interesting way (LaValle et al, 2011). Pauwels et al (2009) define dashboards as "…a relatively small collection of interconnected key performance metrics and underlying performance drivers that reflects both short- and long-term interests to be viewed in common throughout the organization." The purpose is to select a compact combination of marketing metrics, which are used to monitor and communicate

marketing performance within the organization (Clark et al, 2006). Thus, only the most meaningful metrics should be included in the dashboard (Patterson, 2007).

According to Pauwels et al (2009), dashboards have many advantages. They point out, that dashboards enhance consistency throughout the organization as everyone is using same type of measures. Moreover, dashboards are valuable tools both when monitoring and planning marketing actions. Finally, dashboards are a simple way to inform stakeholders. Hence, they offer important guidance for managers in decision-making. (Pauwels et al, 2009.) However, the importance of dashboards is also questioned, as O'Sullivan & Abela (2007) did not see them as a moderator between marketing performance measurement and firm performance and CEO's satisfaction with marketing in their study. However, this is only a single finding, while dashboards' increasing importance has been studied in many other studies.

### 2.3.2 Data driven decision-making

Naturally, the most important reason for data gathering and analysing is that it brings valuable customer insight, which helps managers to carry out strategic decisions and taking actions. Lee et al (2001) state: "Analysis is often meaningless without action."

Chaffey et al (2012) suggest, that the use of web analytics should follow a circle-type model, which consists of four phases: measure, analyse, test and optimize. The idea in the model is to develop digital performance continuously, which is consisted of many attributes such as website navigation, segmentation and marketing activities. Also, Lee et al (2001) present a similar model called KDD (=Knowledge Discovery in Database). Like Chaffey et al's (2012) model, it has four repeating phases: data collection, analysis, recommendation and action. Once a data analysis has been made, recommendations for developments are forwarded to web masters, who can make the required changes. Again, the cycle starts over, and data is gathered from the updated version of the website for the next analysis (Lee et al, 2001.)

From the perspective of micro-enterprises, Alford et al (2015) encourage small businesses to test and learn bravely. Entrepreneurs should follow the impact of their marketing actions closely, and based on these findings, reshape their objectives if needed. This requires, that they could develop their technical competence and execute effective marketing measurement simultaneously. Seeing a clear connection between measurement and actions could make owner-managers to feel being more in control and focused. (Alford et al, 2015.)

Besides using web analytics as a fundamental source for strategic decisions and development, the metrics system itself has to be evaluated regularly. Bourne et al (2000) highlight the fact, that the performance measurement system has to be reviewed, and perhaps, updated on a regular basis. The metrics system might evolve naturally, so checking, if it still is in alignment with the strategy, is necessary. On the other hand, if the strategy is updated, also the measurement system has to be reviewed. Thus, it is important that the process is continuous and proactive to possible changes. (Bourne et al, 2000.)

## 2.4 Web analytics context

The context, in which the company operates, affects on the usage of web analytics a lot. As noted a few times earlier, the size of the company determines quite a lot, how web analytics can be used in the organization (Alford et al, 2015). Depending on the company's resources, skills and organizational culture, the effective usage of web analytics can be a big challenge (Chaffey et al, 2012). Järvinen et al (2015) divided internal web analytics context into analytics skills and resources, IT infrastructure, top management commitment, leadership and organizational culture. They argued, that these elements affect on the usage of web analytics within organizations. In this study, it also necessary to recognize the characteristics of small enterprises, because their context is much different than in large enterprises. We take a closer look on these issues later in this chapter.

Much like Järvinen et al (2015), also Germann et al (2013) recognized similar organizational drivers for the deployment of marketing analytics, which can be seen in Figure 1. Like the figure illustrates, top management advocacy, data and IT, analytics skills and analytics culture are the antecedents for the deployment of web analytics, just like was Järvinen et al's (2015) components. In their model, top management has an important role to the success of the other three components. Thus, managers need to ensure, that the company is provided with an analytical culture, skilled people and proper IT systems. When these things are in order, analytics system is able to improve firm performance. Finally, as a side note, external contextual factors, such as competition and changes in customer preferences, can moderate the relationship between analytics usage and its benefits. (Germann et al, 2013.) Thus, the usage of web analytics depends a lot on many contextual factors.

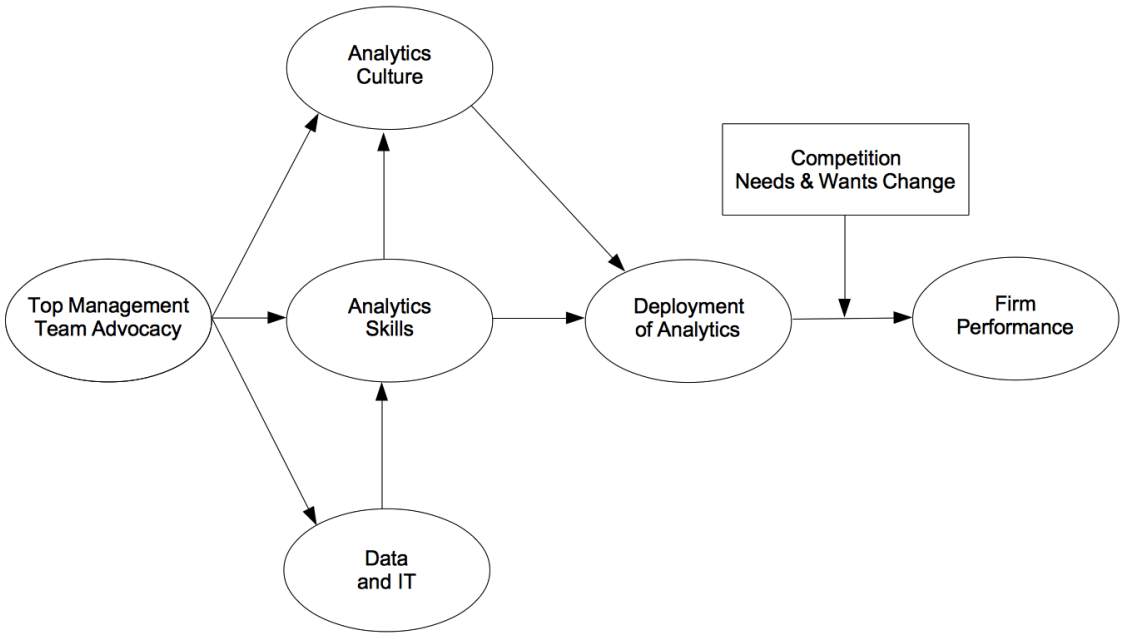


Figure 1 Germann, Lilien & Rangaswamy (2013), conceptual framework

This model could be also applied to the context of small enterprises, if we only replace the impact of top managers with owner-managers. Owner-managers in small companies might have even a bigger importance on these contextual issues, than managers in large companies. We talk about the perspective of small companies later. Moreover, as Germann et al's (2013) and Järvinen et al's (2015) web analytics drivers are very similar, these dimensions are examined more closely in the following sub-chapters, and their key findings are presented. Germann et al's (2013) conceptual model offers a good background framework to understand the role of organizational context in the usage of web analytics.

### 2.4.1 Resources and skills

According to the research by Chaffey et al (2012), the biggest barriers to use web analytics efficiently are the lack of resources and budgets. Many other marketing activities might be considered more important, and daily routines fill marketers' schedules (Järvinen et al, 2015). Managers do not have enough capacities for the usage of web analytics, as competing priorities outperform it (LaValle et al, 2011). Therefore, marketers should try to shift some of their budgets and attention to marketing measurement, because, when succeeded, it has evident benefits such as improved firm performance and better marketing's stature within the organization (O'Sullivan & Abela, 2007; Germann et al, 2013). However, small businesses have reported that there is not enough time to utilize web analytics (Alford et al, 2015). In this kind of a context, it is very hard to organize time or resources for the usage of analytics.

Another major barrier is the people, since they might not have a required competence and skills to use web analytics in an efficient way, which will not help to improve the web analytics process (Chaffey et al, 2012). Again, in small businesses, there might be no knowledge at all, how to use web analytics tools properly (Alford et al, 2015). Moreover, the level of technological adoption in small companies is crucially determined by the owner-manager's interest and passion for technological solutions (Ritchie & Brindley, 2005). Lack of understanding, how to utilize web analytics in the performance improvement, was reported as one of the main issues, why companies cannot become more data-driven (LaValle et al, 2011). The lack of skills, especially, has an impact on the selection of right metrics, since there is no clear understanding, how to link company's strategy with the web metrics (Järvinen et al, 2015).

Hence, it could be argued, that the absence of trainings is one of the main obstacles in improving marketing accountability (Patterson, 2007). Therefore, to utilize clickstream data efficiently, people who operate with the website, should be trained to use web analytics properly (Weischedel et al, 2006; Mintz et al, 2013; Järvinen et al, 2015), because proactive online approach requires sophisticated capabilities (Nakatani & Chuang, 2011).

It is managers responsibility to ensure, that they hire people with purposeful analytical skills (Germann et al, 2013). In addition, Davenport (2006) suggests companies to invest in right people, who are capable of working with analytical challenges. Indeed, Leeflang et al (2014) noted, that there is a real digital talent

gap, as companies cannot think analytically enough, because there is a shortage of professional analysts. Hence, people with quantitative skills should be included in decision-making, if it is just possible (Mintz, 2013).

Also, LaValle et al (2011) recognized that companies can be categorized at three levels based on their analytical capability – aspirational, experienced and transformed. At the aspirational level, the usage of web analytics remains somewhat simple, and the company may lack some crucial components, such as people or processes. At the experienced level, organization has gained knowledge about the usage, which gives them possibilities to go deeper and start to optimize their business performance. Finally, at the transformed level, web analytics bring clear competitive advantage to the firm, and the usage of web analytics is very organized and even automated. (LaValle et al, 2011.)

### 2.4.2 Organizational culture and top management involvement

Moreover, the involvement of top managers and a supportive organizational culture are recognized as central issues in the deployment of web analytics by many studies too (e.g. Davenport, 2006; Germann et al, 2013; Maxwell et al, 2016). Typically, problems related to analytics adoption are namely related to managerial and cultural issues (LaValle et al, 2011). Indeed, Wedel et al (2016) note that successful marketing analytics system has to be based on two fundamental pillars. Firstly, organizational culture and structure has to encourage to data-driven decision-making, and secondly, analytics professionals have to be trained.

Thinking digitally requires organizations to change (Leeflang et al 2014). It is not obvious, that people would immediately start to justify their decisions based on analytics instead of their instinct (McAfee et al, 2012). In addition, trusting in data instead of personal experiences, is very hard for the most people (LaValle et al, 2011). Hence, adapting an analytical culture requires everyone's commitment in the company (Patterson, 2007). Wedel et al (2016) argue, that out of all possible organizational factors, a culture where decisions are based on analytical evidence, is the most important in a successful analytics implementation. In small companies, this all is basically dependant on the owner-manger's own competency and attitude towards technological solutions (e.g. Fillis et al, 2005; Simmons et al, 2011; Alford et al, 2015).

Analytics help not only marketers, but also other decision-makers in a company (Wedel et al, 2016). Hence, managers need to confirm that the organizational culture supports the use of web analytics by including different decision-makers in the process (Järvinen et al, 2015). When selecting tools and right metrics, it should be an organization-wide effort, which includes all departments and divisions (Nakatani et al, 2011; Mintz et al, 2013). Indeed, by developing cross-functional and dynamic operations, companies are able to take steps forward (Leeflang et al, 2014). This was recognized as one of the key issues by Davenport (2006) as well, who noted that analytical and fact-based evaluation, if adapted, has to include all departments within the organization.

Previously in the text, we have mentioned, that according to Davenport (2006), (1) delving deeper into metrics and (2) making web analytics process an

organization-wide effort, are the signs of a company, which can be a forerunner in the usage of web analytics. The third, and the final, issue in his study is the dedication of senior managers. They are the people, who should show example to other employees and lead the way into an analytics-based thinking and strategy. (Davenport, 2006.) Also, Germann et al (2013) conducted, that it is top management's responsibility to nurture this beneficial culture. Indeed, personnel and even managers may show resistance, when a measurement system is being implemented (Bourne et al, 2000). The lack of leadership was also reported by Järvinen et al (2015) as an impediment of the deployment of web analytics.

This was supported by Bourne et al (2002), who conducted, that top management commitment is an important factor, which either can progress or slow down the implementation process. Actually, it should be exactly top management, who is pulling all the strings in order to reach the desired goals (Germann et al, 2013). Data does not remove the need for leading people with a vision, who are able to be in charge of the change (McAfee et al, 2012). Therefore, it is very important, that top management makes careful decisions and they are well aware of what they are doing (Bourne et al, 2002).

On the other hand, Mintz and Currim (2013, 2015) conducted, that it is rather contextual factors than manager's behaviour, which drives the usage of marketing metrics. These characteristics include company strategy, marketing mix decisions, corporate and environmental characteristics. Accordingly, Mintz and Currim (2015) argue, that marketing metrics offer surprisingly even more assistance for decision-making in a context, where the competence for marketing is not that strong. For example, non-marketing managers and small companies might gain relatively more insight from marketing metrics than large companies with skilled marketing managers. (Mintz & Currim, 2015). Additionally, when the competition is harder, and customers are more unpredictable, there is naturally more use for web analytics, as they help to gain insights in the competitive and changing environment (Germann et al, 2013).

It may also have an impact, how web analytics are referred and presented in the organization. Chaffey et al (2012) suggest that instead of calling it just 'web analytics', it should be referred as 'digital marketing optimization'. The idea is to broaden the concept to a larger scope, which makes it appear as a more important marketing tool. Besides, managers should think of marketing as an investment rather than as an expense, because marketing holds a strategic value, which should be noted in the company's decision-making process (Seggie et al, 2007). Moreover, dashboards should not be called just as "marketing dashboards", because they hold a strategic value not only for marketing division but also for the whole company (Clark et al, 2006).

Additionally, other events may distract the ongoing process, which could be, for example, changes in senior managers, as analytical organization requires consistency and some kind of a stability (Bourne et al, 2000). Bourne et al (2002) argue, that the interplay between efforts and gained benefits is crucial in the successful implementation of a metrics system; if the gained benefits are clear and purposeful, it is worth the effort, while it also can go vice versa. If executives do

not see the benefits when using the metrics system, they do not see it as worth the effort.

### 2.4.3 Technology adoption in small enterprises

Since small companies are on the spotlight in this study, it is noteworthy to take a closer look on their special characteristics, which are sometimes very different than in big corporations. It is worthwhile to point out, that the studies about technology adoption in small companies typically discuss the adoption of information and communication technologies (ICT) in general. Thus, they do not directly address the implementation of web analytics, but they do provide valuable insights about contextual factors in small companies, which can also be applied to the context of web analytics, because they are still one part of ICT systems.

Small businesses have a different context, and usually there is an owner-manager, who is in charge of many different things within the company (Fillis et al, 2005; Alford et al, 2015). The findings about technology adoption in small companies are typically somewhat similar, and they usually centre around the traits and attitudes of the owner-manager (e.g. Fillis et al, 2005; Simmons et al, 2008; Simmons et al; 2011; Jones et al, 2014; Alford et al, 2015). So, in terms of contextual factors, when we look at small companies, owner-managers basically represent the whole top management and organizational culture, which was presented in the previous section. Thus, their attitude and competency determine notably, how web analytics can be used.

According to Jones et al (2014), many internal factors affect on owner-manager's attitudes towards ICT adoption. The most important factors among these are time and resource constraints, and knowledge and skills. Furthermore, Wolcott, Kamal & Qureshi (2008) recognized six challenges, which micro-enterprises may face, when they are trying to adopt ICT solutions: capabilities, attitude, resources, context, access and operations. Hence, these findings are actually quite similar as the factors, which we looked in the previous chapters about bigger corporations, but here they are dependent on a smaller group of people.

Simmons et al (2011) conducted, that owner-managers have a crucial role, if moves towards website optimization are taken or not. Owner-manager's capabilities can be categorized into three themes: marketing ability, entrepreneurial characteristics and IT knowledge and experience (Simmons, Armstrong & Durkin, 2008). Thus, owner-managers, who hold strong market orientation and entrepreneurial orientation, have a higher tendency to utilize web tools (Simmons et al, 2011). Indeed, Fillis et al (2005) also noted, that even though owner-managers are usually aware of the possible benefits, only the ones, who are entrepreneurially oriented, are able to take actual steps forward.

It is also very crucial, that owner-managers are able to see and understand the real benefits, which they would achieve by utilizing website optimization and e-commerce tools (Fillis et al, 2005; Simmons et al, 2008; Simmons et al, 2011). Owner-managers need to recognize, what the technology adoption can bring more to their business, and there has to be a visible value for their own business model (Jones et al, 2014). McGowan & Durkin (2002) argue, that there is a so-

called competency path: First there is a general vision about ICT solutions, but it is the next stage 'value', where a person really understands the possible benefits, and starts to make actual moves to achieve them. Because of their limited resources, owner-managers want to be sure, that the adoption of technological tools is worth the effort (Simmons et al, 2008).

### 2.4.4 IT infrastructure

Germann et al (2013) suggest, that managers have to provide a proper IT infrastructure for the company. Marketers have reported that the lack of proper infrastructure and IT tools create challenges to build up a functional analytics system (Patterson, 2007; Leeflang et al, 2014). According to Bourne et al (2000), IT systems might create problems or unexpected issues. Small businesses also may lack a crucial technical competency (Alford et al, 2015). On the other hand, Järvinen et al (2015) argued, that nowadays technology hinder the process no longer, as the usage of web analytics tools has become straightforward and simple. Also, LaValle et al (2011) noted, that the adoption of analytics is not typically related to technology or data itself. However, the choice of analytics tools and software might still have an impact on the process, as there are many differences between available options (Nakatani & Chuang, 2011). Companies have to find a solution, that best suits their personal needs. Hence, the importance of proper IT systems and technology cannot be forgotten, even though their role would not be that important than it used to be before.

To conclude the notions about contextual factors, Chaffey et al (2012) rephrase six areas, which define the capabilities to use and manage web analytics process better: (1) clear responsibilities for managing and controlling web analytics, (2) clearly defined objectives, (3) setting the focus on desired area, (4) analytics team and expertise, (5) strive for continuous improvement and proactive approach and (6) proper technological solutions. Similar areas were discussed also in other studies as well, and they were described in the previous chapters. Thus, based on the theory, we suggest, that the main contextual factors, which affect on the usage of web analytics, are the lack of resources and skills, organizational culture and top management involvement, owner-manager's personal capabilities and attitudes in small companies, and IT infrastructure.

## 2.5 Positioning this study

Research about web analytics has remained somewhat scarce, and only a handful of studies can be recognized to address this issue very closely. As discussed earlier, there is a wide range of studies about marketing measurement in general (e.g. Ambler & Puntoni, 2004; Patterson, 2007; O'Sullivan & Abela, 2007; Seggie et al, 2007; Stewart, 2009; Mintz et al, 2013). While this research is very important, and it has created a fundamental base for marketing measurement studies, it does not directly talk about web analytics and online measurement. These studies usually discuss different perspectives of marketing accountability; how to link marketing metrics better to business objectives, financial results and firm performance.

Additionally, another research direction, such as Davenport's (2006), LaValle et al's (2011) and McAfee & Brynjolfsson's (2012) studies, discuss the analytical culture and organizational context. These studies contain a vast amount of valuable information, but they do not necessarily talk about marketing metrics, but rather business analytics throughout the whole company. It is also quite obvious, that these studies typically focus on big data, which is a much larger theme, as compared to clickstream data, in terms of size, capacity and possibilities.

Hence, when these two research directions are left out, there are basically fewer than ten scientific papers addressing the usage of web analytics properly. To be more precise, these studies have empirically examined the usage of web analytics from different perspectives. Therefore, studies based on literature reviews (e.g. Bucklin & Sismeiro, 2009; Wedel & Kannan, 2016) or general surveys (e.g. Chaffey & Patron, 2012) are not included in this count. The summary of the empirical studies is presented in the Table 1. Their research methods and settings are discussed and evaluated next.

Most of these studies are qualitative and exploratory in nature, and thus, they are carried out with interviews and case studies. These research methodologies are naturally justified, as there has not been much previous knowledge about the theme. Only Hong (2007) and Germann et al (2013) have studied the issue with quantitative methods, and in both cases mail surveys have been used. Hence, research among the topic is still quite descriptive, and there are only few conceptualized frameworks. These established frameworks are clearly present in this study too, as they are the ones developed by Germann et al (2013) and Järvinen et al (2015). Other than that, the research within the topic remains quite fragmented.

Another issue, which raises from these studies, is the broad range of studied companies. In many studies, a mix of B2B and B2C websites is included (Weischedel et al, 2005; Welling & White, 2006; Hong, 2007; Germann et al, 2013), while other studies have focused on a single case study: an airline company (Phippen et al, 2004), an IT provider (Weischedel et al, 2006) and a B2B e-commerce business (Wilson, 2010). Also, Järvinen et al (2015) studied the usage of web analytics within three large industrial companies. Thus, various industries are present in these studies and mixed together. And like Welling et al (2006)

point out, there is no universal metrics framework for all industries and websites, but instead, several frameworks for specific industries should be found. Thus, we argue, that certain industries should be examined individually, in order to get more insight about specific industries alone. In this study, we only focus on B2C online shops.

Besides industries and website purposes, another thing worth mentioning about previously studied companies is their sizes, as in most cases only large corporations were examined. For example, one of the few empirical studies in the field by Germann et al (2013) concentrated on Fortune 1000 companies, which are very big corporations. Basically, only Welling & White (2006) and Hong (2007) have included some smaller or medium-sized companies in their studies, and in those cases the amount of them has been quite small. Bigger proportion of their studied companies are still larger in size.

Hence, little is known, how smaller businesses can utilize web analytics in their decision-making. It is especially interesting, as their resources are more limited, and their capabilities are not on the same level as it is within large companies, like it is suggested by many studies about small enterprises (e.g. Fillis et al, 2005; Simmons et al, 2011; Alford et al,2015). As we discussed in the 'context' section, there is a body of literature about technology adoption in small companies, and they surely offer important information for this study too. However, most of those articles concentrate on digital tools in general (ICT), such as websites, networking tools and also marketing and analytics tools, and their perspective is more general about technology. They offer important information about contextual factors in small companies, but they do not only focus on the adoption of web analytics tools. In addition, since some of the studies are conducted between 2000-2009, many of them just concentrate on the adoption of websites as marketing tools itself. Hence, their viewpoint is not the most recent always.

Based on these notions, we wanted to focus on examining the usage of web analytics within small Finnish companies, who have an online shop for consumers. Hence, the framework by Järvinen et al (2015) is adapted to the perspective of small companies, and the contextual factors are enriched with the previous literature about technology adoption in small companies. Research methods are discussed in the next chapter.

| Authors | Method | Sample | Perspective |
|---|---|---|---|
| Phippen, Sheppard & Furnell (2004) | Case study | International airline company from the UK | Practical evaluation of web analytics within e-commerce setting. |
| Weischedel, Matear & Deans (2005) | Multi-stage and mixed methodology (e.g. in-depth case study) | Web companies in New Zealand (interviews) and a large US-based company (case study) | Web analytics for strategic decision-making. |
| Weischedel & Huizingh (2006) | Case study | Market leader in the US, offering networking solutions | Web analytics for website optimization. |
| Welling & White (2006) | Qualitative study | 25 interviews. Companies of various types and sizes from four different countries | The most popular web measures across different industries. |
| Hong (2007) | Quantitative e-mail survey | 77 responses from different kinds of companies in South Korea | Purposes and benefits to use web analytics. Most popular metrics among organizations. |
| Wilson (2010) | Case study | Three field experiments conducted within a B2B e-commerce company, medium-sized. | Web analytics for evaluating and improving website performance. |
| Germann, Lilien & Rangaswamy (2013) | Quantitative mail survey | 212 responses from Fortune 1000 companies. | Web analytics for increasing firm performance. Factors to supplement the deployment of web analytics. |
| Järvinen & Karjaluoto (2015) | Case study consisting interviews and workshops | Three large industrial companies | Web analytics for digital marketing performance measurement |

Table 1 Previous literature about web analytics

# 3 METHODOLOGY

## 3.1 Research strategy

A qualitative approach was chosen for this study. According to Hirsjärvi, Remes & Sajavaara (2009, p. 161), qualitative research wants to reflect real life situations holistically, in which the nature of the truth is diverse. Qualitative research is interested to explore phenomena in specific contexts (Metsämuuronen, 2011, p. 220). Hence, the aim of qualitative research is to understand and interpret the social world through the eyes of its participants (Bryman & Bell, 2011, p. 386).

Ontological considerations refer to the question, how the reality is constructed (Metsämuuronen, 2011, p. 216). In qualitative research, the ontological consideration is typically constructivism, which means, that the reality is socially constructed by individuals (Bryman & Bell, 2011, p. 22). Additionally, epistemological considerations refer to the relationship between the researcher and the study object (Metsämuuronen, 2011, p. 216). In qualitative studies, there is usually a connection between the researcher and the study object, and thus, they both have an impact on the created information (Hirsjärvi & Hurme, 2008, p. 23).

There are usually four different purposes of research: exploratory, descriptive, explanatory and predictive (Hirsjärvi et al, 2009, p. 138-139). Exploratory research is used, when there is not much previous knowledge on the topic, while explanatory research is used, when there is more information, and, for example, causalities are searched (Metsämuuronen, 2011, p. 39). Because this study takes place in a specific context, and the research topic is not very well addressed in previous literature, it combines both exploratory and descriptive approaches. This study wants to increase knowledge, and the point is not to find universal generalizations or causalities. Thus, the usage of qualitative methods is justified.

## 3.2 Interviews as a research method

The main methods in qualitative research are ethnography/participant observation, qualitative interviewing, focus groups, language-based approaches and the collection and qualitative analysis of texts and documents (Bryman & Bell, 2011, p. 389). We chose to use interviews as our research method, because they can be used in various research settings, and they are an appropriate method for this research. Hirsjärvi and Hurme (2008, p. 35) note, that interviews are a suitable method especially, when there is not much previous knowledge on the topic, deeper information is required, and the studied subject is complex and versatile. Thus, interviews can provide new information about a less studied phenomenon.

In qualitative research, study methods, which highlight the informant's perspective, are preferred (Hirsjärvi et al, 2009, p. 164). Semi-structured interviews are a study method between structured and open interviews, and they are consisted of certain themes, but there is no single order of questions, and the form of questions may vary. Because the named themes are the most important guideline for interviews, it enables, that the atmosphere is more open, and it can bring the interviewee's voice better to the front. (Hirsjärvi & Hurme, 2008, p. 47-48.) Furthermore, interviews provide more flexibility, and the structure can be adapted to the interviewee's situation (Hirsjärvi et al, 2009, p. 205; Tuomi & Sarajärvi, 2009, p. 73). Semi-structured interviews were chosen for this study, because our interviewed companies represented a wide range of companies, so flexibility was needed in order to adapt the interview in interviewee's own situation.

There were certain themes, which were covered during our interviews. Because the interviews were part of a bigger research project, it was not only themes for this study, but also some other themes, which were included in the interviews for the whole project. The themes were (1) Company's background and the level of internationalization, (2) E-commerce strategy, goals and channels, (3) Data content, (4) Managing and analysing the data, (5) Company's contextual factors, and (6) Conclusion – experiences about being an online retailer. As one can see, the main dimensions – content, process and context – are included as their own themes there. The interviews were guided by these themes, but the interviews did not always follow that particular order, and the themes may have been referred multiple times during the interviews. We also had a list of questions, which were used to cover all themes. The order of the questions varied, and all questions were not always asked, because the questions were adapted to interviewee's particular context. Some additional questions were also asked based on interviewees' responses.

## 3.3 Interviewees

We conducted 19 semi-structured interviews in a couple of different locations during May and June 2018. The list of interviews, and characteristics of the companies, can be seen in Table 2. Our partner MyCashflow provided us a selected list of their customers, who would be suitable for the interview, because they have made some growth recently, and they should know something about the studied themes. The author then contacted the companies and scheduled the interviews. Every respondent was interviewed once, and we also asked them to fill out a background information form just before the interview. Hence, we could talk about a purposive sampling, because certain phenomena are examined in a certain context, and rich information is needed (Hirsjärvi & Hurme, 2008, p. 58-59). Purposive sampling enables, that the research questions can be truly answered, and there is also variety between the respondents, if that is necessary (Bryman & Bell, 2011, p. 442). However, the informant choices were made by the

research partner, and hence, the author himself did not have a direct impact on the selection process.

The companies represented a wide range of enterprises with various business models, backgrounds and industries. All of them had a B2C online shop, but as many as 12 of them also had some other business operations, such as wholesales or brick-and-mortar stores. Hence, only seven companies concentrated purely on e-commerce business. Moreover, the companies were relatively small: 13 of them had personnel between 1-5, four of them had 6-10 employees, and two companies had more than 30 employees. Hence, excluding these two cases, all of our interviewed companies were micro-enterprises. 14 companies had started their online shop after 2010, and five companies were established between 2000 and 2009. Finally, seven companies operated abroad at least on some level. Many others also had intentions to expand their business to other countries, but those plans were not yet happened. Hence, we received a very versatile research material, because the interviewees had a broad range of views, experience and skills.

We interviewed the founder in 13 cases, and in the rest, there was someone as an interviewee, who knew about their online shop and marketing. The majority of interviews included only one interviewee, but there were also four interviews, where there were two people attending. In these interviews, in which two people were present, some information was shared more than in single-person interviews. Alasuutari (2012, p. 120) note, that in group interviews some themes may be sometimes discussed, which would otherwise remain quite unspoken. In general, the lengths of interviews varied between 47 minutes and two hours. The average length of an interview was approximately 1 hour and 25 minutes.

According to Hirsjärvi & Hurme (2008, p. 63), running an interview is easier, when two interviewers are present, as one can ask questions, and the other can start to prepare the next theme, for example. Thus, 17 of the interviews were conducted by two interviewers, while two of the interviews were conducted by one interviewer, who is the author of this study. Furthermore, all material was gathered face-to-face, except one interview, which was carried out by the author and an interviewee over Skype-connection. The author participated in 15 interviews total, while the remaining four were executed by two other persons in the research project. The other person in the research project attended 17 of the interviews. Thus, it could be argued, that the data gathering was continuous, and there was more routine towards the end. From the author's perspective, it was fruitful to be present in majority of the interviews, as it gave a good opportunity to observe the interviewees in detail. Also, the information processing started after every single interview, and the knowledge about the subject accumulated quickly.

| Case | Field of business | Number of Employees | Number of Interviewee(s) | Interviewees role in the company | Year of foundation | Number of sales items | Visitors per month | Main operating area | Length of the interview |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Gym accessories | 2 | 2 | Founders | 2014 | 30 | 9 000 | Finland, Europe | 1:59:23 |
| 2. | Dental care products | 1 | 1 | Founder | 2016 | 200 | 5 300 | Finland | 1:18:56 |
| 3. | Sports clothing for women | 2 | 1 | Founders | 2008 | 90 | 12 000-15 000 | Finland, Sweden, (global) | 1:27:58 |
| 4. | Sewing formulas and supplies | 1 | 1 | Founder | 2016 | 100-200 | 10 000 -12 000 | Finland, (global) | 1:27:43 |
| 5 | Women's & children's clothing | 31 | 1 | Business manager | 2011 | 940 | 70 000-80 000 | Finland | 1:20:37 |
| 6 | Pet food | 1 | 1 | Founder | 2014 | 420 | 50-100 | Finland | 1:47:03 |
| 7. | Cosmetics | 3 | 1 | Founder | 2016 | 3 500 | 20 000 | Finland | 1:34:45 |
| 8. | Sports clothing & accessories | 10 | 1 | Business manager | 2010 | 9 600 | 7 300 | Finland (global) | 1:30:49 |
| 9. | Clothing & shoes | 3 | 1 | Founder | 2008 | 7 000 | 80 000 | Finland (global) | 1:24:17 |
| 10. | Clothing (casuals) | 2 | 2 | Founder, employee | 2006 | 5 000 | 50 000-100 000 | Finland | 1:45:19 |
| 11 | Biking accessories | 4 | 1 | Founder | | 20 | Did not know | Finland | 1:25:02 |
| 12 | Clothing (casuals) | 35 | 2 | Head of design, coordinator of international sales | 2000 | 200+ | Did not know | Finland (Germany) | 1:01:05 |
| 13 | Lighting and interior | 2 | 2 | Founders | 2011 | 1 700 | 3 000 | Finland | 1:17:40 |
| 14. | Children's clothing | 5 | 1 | Former business intern | 2011 | 225 | 15 000 | Finland | 1:31:14 |
| 15 | Children's and women's clothing | 5 | 1 | Founder | 2017 | Did not know | Did not know | Finland | 1:07:10 |
| 16. | Children's clothing | 9 | 1 | Head of web-shop | 2016 | 2000-4000 | 5000-8000 | Finland | 1:18:13 |
| 17. | Cosmetics | 6 | 1 | Head of PR and web-shop | 2008 | 500 | 40 000 | Finland | 1:02:01 |
| 18. | RC-cars and accessories | 6 | 1 | Founder | 2010 | 20 000 | 75 000 | Finland, global | 1:34:18 |
| 19. | Children's accessories | 4 | 1 | CEO | 2016 | 3677 | Did not know | Finland, Estonia | 0:47:08 |

Table 2 List of interviewees

## 3.4 Data analysis

Eskola & Suoranta (1998, p. 106) point out, that the interpretation is the most difficult part in qualitative research, and there is no formal directions or guidelines, how to do that process. There are many ways to conduct qualitative analysis, and there are no better methods, but instead, a wide range of different options (Hirsjärvi & Hurme, 2008, p. 136).

Inductive, deductive and abductive approaches describe, how the theory is used in the research. In deductive approach, the theory is collected first, which is then utilized to create hypothesis. Observations and findings are based on this groundwork. In inductive approach, on the other hand, theory is developed through the observations (Bryman & Bell, 2011, p. 11-13). The mixture of inductive and deductive approaches is called abductive reasoning, in which theory helps to organise and guide the study to a certain direction (Metsämuuronen, 2011, p. 413).

The interplay between theory and observations can be also examined by looking at data-based, theory-dependant and theory-based analysis. These viewpoints indicate, how the theory effects on the research and analysis. Firstly, in the data-based analysis, the results are created without investigating any previous research first. Secondly, in the theory-based analysis, the analysis is fully executed by adapting some previous models and frameworks. Thirdly, the theory-dependant viewpoint utilizes previous knowledge at some level, but the purpose is not to test them, but rather to create new ideas based on some previous findings. (Tuomi & Sarajärvi, 2009, p. 95-98.) Since our study contains a large theoretical background, the approach in this study is closer to theory-based analysis and deductive reasoning. Especially, when classifying the findings under different themes, the theory was utilized to group them. However, since we do not test any frameworks, and we also establish some new ideas, also elements of abductive reasoning and theory-dependant analysis are present in our study.

Hirsjärvi & Hurme (2008, p. 145) divide qualitative analysis into three processes: describing, classifying and connecting (originally Dey, 1993). Describing the content is the basis for every analysis, and it sets the studied phenomenon to a context. Classifying is an essential part of the analysis, as it makes the data easier to interpret, summarise and compare. Connecting means, that the ideas must be brought together, and that is the destination in every study. In qualitative analysis, it is worthwhile to look for regularities, variations and singularities. In this study, the analysis followed these phases very clearly.

Content analysis was used as a primary analysis method in this study. According to Tuomi & Sarajärvi (2009, p. 91), content analysis is a broad term, which can refer to a certain analysis technique, and also to a larger range of different qualitative analysis methods. Basically, content analysis aims to summarise and develop general notions about the studied phenomenon. In addition, content analysis needs to be objective and systematic, which means, that the biased views must be avoided (Bryman & Bell, 2011, p. 289-290).

Content analysis can be divided into three phases: data reduction, data display and conclusion drawing (originally Miles & Huberman, 1994). In data reduction, the crucial information is highlighted, and the unnecessary information is excluded. In the data display phase, similarities or differences are investigated in the content. Finally, in conclusion drawing, the relevant information is recognized, and conclusions are made. (Tuomi & Sarajärvi, 2009, p. 108-111.) Our analysis basically followed these three steps, and we will present the actual process very soon.

The interviews were recorded, and afterwards transcribed by the author. The total duration of the interviews was 26 hours and 40 minutes, and there were 487 pages of transcribed material. The saturation point is reached, when new interviews no longer bring any relevant new information (Hirsjärvi & Hurme, 2008, p. 60). Eskola & Suoranta (1996, p. 48) note, that the saturation point is very study-dependant, and there are no universal amounts, which are considered to be enough. When thinking about this study, we argue, that we reached the saturation point after the 19 interviews, because the themes appeared to be very similar towards the end.

Hirsjärvi & Hurme (2008, p. 136) point out, that the analysis often starts during the interviews gathering already, because the researcher is able to begin to process the findings immediately. Indeed, the data gathering and analysis usually happen at least partly at the same time (Metsämuuronen, 2011, p. 254). That was also the case in this study too, as it was possible to start spotting recurring themes and types, while the amount of interviews still increased. The ideas and findings were also shared between other research persons, which helped to develop and process more ideas about the gathered data. Moreover, the personal attendance in the interviews and a long transcribing work gave to the author a holistic perspective about the gathered material even before the actual analysis. It is also recommended to start the analysis as soon as possible after the data gathering (Hirsjärvi et al, 2009, p. 223), and therefore, the actual analysis started right after the data was gathered and transcribed.

We used thematising to organise our findings. Thematising aims to recognize similar themes between respondents, and the researcher has naturally a crucial role in this interpretation (Hirsjärvi & Hurme, 2008, p. 173). As our approach is more deductive, the previous knowledge on the topic offered a guideline, what kinds of themes were looked for. Eskola & Suoranta (1996, p. 126) note, that in thematising, it is important to find the central themes, which provide clear answers to the research questions.

In practise, the transcribed text was read through one interview at the time first. Notes were written, and thoughts were categorized, and marked to the text. Because there was so much material, as the interviews contained information about other themes as well, the central information for this study was highlighted in the transcribed texts, and unnecessary information was excluded. Hence, this phase represented the data reduction (Tuomi & Sarajärvi, 2009, p. 109).

Then, the interviews were read through the second time, and another round of analysis and categorization was made. Quotations were collected under different themes, and the analysis was deepened. After reading the interviews

twice, the central information from every interview was gathered in its own Word-document, which contained a lot of notes and themes, which were supported by numerous quotations. Hence, in this phase, every case was still managed individually, and the connections were established in the next section.

Then, the Word-documents were read through a few times, and during this process, the information was compared and analysed between the interviews. Based on this analysis, relevant findings and mutual themes from every interview were combined under the same document, which then created the first idea of the upcoming results. Thus, the findings were evaluated in detail, so that the important findings were developed further, while the unnecessary findings were excluded in this phase. Thus, as one can see, data display and conclusions drawing were executed through these activities.

Accordingly, we also used typification as one method for analysis in this phase. In typification, cases are grouped together based on their mutual characteristics (Hirsjärvi & Hurme, 2008, p. 174). It is a classic way to organise information, where similar narratives are brought together to create models about different groups (Eskola & Suoranta, 1996, p. 130). One way to model typification is to create a two-dimensional coordinate system based on two factors, which enables the researcher to group cases into four types (Hirsjärvi & Hurme, 2008, p. 175). In our study, we used this type of an analysis, when we created a contextual framework about the usage of data and company's skills and know-how in the context section. We recognized similar traits between the studied companies and placed them to the coordinate system.

# 4 RESULTS

In this chapter, we will have a detailed look on the results. Our findings have a lot of similarities with the previous literature on the same subject, and many earlier studies are supported. We start by looking at the data content: what kind of data is followed and used, and what analytical applications are utilized? This is followed by the data process: how the data is managed, and how the decisions are made? Thirdly, we take a look at the contextual factors, which also received the biggest importance in our study.

Finally, based on these three dimensions, we present our contextual framework in the end of this chapter. This can help researches and managers alike to examine, how companies are able to perform analytical decision-making in relation to know-how and skills. It also helps to observe the usage of web analytics in different kinds of companies with various analytical competences. The level of analytics usage differed quite much among our interviewed companies, so it is better to look at the findings through three groups of companies – beginner, conscious and advanced. We will talk about these groups in the last chapter of the results.

## 4.1 Content

We start by looking at the data content first. Based on the interviews, we found, that companies use various different tools to collect and analyse data. Some of these data solutions are used by all participating companies, while some of them are only used by companies, which clearly have a higher competency for using analytical applications. Every tool provides its own data, which is important for different managerial purposes, and thus, based on a company's activities and strategy, certain tools are used to monitor the performance. Just like many earlier articles have suggested, that companies are different, and they need different measures (Patton, 2002; Phippen et al, 2004; Hong, 2007), not every company necessarily need all of these tools, if its operations are, for example, smaller.

Hence, it was noticed, that there is a certain implementation order of analytical tools. In the latter stages, also the tools in the previous stages are used, and thus, the tool portfolio just becomes bigger, and there are more tools in use. Therefore, companies with better know-how are more likely to use a broader set of analytical tools. Starting from the most widely used tool towards the least used tools, the list looks like follows:

1. MyCashflow's e-commerce platform
2. Google Analytics (+ Facebook Analytics and AdWords)
3. More advanced tools (HotJar, Google Data Studio, etc.)

It could be argued, that this implementation order more or less also follows the contextual categorization of companies, which we will examine later – beginners, conscious and advanced. To put it short, these groups describe the level of analytics usage within companies. Companies with less experience in measurement are more likely to utilize only MyCashflow's application, while more advanced companies utilize other tools in their business operations as well, such as GA. Depending on a company's objectives, the required tools are chosen. We will come back to the relationship between companies and different analytical applications, when we present our contextual framework.

Since all of our respondents were clients of MyCashflow, its E-commerce tool was used by all 19 companies, and it was reported to be one of the most important sources of data. Moreover, even though GA was installed in nearly all online shops, a few respondents reported MyCashflow to be the major source of information, while GA was only used very occasionally. Slightly less than half of the interviewees reported, that they use GA on a regular basis, while the others opened GA quite irregularly. Also, Facebook Analytics was considered as an important tool among many entrepreneurs, if they had an active presence in social media channels. Finally, few companies mentioned that they have installed some other analytical tools, where HotJar and other Google applications were mentioned the most often. Next, we will take a closer look on each application, and discuss the data and numbers, which were considered as important and interesting among our interviewed companies.

### 4.1.1 MyCashflow – sales, stocks and basic online data

When it comes to running the business and following crucial numbers, MyCashflow was mainly used to manage and follow day-to-day matters, such as orders, sales and stocks. While it is not necessarily an online metric, **sales data** was clearly referred as the most important information by nearly all companies, despite of their analytical skills-level and know-how. Sales data was talked about in every single interview, that we conducted.

> *Sales is one. I always look at one week's or one month's sales, sometimes even between three or four months, but longer time periods, I mean. Stocks…shopping carts, how many of them are abandoned, how many of them are finished orders.*

> *We get detailed information about products' sales, demand and margins from MCF. Based on this information, we make marketing decisions and design campaigns.*

Hence, it is evident, that sales data guides an e-commerce business in many cases, and it helps managers to follow firm performance, carry out marketing decisions and plan future actions. Sales data is usually followed on a regular basis, and it may be organised as daily sales, weekly sales, monthly sales or by customized time periods. Comparisons to previous time periods are also common. Sales data can also be enriched with individual customer purchasing history and the data

available in cashier software. By doing this kind of analysis, companies can do, for example, detailed customer analysis; which customers are the most profitable, or how the sales should develop over time.

Additionally, as indicated in the citation below, stock values are closely related to sales numbers, and together they may offer valuable insight for marketing decisions and running a profitable business. Moreover, many companies reported that in order to get more detailed information about sales and demand, they follow sales numbers of brands and product categories. This information can help to answer questions such as 'What products are popular, and which are not?'

> *We kind of follow our sales, our stock values, and compare them with each other, and what should be done even more.*

MyCashflow is also used to track basic online data, and to be more precise, six of the respondents expressed that the information about **shopping carts** is very interesting and useful. It was reported, that this information gives information about, which products are added to the shopping cart, and thus, it tells about the most popular and most viewed products. Some interviewees used that data to guide them to make product discounts. In addition, shopping cart data also reveal, how many of these carts are either abandoned or ordered. However, the respondents expressed, that the shopping cart data alone could not tell, why and for what reasons the shopping carts were abandoned.

> *I have basically followed, how it is with shopping carts, which products are viewed the most and stuff. I can see this kind of data quite well in MyCashflow.*

> *I follow shopping carts every day, that which products are added to the cart. Then, if there is a product, which is viewed more, I will see, and add a discount for that product. It does affect sometimes.*

### 4.1.2 Google Analytics – more information about website traffic

Almost every company had GA installed in their online shop, but roughly 10 of them used it on a regular basis. GA is used to get information, which is not available on MyCashflow, and this information usually has something to do with marketing activities and traffic monitoring. Thus, if a company does not have an active marketing strategy, it seems like their usage of GA is also lower and rarer.

The most important numbers in GA are **conversions and the amounts of visitors**, which are easily available in GA. While some respondents only followed visitor amounts occasionally just because of their personal interest and not with a strategic perspective in mind, some companies used that information as a basic indicator of website performance and development over time. This popularity of following visitor amounts has been recognized in my previous studies as well (Welling et al, 2006; Hong, 2007; Bucklin et al, 2009). Also, conversions were often mentioned, but usually it did not give a lot of practical information for decision-

making, but it was still considered as an important measure. Additionally, some other data, which were mentioned by few respondents, were entry and exit pages, lengths of visits, and customer demographics, such as which cities and countries they come from. These measures were not so popular though, and they did not hold that important strategic importance.

As important as conversions and the amounts of visitors, the **information about traffic sources** is crucial in GA. Especially, for companies, who do paid advertising – thus, companies with more knowledge about measurement and marketing – the information about the best channels and their profitability was very important. Also, even if there is no paid advertising, many companies are still interested about the channels, where their traffic comes from. The data about channels tells managers, which channels work, and which do not. Based on this information, managers can make decisions, which channels they should focus on. It could be argued, that from a managerial perspective, the data about traffic sources provides very fruitful information for decision-making in marketing actions. Hence, both sales data and traffic sources were the most used measures, which really provide useful information for decision-making, and they are not only interesting information about website performance.

> *We look at, where our traffic comes from, how much we get traffic? Which ads work?*

> *Google has brought us this visitor amount, and their conversion is that. Facebook has brought us this amount, and their conversion is that. Then we can decide, that okay, Facebook has twice as big conversion than Google. Let's put our efforts on Facebook.*

### 4.1.3 Marketing tools – deeper insight about marketing actions

Four of the respondents expressed, that they also use Facebook Analytics to get deeper insights about their activities in social media. Two of these pointed out, that Facebook's tool is even more important than GA for them, and they use Facebook's tool clearly more than GA. Naturally, these companies were heavily focused on social media marketing, and they wanted to maximise their results in those channels. On the other hand, companies, who had emphasis on search-engine-marketing, used Google AdWords to follow and manage their campaigns in that channel.

> *And then, of course, in Facebook one can see very detailed marketing information about Facebook and Instagram, and for us it is even more important than Google Analytics. [- -] There you can see, if you have an advertisement there, how much a cost per click is. How much have we used money for that? Which parts of Finland the visitors have come? Are they men, women, what age? [- -] Then we can always target our next campaign better.*

This tool was used to get answers for basic questions about social media activities, such as how many people have seen the post, and how many of them have clicked it. Companies, which did paid advertising, used the financial information, impressions and audience to manage and target their current and upcoming campaigns. Furthermore, people, who were more involved in social media marketing, also followed **the marketing profitability** carefully, such as numbers like cost per click and return-on-investment, in order to optimize the money usage and marketing results. Same kind of things were also present, if Google AdWords was used.

> *So that we use our money, our marketing budgets and everything, wisely, it is very important!*

Additionally, it was not only in Facebook Analytics and Google AdWords, but also in GA, that companies, which did paid advertising, wanted to optimize the marketing performance, and thus, the marketing profitability was followed in detail to get the best possible return for the used money. Actually, as many as nine companies talked about measuring marketing profitability. Therefore, it could be said, that everyone, who uses some money for advertising, also wants to see it to bring clear profits, and hence, it was always clearly measured. No one did paid advertising without measuring it.

> *Actually, it is pointless to do marketing like that, which you cannot measure, and which does not give you data. It is completely pointless.*

Precisely, just like in the marketing literature (e.g. Clark, Abela & Ambler, 2006), people with an analytical skillset addressed the importance of measurable marketing, which should always be related to financial metrics. The use of financial metrics has been often suggested in the previous research as well (Patterson, 2007; Stewart, 2009). The knowledgeable respondents expressed, that it is very important, that all marketing activities can be measured, and their profitability can be counted. It was said, that measurable marketing helps them to justify marketing decisions, and makes them feel being more in control. For example, they can always stop those advertisements, which do not work, and keep investing in those, which do work. Monetary value and return-on investment is in their minds, when they are planning and making decisions about marketing actions. Thus, contrary to some earlier suggestions (Stewart, 2009; Leeflang et al, 2014), we argue, that with the help of modern web analytics tools, it is somewhat straightforward to measure marketing financially nowadays.

### 4.1.4 Other tools and customer feedback

A few companies also reported, that they use some other analytical software, when there is a clear need to use those. Hence, these other tools are not used on a regular basis, but only in situations, when something precise has to be done in case of a problem or an ongoing project. For example, HotJar was used by some

respondents to examine customer behaviour in the online shop, to track individual visitor sessions, and to collect customer feedback. Few respondents also mentioned, that they use some advanced Google applications, such as Enhanced Ecommerce or Google Data Studio. Finally, some respondents also indicated, that they get valuable data from various other services, which they utilize together with the data from MyCashflow and GA. These services usually include different cashier and online payment software.

> *Of course, if we got no feedback at all, it would be very hard to develop. I might think of something myself, that "This is good!", but then a customer says, that "This doesn't work!". Sure, then we think, that we're here for our customers…*

Many scholars have also pointed out the importance of customer feedback and including also qualitative data into the decision making (e.g. Weischedel et al, 2006; Bucklin et al, 2009; Järvinen et al, 2015). Despite of the skills-level or the number of analytical tools in use, **customer feedback** was considered as an important source for development in this study too. A few respondents addressed the need to collect qualitative data, which would give more information about customers, their opinions and their preferences. They noted, that quantitative data alone cannot tell everything, and therefore, customer feedback is very valuable. Managers were eager to hear, what their customers think about them, their online shop and their products. This information can tell managers, if the company's and customers' ideas meet or not. Customer feedback was told to be used not only for quick fixes in the online shop, but also for bigger decisions. Some respondents were also very thankful for their customers' behaviour, because they are very quick to point out all minor errors or bugs on the website.

### 4.1.5 Opinions about the analytical tools

In general, the respondents' opinions about the analytical tools were quite positive. Some respondents were very happy about the tools, and they had no complaints about them. People were satisfied, that, for example, GA is a good software, which is available free-of-charge. The interviewees expressed, that if some information is needed, they have usually found that information from the applications.

> *Let's put it like that: Every time, that I've had to look for something, I've found that information. As said, unfortunately I have been able to spend too little time with it. I should be able to have more. It's quite versatile…*

However, usually people with less experience of GA admitted sometimes, that it is not the simplest tool, and sometimes it takes time to remember, where to find a certain information. Besides, some advanced users explained, that if something more detailed data had to be found, it might have been more confusing to find. In the end, these problems were not that crucial, and with a little bit of information and help, everything needed was usually available.

## 4.2 Process

We take a look at the analytics process next. Much like in some previous studies (Welling et al, 2006; Hong, 2007), the usage of web analytics in our examined companies appeared to be quite ad-hoc, and it was usually based on current projects and urgent needs. Surprisingly, that was also the case even in the companies, where the usage of web analytics was more advanced. Thus, the approach usually is quite operational despite of the company's know-how. Even though they use various data to guide them through all kinds of decisions, the data is always mined for a specific situation. Thus, most companies had no clear structure for analytics, which means, that there was not much reporting, dashboards or continuity.

Again, the lack of time and resources do not give a chance, that small and medium-sized companies could have a structured and continuous analytical system. There never seems to be enough time for the usage of analytics, and many people hope, that they would have much more time for looking at analytics. At the moment, their usage of analytics is based on current needs. If there is a question, which needs to be answered, or a problem, which needs to be solved, then the right data is looked for:

> *We don't have any regular reporting. If we have a meeting about something, then of course, they have checked out the needed things. [- -] For example, if we think about our blogshop, we check, from which sources our visitors have come, and what they are doing there. Or when we thought about our English-version: from where our customers find there, and what they are doing there.*

> *It's more like, I'm interested in something, then I browse that data and analyze it, so that I'll get an image of that, and how it possibly works.*

Because of this kind of a project-based ad-hoc perspective, the companies do not have any specific 'analytical systems' or 'combinations of metrics'. All the possible data is available in the software, like MyCashflow and GA, and some of that information is used, when it is needed for decision-making. Thus, if we think about more advanced companies, various metrics are combined from activity-based metrics to operational metrics, as suggested by Patterson (2007).

Previous literature clearly suggests, that metrics systems should contain a broad set of measures, which are linked to company's goals and strategy (e.g. Weischedel et al, 2006; Clark et al, 2006; Chaffey et al, 2012; Järvinen et al, 2015). Even though there are no specific metrics systems in small enterprises, web analytics are used to achieve marketing and business objectives. It could be argued, that companies, who utilize web analytics, are then able to focus on their primary interests, and they only utilize that information, what they really need to improve their business operations.

If we look at the data, which is monitored regularly, it could be argued, that the only source of information, which was followed on a regular basis, daily

or weekly, by almost all the companies, were the sales data. Consequently, if the company did active marketing efforts and paid advertising, their efficiency and profitability were also followed regularly, when updates, new campaigns and/or decisions were made.

When asked about the used time and efforts in analytics, precise answers were not given. Namely, the used time in analytics changes over time depending on the amount of other things to do, and whether analytics are needed either more or less. To sum up, even though the company should have an analytical approach, which is somehow present every day, the process itself is not organized or structured in any way. There are no named measures, which are followed or reported on a certain basis. Excluding sales data and marketing activities, monitoring the online performance is, thus, surprisingly little, and the usage of web analytics concentrates more on ad-hoc decision-making. Therefore, some respondents expressed, that they wish they could concentrate more on the measurement and analytics, but it is not possible in reality.

> *It would be an ideal situation, that I could reach the point, where I could really follow the data, and not only just shut down fires, but it just looks like this at the moment, when all the projects are unfinished.*

### 4.2.1 The presentation of data

Many articles have conducted, that companies should focus on their primary interests and they should try to avoid information overload (Phippen et al, 2004; Welling et al, 2006; Weischedel et al, 2006). In this study too, there was a consensus among the interviewed companies, that the data should be presented in **a simple format**, which enables quick interpretations, and all the necessary information is easy to spot and recognise. The respondents expressed, that sometimes there might be too much information available, which can be confusing, and then it can be hard to find the needed information. As it was indicated already before, the lack of time and resources is the biggest barrier in the usage of analytics, and thus, because entrepreneurs are very busy, they would appreciate data, which is simple and fast to analyse. Namely, some respondents expressed, that creating own graphics and charts can be very time-consuming.

> *I think it is interesting (data), when it is handed out in simple graphs and stuff. I'm not an analytical person at all, who would make some sort of Excel-charts etc, but when someone does those Excels for me, then it is nice to look at them and compare them to previous years.*

Therefore, the **visualization of the data** was seen as important. People expressed, that it is easier to analyse data with diagrams, figures, charts and etc. The importance of simple and visualized data, which is easy to interpret, was also recognized by LaValle's study (2011). Applications like GA and MyCashflow already offer some visualized data, which interviewees told, that they use, but

some companies with more experience and skills also explained, how they create their own customized charts and Excels based on their gathered data.

> *If you want it to be like that, that with a quick look you will get a good idea, so yes, it has to be visualized.*

In addition, a couple of interviewees hoped, that there would be 'clever reports' available, which would offer some automatically analysed, ready-to-use, information. The interpretation of the data is often time-consuming, and it is hard to acquire a clear analytical focus in the middle of all other tasks. However, these kinds of automated systems would save a lot of time and resources, and offer valuable help for every day operations:

> *And then of course, if I think about the bigger picture from our organization's perspective, the reports could be clever, so that they would already give you some conclusions, what's in here. I mean, now you can see the reports, but you have to interpret them a lot.*

The usage of customized **dashboards** received mixed reactions among the interviewees. For many entrepreneurs, the usage of analytics was quite simple, so regular versions were just enough to get all the necessary information, and they did not express any needs to get anything more special than the normal views, which are already available there. Most information is quite easy to find, so there was no important need to build customized dashboards.

> *There is this possibility, where you could create yourself, what information you want to see, but I have it (GA) in my phone, and with two clicks I'll get everything. So, I haven't created any.*

On the other hand, few respondents either already had, or they were planning on creating some personalized dashboards. Typically, these people knew more about data and analytics, and their competence for doing things like that was better than average. Furthermore, these companies seemed to have big amounts of data, and they expressed, that dashboards are a good way to organize central information in one place for them, because the amount of data is so big, that they really need some kinds of dashboards. The regular reports and such were not enough for them anymore, and they needed their own solutions.

> *They have lots of information there, so maybe some kind of a clearer dashboard for the shop, so we could see. There is a crazy amount of information within our online shop. I'm sure, that we could use Analytics on the shop-level to create some dashboards maybe.*

### 4.2.2 Data-driven decision-making

An important question, which the interviewees also brought up, is, if the data leads to some actual actions. Phippen et al (2004) argue, that there is a big difference, whether web analytics are used for simple reporting or as an information to plan future strategy. Consequently, according to Lee et al (2001): "Analysis is often meaningless without action." These arguments were supported in our interviews, as it was evident, that advanced companies, who really used analytics for making decisions, gained many benefits because of that, versus companies, who only used analytics occasionally without a clear strategic purpose. Sometimes, the followed things might be similar, but only the ones, who utilize that information for decision-making, are able to see the real benefits. Even the less-knowledgeable companies acknowledged, that they might occasionally check out some data in GA, but they cannot utilize it in business decisions.

> *More like, I'd ask myself, if it leads to any actions. Basically, no. We just hope, like how about the next day?*

> *Maybe because I cannot utilize it in any way. I just go and check: "Well, same amount than in last month. Good!*

According to Chaffey et al (2012), the usage of web analytics should follow a four-step circle: measure, analyse, test and optimize. If we look at this model, it is relevant especially among the companies, who do paid advertising, content marketing and/or big marketing efforts. These kinds of decisions typically follow this type of model: various advertisements or contents are used, their efficiency is analysed, bad-performing advertisements are removed, and more money is used in good-performing advertisements, and thus, the marketing performance is optimized.

We have also discussed the importance of sales data already, and in some cases, it can also follow this four-step circle model. Possibilities of using sales data are many, and while it can guide purchasing values of products and brands for some, some others may use it to model their most profitable customers, for example.

Optimization of the actual online shop was mentioned only rarely by interviewees. Usually, customer feedback was the main information source to recognize small errors and bugs on the website. Some respondents expressed, that optimization of the online shop would be time-consuming, and one could use hours of doing that. For example, it was said, that going through HotJar's sessions is tough and there is no point to use too much time on that. In general, entrepreneurs were quite happy with their websites, and they did not believe, that small improvements would bring major benefits for them:

> *I think it is important to do that 70 or 90 percent, and not to focus on that remaining 10 percent. I believe, at least if you're busy, you cannot with that last 10 percent…*

> *I don't know, if it's even possible, because nothing is ever ready.*

However, tools for website optimization were used, if there was an urgent problem, which had to be spotted and fixed. Furthermore, website optimization is important then, if a new online shop is launched, and there is a clear need to monitor the performance of a new website. Hence, rather than improving the current online shop based on the data, it seemed like, that many entrepreneurs wanted to publish a new version instead, if the old one did not seem to perform well enough. Otherwise, website optimization was quite reactive, and it based on ad-hoc repairing.

> *There is quite much gut feeling and trust, that "This is, how it goes." I think we base too much to that "I have this feeling, and it's because of this". And then it might not be that reason at all!*

Many respondents, from beginners to advanced, admitted, that sometimes they just have to trust their gut feeling and **intuition**, because there are situations, when data cannot actually tell everything. This was more common in the beginners' segment, but also some advanced companies admitted, that they might have situations, when they have to make a decision, which is based maybe a little bit on data, but also on intuition. On the other hand, if some analytics were used in a company, they wanted to bring at least some data to help to make the decision. Still, the data does not necessarily give the whole truth, and one must guess the right decision. In some cases, when the intuition is needed, the data can still help to bring some confirmation to the decision.

> *If it feels like, that there is an infamous gut feeling, then we'll try to confirm that with some data, so that we are going to the right direction.*

## 4.3 Context

We will discuss the analytical context next. This theme received the biggest importance in the study, as different factors were recognized, which clearly affect on the usage of web analytics. Namely, three themes about contextual factors were emphasized in the interviews: the lack of time and resources, skills and know-how, and the level of company's marketing activity. These themes are discussed next, while the marketing activity is brought to the discussion in the contextual framework.

### 4.3.1 The lack of time and resources

There was one theme, that was clearly addressed the most by all the participating companies. Namely, **the lack of time and resources** was mentioned as the biggest limitation, not only when harnessing data analytics, but also, when talking about business development in general. This observation is similar to many other studies as well (e.g. LaValle, 2011; Chaffey et al, 2012; Järvinen et al, 2015). In addition, like literature about small enterprises (Simmons et al, 2011; 2013; Jones et al, 2014; Alford et al, 2015) and our study also conducted now, small and medium-sized companies often lack the required resources, and the shortage of time creates challenges in day-to-day matters. Hence, time is limited, and people also need time to rest and to have free-time. Respondents described, how their workload is huge, and their 'to do' -lists are very long, and so many things are waiting to be executed. They expressed, that running things and daily tasks fill the schedules, so there is rarely time to really sit down and carry out strategic planning and such. Besides, running a small e-commerce business was described as 'shutting down fires' as there is always rush and sudden tasks, which should be fixed.

> *Running a medium-sized company basically means, that you have a foam extinguisher, and when you shut down one fire, you are already on your way to shut down the next one. If you really had the time sometime, that you would find the matches, which start the fires…But in reality, you just move from one place to another and shut down.*

Because of this continuous rush and workload, data and analytics are often forgotten and postponed to the future. As suggested also by LaValle (2011) and Järvinen et al (2015), many other things are considered much more important than using web analytics on a regular basis. Some respondents admitted, that looking at analytics always remains as the last thing on their 'to do' -lists, as there is not enough time to delve deeper into the subject.

> *It kind of always remains as the last one. Every day, you have this checklist, what should be done here, and who I should answer, and where I'll get that information, if that product is available and how fast. So, this roulette keeps spinning the whole time, and then the day always runs out.*

Hence, some companies expressed that they want to add more resources, and somehow organise more time for analytics in the future, because it is still considered to be an important part of doing profitable business. However, based on the interviews, it seems very evident, that the amount of time is one of the biggest factors, how much analytics can be used in a company. For example, one company explained, how the increased amount of time has clearly grown their usage of data:

> *We have had more time. In the beginning, when we worked at night and sold the products during the day, it didn't matter at all, where our sales were made, if someone just bought our products. We had no interest in anything extra, but now we have had more time to develop and organise it.*

Additionally, it was also pointed out, that analytics is not, and it should not be, the top priority for online retailers, as there are more important things to do too. In the end, having the basic things in order is all that matters, if one wants to make business, just like it was indicated in the previous citation as well. There is no usage for data, if the essential things are in a poor condition. Because the time is limited in small enterprises, it is absolutely necessary to prioritize activities. One must always take care of the basic things before looking at analytics.

> *Because doing with data and stuff, I'm sorry, but it's not the priority number one. If you have great charts and you do great things, but you don't have stocks, you do nothing with it. I mean, running the store and maintaining day-to-day matters is always the priority number one.*

### 4.3.2 Know-how

The other important factor, **know-how**, is closely related to the amount of time and resources. As suggested also by Alford et al (2015), the combination of lack of time and knowledge is a major obstacle to adopt marketing technologies. Even though the time is a big constraint among the companies, some of them still organise the needed time for analytics, while some of them do not. Hence, in many cases, know-how and skills, which are typically related owner-manager's own capabilities, determine a lot, how much analytics can be used within a company. Lack of competence and skills was also named as central issues by many earlier studies (e.g. Chaffey et al, 2012; Germann et al, 2013; Järvinen et al, 2015), and Alford et al (2015) pointed out, that small businesses might have no know-how at all, how to use analytical tools.

Moreover, closely related to know-how and skills, attitudes and personal opinions about analytics affect on the implementation. Whereas for some people doing analytics is fun and interesting, some others consider it as a boring and annoying task, which should be done, but there is no personal interest. It was also suggested in the previous literature: owner-managers in small firms are in a

crucial position, whether technologies can be adopted or not (e.g. Fillis et al, 2005; Wolcott et al, 2008; Simmons et al, 2011; Alford et al, 2015).

It is worth mentioning, that the analytical applications were quite easy-to-use for some people, while some other struggled with their usage. However, IT systems and different applications themselves did not prevent the companies from using analytics. It is more dependent on a person's own willingness and ability to learn to use these applications. Even the people, who did not feel sure, how to use the software, expressed, that it is more like a question of know-how, rather than the tools themselves. This finding, that IT and tools no longer slow down the implementation, was also conducted by some studies (LaValle, 2011; Järvinen et al, 2015). Hence, we will take a closer look on the used tools in the 'content' section, and not in this 'context' chapter unlike in our theory.

E-commerce and digital tools keep evolving constantly, and this trend was also recognized by the interviewees. One must be proactive and keep following the changes in the digital environment, in order to make success in the e-commerce business. Many respondents noted, that one cannot settle down and trust on the current level of knowledge, but instead, continuous learning and the knowledge about recent trends is very important. Some respondents also pointed out, that they had organised trainings and courses for themselves and for their employees, in order to stay updated. These courses were usually about doing successful digital marketing, and they were said to be excellent and useful.

> *You have to learn everything all the time again. In this e-commerce world, three years is already forever, because everything evolves constantly. You have to keep learning new things, so that you are updated, where we are now.*

Besides, it was not only the digital world, but also being an entrepreneur in general, which required continuous learning. People encounter various different challenges, when they are in charge of managing a small company, so they need to be ready to learn new things in many different areas constantly. Therefore, running a small enterprise is usually sort of multitasking, where one has to know a lot of things in numerous areas.

> *Of course, I have had to learn continuously, and that is entrepreneur's ordinary stuff. Here I am, kind of, in school all the time.*

Thus, some respondents admitted, that networking events, in which information and ideas can be shared and discussed, are very useful, because they offer a good place to develop one's own skills, and to find answers to mutual problems with other entrepreneurs. Many respondents explained, that they have had problems with some issues, but they have found solutions for them, because they know other e-commerce entrepreneurs, who have encountered same kind of issues. This finding is consistent with previous studies (e.g. Simmons et al, 2008; Alford et al, 2015) who conducted, that the information sharing with other entrepreneurs is very important among small businesses, and it helps to adopt new technologies better. However, there were also some respondents, who were a bit doubtful

about these kinds of events and sharing information. The problem among them might have been, that they have not found any relatable entrepreneurs, who would be at the same level of activities.

> *It would be great to talk with someone, who could give perspective, if our own numbers are good, and what we should raise, and what we should do. Precisely that sparring help would be awesome.*

### 4.3.3 Top management involvement in this study

Many studies talk about, how top managers have a crucial role in the implementation of web analytics (e.g. Davenport, 2006; Germann et al, 2013). Besides, Järvinen et al (2015) recognized, that the lack of leadership slows down the usage of web analytics. As most of our interviewed companies were small, there is no need to talk about 'top management', because in many companies there was basically just a couple of employees, who were often also owner-managers, and thus, they took care of all tasks from management to marketing, and to shipping the orders.

Thus, it is better to examine personal capabilities and attitudes of these owner-managers or persons, who are in charge of online solutions. However, it could be still argued, that the issues in small companies are somewhat similar to larger companies as well, but only on a smaller scale: As suggested by previous literature (e.g. Wolcott et al, 2008; Simmons et al, 2011; Alford et al, 2015), if a founder is analytically oriented, he or she will more likely to utilize web analytics in company's decision-making, too. The same thing applies to big companies, as conducted also in the previous literature; analytical managers encourage their companies to utilize analytics more. Furthermore, we had a couple of slightly bigger companies among our interviewees, and if we take a look at them, managers' personal attitude and interest in analytical things did reflect the usage of web analytics within the whole company. For example, one case revealed, that a CEO was not very interested in numbers, and their new marketing employee was responsible, that they started to utilize web analytics. Hence, the usage of analytics was dependant on the capabilities of a single person:

> *If I wasn't here, there would be someone else here, who wouldn't know anything of this. Then, no one would realize to ask for it. This all, which has been brought here, they are all my ideas, and something, that I've come up with.*

## 4.4 Contextual framework

To further observe the contextual factors – analytics usage, know-how and attitude – we created a contextual framework, which is presented in the Figure 2. We used typification to recognize companies with similar characteristics (Hirsjärvi & Hurme, 2008, p. 174-175). The horizontal line indicates the know-how in the usage of analytics, while the vertical line depicts the level of analytics implementation within a company. These lines form four separate fields, which are here to categorize different kinds of companies. We have already referred to these companies a few times – beginners, conscious and advanced. Firstly, companies in the top-right corner, where both know-how and implementation are high, are named as (1) advanced. Secondly, companies in the bottom-right corner, where know-how is high, and implementation is low, are named as (2) conscious. Thirdly, companies in the bottom-left corner, where both know-how and implementation are low, are named as (3) beginners.

The fourth corner, where implementation would be high and know-how low, remained empty, and we could not place any of the companies in that category. We argue, that one cannot implement web analytics without any knowledge, so one must learn and execute simultaneously, and that is why the top-left corner is basically an impossible combination. Thus, know-how must improve at least a bit, and then the usage of analytics can increase. Therefore, these three fields could also be viewed as three consecutive stages, where beginner is the first stage, conscious is the second stage, and advanced is the third. Also, LaValle (2011) used a same kind of three-staged categorization based on company's analytical capabilities – aspirational, experienced and transformed. Even though they both use a three-stage categorization of companies, the models are different. In our model, we want to especially recognize, what kind of reasons explain the usage of analytics in different kinds of small enterprises.

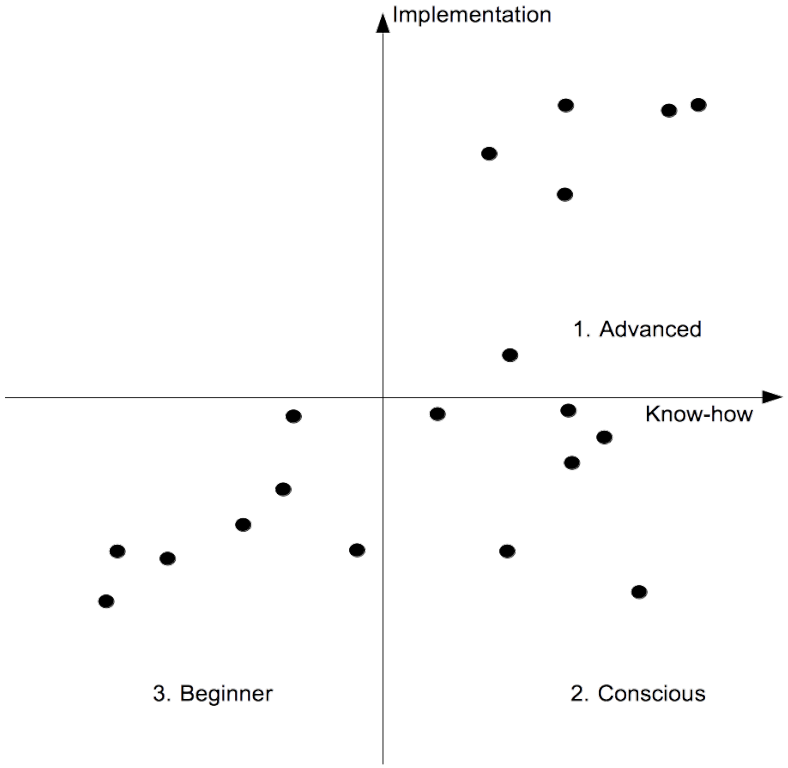


Figure 2 Contextual framework

Besides know-how and attitude, company's marketing activity explains the variations in the usage of analytics in many cases. Typically, advanced companies utilize various marketing channels, which means, that web measurement is also needed. Conscious companies are usually starting some marketing efforts in the near future, and they are also planning to start measurement, once the marketing starts. Beginner companies do not usually have many marketing efforts, which also means, that there is no obvious need for web measurement. We will discuss these issues later, when we look at every category in detail.

> *It's just sort of a phenomenon, that when one uses some money (in marketing), then one is suddenly more interested about it, how it works and stuff.*

The 19 examined companies were placed quite roughly to the framework based on the information gathered from the interviews. The author wants to point out, that the companies were placed to the framework to depict the dynamic nature of know-how and implementation. The amount of know-how and level of implementation are quite relative phenomena, and they are not easy to estimate. Therefore, the purpose of the framework is to examine the usage of analytics in various companies with different kinds of stories and backgrounds and to locate them to the three fields in order to recognize typical characteristics of companies with different skill-levels. It does not reflect the whole truth, and it is used to highlight findings in this research.

### 4.4.1 Advanced

By advanced companies, the analytics usage is continuous, and decisions are based on data as much as possible. If we think about the data content, many of these companies are in the third level (look pages 39-40), and they use various tools. On the other hand, there are also many companies, who may use only My-Cashflow and GA, but their usage is very efficient and ambitious.

These analytical tools are used on a regular basis, because that information is used in ongoing projects or to plan marketing activities. The advanced companies typically use various marketing channels and they may do a lot of paid advertising, and thus, web measurement is crucial and important for them. Besides active marketing efforts, there are multiple reasons, why they have taken an analytical business approach, and now we are going to take a look at these characteristics.

Within this segment, we can recognize two types of companies. In the first group, they have more than a few years of history, which has given them time to develop routines and knowledge about the industry and business. Since they have grown, they might have developed their own skills in the usage of web analytics or they have gotten more resources over the years. In the second group, they only operate in the e-commerce business, and they do not have any other activities on the side, which would require resources, such as brick-and-mortar shops or wholesales. In this case, they have more time and emphasis for digital marketing actions, and the interest in analytics comes with it. In both cases, they have organised time for using analytics, because they know its importance. Also, like citations below indicate, people in these companies typically are very data-oriented, they like to play with numbers, and it is fun and interesting for them.

> *I'm very data stream oriented. Just a lot of data into my brains, and then I shape some kind of an image in my head about it.*

> *Yes, I do it all the time (analytics), I want to do, I pursue to do. I think, doing this is a great job, because it's like playing poker online, but you cannot lose.*

However, these people tend to be very modest about their skills and knowledge, and they keep saying, that there would so much more, what they could do and what they could learn. These people seem to know, that they will never be ready, and one could always do something more, but they are still satisfied, when they do that amount, which is enough for their business.

> *I mean, my own knowledge is just not enough, even though I am personally doing quite deeply within the e-commerce business, but it's not enough.*

Despite of their modesty, they use data to guide them through various decisions, and it is present in everyday actions, even though it is not necessarily very organised or structured. They have the required know-how to look beyond the numbers, see the bigger picture, and find the relevant information for decision-

making. Also, Davenport (2006) pointed out, that this knowledge, how to delve deeper into the analytics, is a sign of a company with a successful analytical system. Moreover, as these people are business-oriented, they want to see the monetary impact in their measures.

> *That interpretation. If you only take one piece of an information from there, if you only follow visitor traffic, it doesn't tell anything. If you only follow conversion, it doesn't mean anything. Instead, their connection to the used marketing budget, how much we have used money to get a certain amount of visitors to our shop to buy with a certain amount of money.*

Furthermore, there are three sub-groups within this segment, which describe, how these people have acquired the required analytical knowledge. First group has gained their knowledge through previous work experience and/or technological education, which has given them a broad background knowledge about marketing, IT and web analytics. They have used analytical tools since the start of their companies. These people are very deeply involved in the whole e-commerce scene, and they seem to know recent trends and news, because they participate in different projects and networking events. They also highlight the fact, that they need to keep learning and following the field constantly.

By the second group, the organization is usually slightly bigger, and they have more than a few employees. Thus, there is typically an own marketing manager or a team, which takes care of the marketing actions and analytics. This kind of a company has resources to hire the right people to be responsible for these areas, and that is why they can utilize analytics quite well. However, the performance is highly dependent on that person's skills, so they need to be careful, that they hire the right people, as it is also suggested by previous literature (e.g. Davenport, 2006; Germann et al, 2013).

Thirdly, there is a group of companies, where the founders have reached a good level of analytics usage through self-learning and their own activity. Their background and earlier work experience might be something else than business and e-commerce, but their passion and interest towards running an online shop and digital marketing has made them enthusiastic about measurement too, and they have realized its importance. Typically, these people are 'real entrepreneurs' in their heart, and they have been brave and curious to try and learn new things. This entrepreneurial attitude was also highlighted in previous literature, when the context of small enterprises and owner-managers were examined. (Fillis et al, 2005; Simmons et al, 2008; 2011).

### 4.4.2 Conscious

Just like advanced companies, conscious companies are very well aware of the importance of analytics and its benefits, and people in these companies are usually very business-oriented. Unlike advanced companies, however, they have some contextual factors, which prevents them from using analytics as much as they could. They have many similar applications as the advanced companies, but

they do not use them as much. Hence, their skills and attitude are on a good level, sometimes even at the same level as in the advanced companies, but they are in a situation, which takes a big share of their time and resources, and that is their biggest barrier. Typically, these companies have some other operations besides their online shop. Their usual background story could be, for example, that they have started their business with wholesales or a brick-and-mortar shop, and after some time, they have also opened an online shop. Hence, e-commerce has not been their primary source of business, and thus, the other operation, such as wholesales, requires a lot of their time and resources. That is why, they have had not much time to concentrate on the success of their online shop.

> *All this tracking, marketing and everything there on the digital side, it's completely left undone now. And it doesn't happen very easily. Or even if it is not completely undone, but there is just a crazy amount of work, so we need more those resources.*

> *Our online shop is lagging behind there. We do work a lot with it, daily and weekly, but we are not an e-commerce business only, so that we could only focus on it.*

In addition, these companies are usually working with a 'next big step', which can mean, that they are about to increase their input in marketing or they want to start selling their products abroad. No matter, what kind of a step they are planning on taking, it is something, which requires more marketing and analytics. Therefore, they understand, that they should also organize more resources for web analytics in the near future. The current situation, in which they are at the moment, is not enough for them, and they want to aim higher and achieve more.

> *It's very occasional, but it should be regular and active. That's our goal, and we should reach that. We do that way too little.*

While the advanced companies are active advertisers, the conscious companies have not yet reached the same level of marketing activity. Their currently used marketing actions are measured, but they still address the need to increase their marketing input and the measurement with it. In the future, they want to concentrate more on their online shop, and to advertise and develop it. For many of these companies, it only seems like a matter of time, when they will evolve towards the advanced segment. Moreover, some of the companies might be somewhere in the middle of advanced and conscious segments, as they have started to add more resources and marketing inputs on small steps.

### 4.4.3 Beginners

The name of the group, 'beginners', refers to the state of the analytics usage within a company, not the company or its' operations itself. Beginner companies utilize web analytics maybe only a little or not at all, and their primary source of

information is MyCashflow. They might check GA or Facebook Analytics occasionally, but there is no strategic perspective. Their competence in the usage of web analytics is quite limited, because they do not have much personal interest in data and numbers. Thus, people in the beginner companies are not usually very business-oriented, but they have a passion towards their company and the products, that they sell. Typically, they may have started the business based on their passion or a hobby, and it is something, that they really like and enjoy. It could be argued, that people in these companies typically are sort of 'artists' or people, who are very creative, and they are not so deeply interested in serious business things. Because of their limited know-how, seeing the actual benefits of web analytics for their business may be quite hard.

> *Well, if I'm asked, I'll say: It's just useless. But if someone else is asked, then I guess, that he or she says, that it is very useful, when it is done by a person, who can use it.*
>
> *If you don't have any interest, well, then it just stays there in the back. [- -] They are boring, technical numbers.*

Usually, beginner companies do not utilize many marketing methods. Their marketing inputs are mainly costless, and they have not used much money in marketing activities. Again, since their marketing activity is quite small, it can be also one reason, that they do not use web analytics that much. Because they do not use any money on digital marketing, there are not so many things, which could be clearly measured. Even though these companies do not have many marketing activities or web measurement, they may still perform very well. For example, because of their rare and special products and superior customer service, they have created a strong customer base and a growing profit curve.

However, it is noteworthy to point out, that beginner companies still understand the fact, that web analytics would be important, and it could bring some benefits. But like the citations above indicate, people in these companies have no knowledge, how to actually utilize them efficiently. Just like Weischedel et al (2005) noted (also Welling et al, 2006; Hong, 2007), these companies might follow some simple web analytics occasionally, such as visitor traffic and conversion, but they have basically no idea, how to harness that data into strategic decision-making. Like Alford et al (2015) noted, they acknowledge the importance of marketing measurement, but they do not have skills to execute it professionally.

Thus, the lack of understanding easily creates an image, that doing analytics is very difficult, and it takes a lot of effort to learn to use the tools, and to utilize that information. In addition, it may appear as a disgusting task, which is always postponed to the future. Not to forget the fact about the lack of time and resources, the usage of analytics always stays behind in the middle of all the other compulsory responsibilities. There is not enough time to study, learn and try to use the analytical software, if there is no previous background knowledge. Hence, the biggest barriers in this group are both the lack of time and resources, and the lack of know-how and skills.

> *There is no know-how. There is so much hurry, there are other things, people don't have time for everything. And then, when you have to learn that yourself (analytics), and then you should have the time to do those things as well!*

Within the beginner group, we can recognize two groups, which have different attitudes towards the usage of analytics. Firstly, we recognized a group of companies, who would be ready to learn to use web analytics, if someone just showed them in detail, what to do, and what kind of features to use for different things. They suggested personalized trainings, which would present, for example, the main features of GA. Hence, the lack of time is the biggest barrier for them, because they do not want to learn to use them alone, but with proper trainings, they could learn to use web analytics at least on a basic level. Trainings were also suggested by many other studies too (Weischedel et al, 2006; Mintz et al, 2013; Järvinen et al, 2015). Besides, Alford et al (2015) suggest, that owner-managers should be helped with new skillsets, so that they would realize the full benefits of different online tools. Moreover, micro-enterprises should be offered with individualized technological assistance, which recognizes the special needs, which may vary a lot between enterprises (Wolcott et al, 2008).

> *It would be so much easier, if someone came to tell you about those things. That you start to delve it yourself, that "What is this again?" and "Where do I find this? and "What can I use this for?" I mean, it feels like…*

> *We have said, that we would need some sort of a support person, who would follow and give advice.*

Secondly, by the other group of companies, the interviewees expressed, that they do not have any personal interest in numbers and analytics. Moreover, they believed, that they would need someone else to do the analytical tasks for them. They were basically ready to give the analytical responsibilities for other people, because they wanted to focus on something else instead, which they were personally more interested in. In these companies, it would be quite hard to see, that the usage of web analytics would take any actual steps further without some assistance from the outside.

> *It is terrible to say, that I'm not interested, but there would be many other important ways to spend your time. Here by us, I want to lead our brand forward, and someone else could take care of the numbers.*

> *Now, this new employee, one of his tasks will be the data: monitoring, gathering, analysing. I haven't used much my own resources for that, and I've thought, that it's better to use my own limited time for other things.*

# 5 CONCLUSIONS

The purpose of this study was to describe in detail, how small Finnish online retailers can utilize web analytics in their marketing activities and decision-making. This study contributes to the existing literature both in the field of web analytics, and technology usage in small companies. To fully examine this theme, we divided the subject into three dimensions based on Järvinen et al's framework (2015): content, process and context. Next, three research questions were placed to shed light on all the three dimensions:

1. What kind of data is collected?
2. How is the data managed within companies?
3. How does the organizational context effect on the usage of web analytics?

To answer these research questions, we conducted 19 semi-structured interviews among Finnish entrepreneurs, who have an online shop, which has seen recent growth during their existence. The data was then analyzed by conducting a content analysis, and we also utilized thematising and typification.

Our study is consistent with many previous studies, but we also came across with some new findings. First of all, when we look at the question number one: 'What kind of data is collected?', we conducted that the most important measures for online retailers are sales data and the information about traffic sources. However, these data were not really highlighted in the previous studies. Our study indicates, that these data help managers to carry out various decisions from marketing activities to purchasing values. They are quite easy to make interpretations, and they offer valuable information about the online shop performance both financial and marketing perspective in mind.

Besides, following marketing profitability is very important for those, who do paid advertising. People, who are business-oriented and know more about analytics, highlighted the fact, that it is important to follow financial matters, and to optimize the usage of their money. For monitoring, the amounts of visitors, conversions and shopping carts were quite popular among many respondents, but these data did not offer that much practical value, compared to sales data and traffic sources. Additionally, customer feedback was also considered to be an important source of information, and many companies used that information for website improvements and such.

If we examine the used web analytics in the light of online purchasing path, we can see, that the most popular measures are clearly related to customer acquisition and conversions/profits. On the other hand, the data about customer's website behavior was not considered that important. We argue, that it may be because of the complexity of the analysis, and it requires quite deep involvement. The results are not as easily visible as in the case of acquisition channels, for example. Furthermore, there was no mentions about data, which would measure

any post-purchase activities or behavior. Thus, the most relevant data have usually something to do with customer acquisition (marketing and channels) and monetary perspective (sales and conversions).

Secondly, when looking at the next question: 'How is the data managed?', the usage of web analytics appeared to be quite ad-hoc throughout the companies, which also supports the findings in the previous studies (e.g. Welling et al, 2006; Hong, 2007). Many earlier studies suggest, that web analytics are mainly utilized for short-term activities and performance monitoring, instead of strategic planning. Despite of being still ad-hoc, we argue based on our study, that if web analytics are utilized somehow, there is even more strategic, operational, perspective than general performance monitoring. Accordingly, as companies are very busy, there is rarely time to regularly monitor the numbers. Typically, entrepreneurs follow the sales data, which tell enough about the recent business performance. Other than that, when the online data is needed, it is used for some business decisions, such as targeting campaigns or planning product purchases.

Moreover, we also argue, that the usage of data within small companies is quite unstructured, and there are no clear processes to manage the data. Respondents admitted, that there is no regular reporting, and the used time for analytics changes over time, based on the urgent needs and ongoing projects. A central question related to the usage of web analytics is, whether the data is only checked occasionally, or used as an important information for decision-making. Advanced companies have the know-how to harness the data into actual decision-making, while beginner companies do not have the knowledge for that. However, many companies, including some advanced ones, reported, that sometimes there is no other choice than trusting one's intuition, as the data do not always tell everything.

Consistent with the previous literature (e.g. Phippen et al, 2004; Welling et al, 2006; Weischedel et al, 2006; LaValle, 2011), the respondents also expressed, that the data should be presented in a simple format, which includes informative visualizations, such as charts and diagrams. The amount of data is huge, so it is important to focus on the primary interests. In addition, clever reports, which would offer ready-to-use information, were also suggested by some respondents, because it would make the data processing faster and less time-consuming. In general, interviewed people were quite satisfied with the applications they use, which in this case were MyCashflow, GA, Google AdWords, Facebook Analytics and HotJar. As all the data is stored in these applications, companies do not have any actual 'metrics systems', and they always just look for that specific information from these applications, when something is really needed. Based on the current needs, a broad set measures may be used.

Finally, our third question: 'How does the organizational context effect on the usage of web analytics?', probably provided the most important findings. We found out, that the lack of time and resources has a big impact on running small companies. It is not only in web analytics, but it also affects the whole business in general. Entrepreneurs are very busy, their 'to do' -lists are very long, and there is no time to take care of all possible tasks. Hence, having time for something else than essentials, such as web analytics, is quite a rare occasion. In addition, the

lack of skills and know-how is another main reason, why web analytics cannot be used in a company. Together with the limited time and resources, many companies do not have time to familiarize themselves with the web analytics tools and their efficient usage. Finally, the level of marketing activity was a good indicator of the usage of analytics, as the more a company did marketing, the more interested they were about measurement and financial results. Companies with no marketing basically had not so many things to follow besides their sales and website traffic. Hence, our findings about contextual factors are consistent with the studies about small and medium-sized companies' technology adoption (e.g. Simmons et al, 2008; 2011; Jones et al, 2014; Alford et al, 2015).

Our study did not find any major proof, that IT and tools themselves would have an impact on the usage of analytics. It could be, that the existing applications, such as GA, are quite easy-to-use and user-friendly, so these systems are no longer barriers themselves. As it was mentioned before, it is more about a person's own ability and willingness to learn to use these tools. Hence, this question is also related to the skills and know-how. In conclusion, and to put it simple, the major things, which determine, how much web analytics can be used in companies, are the amount of time and resources, the level of skills and know-how and the level of marketing activities.

Furthermore, we argue, that our three-group categorization of companies is the biggest contribution of this study. We conducted, that there are three different types of companies – beginner, conscious and advanced. Firstly, beginner companies do not gain any clear benefits from the analytics usage, and the usage of analytics itself is very low. They do not have the required competency and know-how to efficiently utilize web analytics in their decision-making. They might also have a slightly negative attitude towards analytics, and it can be seen as a compulsory business thing. Secondly, conscious companies have the skills and knowledge to utilize analytics, but they lack some crucial resources, which prevents them from using analytical tools with a full potential. They are usually working hard with a 'next big step', which would also take them further in the analytical process. Thirdly, advanced companies have harnessed analytics tightly into their business and decision-making. Although it may not be very structured approach, decisions are based on data as often as possible, and the data is present in everyday matters one way or another. We will discuss these groups more in the next section later, as we suggest a few practical implications.

To conclude, Järvinen et al (2015) suggested, that all three dimensions – content, process and context – have an impact on a company's ability to utilize web analytics in their operations and decision-making. Based on our study, we argue, that among small companies, contextual factors have clearly the biggest role. Structured processes may be somewhat non-existent in many small companies, but it does not prevent them from using web analytics. Furthermore, nowadays the data content is already available there in different applications, so it is just waiting for a proper interpretation. Hence, the aspect of content is also highly dependent on contextual factors – how people in companies are able to utilize that information. Therefore, we argue, that contextual factors have a major impact on the data content and data process.

## 5.1 Practical implications

As all enterprises have at least some problems to find the needed time and resources for the business, it is an evident area, which should be supported somehow. Since hiring new people is a big monetary investment, and recruiting is somewhat time-consuming, and it is not always easy to find the right people, some other ways should be also invented in order to help entrepreneurs to have more time and resources. If we think about the analytical side, companies would appreciate data, which are automatically interpreted, and they would offer some sort of ready-to-use information. As it was quite clear, that managers do not have enough time to look at the analytics, ready-to-use reports would save a lot of entrepreneurs' limited time. Clear information about, for example, marketing profitability, customer segments and website performance would be useful for decision-making, if it was in a simple and easy format with major practical implications.

The aspect of know-how should be also noted, when thinking about a small enterprise's capabilities for marketing and measurement. Especially, if we look at the beginner companies, they should be supported with various consultation and training opportunities. In order to become more data-driven, there would be two different ways. Firstly, there is a group of companies, who would be willing to learn and educate themselves, if there were suitable trainings available. The possibilities to increase know-how and skills would shape a path towards the conscious and advanced segments. Among the advanced companies, we recognized a group of companies, who are self-learned professionals. That would be the goal, where this beginner group could aim.

Secondly, there is a group of companies, who are not very eager to utilize analytics themselves, but they would be more interested in hiring someone for being charge of analytical things, and maybe marketing too. Hence, they should find the right people to be hired as marketing managers and other positions like that. This path would take them towards the advanced segment, and the group, where companies have become more analytical, because they have hired the right people with the right skills. Also, outsourcing possibilities could also be a reasonable option, because it would be maybe not only cheaper but also safer, than hiring completely a new person to the company.

Considering all types of companies from beginners to advanced, networking and peer support are great ways to share information and solve problems. Companies, who had more experience of this, were usually very happy, that they have been able to overcome challenges and problems together with other entrepreneurs. These kinds of events provide entrepreneurs great ways to develop their own skills and know-how. However, it is very crucial, that companies can share information with entrepreneurs, who are in a similar situation and they have a somewhat similar skill-levels. Otherwise, the events could be less purposeful. Still, it would be important to have someone as a sparring person, who would know a little bit more, and could help the others with their challenges. At least someone in the group should have some knowledge on the discussed topics.

Then, if we think about the data content, marketing literature has suggested already a long time, that marketing has to be accountable and financially measurable (Clark et al, 2006; Patterson, 2007; Stewart, 2009). Based on our findings, we argue, that web analytics have answered this call quite clearly, and they have offered a big step forward in measurable marketing. Nowadays, basically all kinds of marketing actions can be measured somehow. Managers expressed, that it is a big help, that one can really see, what is working and what is not. Thus, we argue, that the biggest benefits in web analytics are precisely related to marketing measurement.

Pakkala et al (2012) has pointed out, that the usage of web analytics is relatively easy nowadays, and it does not necessarily need big efforts or financial investments. However, Phippen et al (2004) and Bucklin et al (2009) have noted, that basic measures do not offer enough insight for marketers, and those numbers can lead to inaccurate interpretations. We argue, that both of these arguments have something right. Indeed, the analytical applications nowadays are relatively easy to use and free-of-charge, and with a little bit of learning, one can learn to use them very well. It is just a matter of willingness and interest. However, if we look at the beginner companies, they may occasionally look at the basic measures, but they do not gain any benefit for that, and it is just simple performance monitoring. In contrast, advanced companies use these same numbers, while they also utilize some other data, which are usually some financial measures.

Thus, if one really wants to gain benefits from the web analytics, and use it as a tool for decision-making, it requires a little bit more competence. Especially, the knowledge, what information is actually relevant, is very important, so that the right things can be looked for and combined with other data. There is a big difference between those, who just occasionally check the metrics, and those, who can harness that same information to actual decision-making. Therefore, as much as it is important to provide trainings, how to use the tools and software, we argue, that it is equally important to emphasize, how that information can help one to guide his or her business. For instance, one could provide case examples from other similar companies, how a certain information can be used to make decisions about marketing campaigns and such.

## 5.2 Evaluation of the study

Traditionally, research's credibility is evaluated through reliability and validity. These terms relate more to quantitative studies, and their usage in qualitative research is questioned (Hirsjärvi et al, 2009, p. 232; Tuomi & Sarajärvi, 2009, p. 136). Reliability indicates the overall consistency of a measure. Reliability is on a good level, if the same test result is received on two different research occasions, or two researchers end up in same conclusions. Furthermore, validity means, that the research method measures exactly the right phenomenon, which it is supposed to measure. (Hirsjärvi et al, 2009, p. 231.) The main critique towards these terms address the presumption that there is only one actual reality, while among

qualitative studies, it is usually believed, that the reality is constructed by individuals in specific contexts (Tuomi & Sarajärvi, 2009, p. 136).

Thus, there is no single way to evaluate the credibility of qualitative studies (Tuomi & Sarajärvi, 2009, p. 140). Hirsjärvi & Hurme (2008, p. 189) note, that the concept of reliability is the closest in the quality of qualitative data. In that sense, reliability refers to the researcher's own actions, and how he or she conducts the actual analysis. Indeed, it is important to describe and explain the whole research process as well as possible. This means, that everything should be carefully described from the data gathering and interviews to classification and analysis. (Hirsjärvi et al, 2009, p. 232.) Also, Tuomi & Sarajärvi (2009, p. 141) point out, that the credibility can be improved by offering a detailed insight for the readers, how the data is gathered and analysed. The author must be able to justify his or her conclusions and indicate clear proofs, how the conclusions are drawn (Hirsjärvi & Hurme, 2008, p. 189; Hirsjärvi et al, 2009, p. 233).

In this study, we have pursued to describe the research process in detail. The author explained carefully, how the analysis was made, and what kinds of methods were used. Moreover, the results are presented in a way, that lots of quotations are present to support the findings. As it was said before, the author was able to acquire a good idea of the data in the interviews already, and the data was transcribed right after the gathering process. Additionally, the analysis followed immediately after the transcribing work. Hence, the process was very continuous without any longer breaks, which enabled, that the process was smooth and coherent. Besides, the observations were shared between other members in the project, which enriched the understanding of the data.

We also used a reasonable amount of time to develop the questions for the interviews. The question list was reviewed by a couple of different people in the research project. Accordingly, in the first interview, we examined and evaluated, how our interview plan worked out in practise. It turned out to cover all the themes very well, so no changes were made after the first interview, and we used that question list in all interviews. We believe, that the question list was purposeful, and there was no possibility for misunderstandings and such, because the questions were clear, and they were adapted to a company's environment.

## 5.3 Limitations of the study

This research does not come without any limitations. First of all, the results of this study are not generalizable, because we only interviewed 19 companies with a purposive sample. We interviewed specific companies, who were customers of MyCashflow, and they do not represent a generalizable sample. Furthermore, the point of saturation was reached, but the amount of interviews is not enough to conduct universal findings. Even though the results offer a lot of interesting and important knowledge about the usage of web analytics within small Finnish E-commerce businesses, the findings are established in our examined companies' own context.

Secondly, the interviewed companies differed a lot in terms of know-how and background. While some respondents knew a lot about web analytics and data, some others did not have any personal experience in the usage of web analytics. Although it was the purpose of the research, that companies with different analytical skill-levels are studied, it also meant, that the interviews had to be adapted to an interviewee's own context. Hence, we discussed the data with some interviewees a long while, but with some others there was not so much to talk about, if there was no personal knowledge about these issues. That is why the lengths of interviews varied quite much, and some interviews lasted much longer than the others. In the end, the interviews looked like very different. Even though we covered all themes with the interviewees, some themes were highlighted more in some interviews, while some themes did not receive same attention. This may not be a clear limitation in semi-structured interviews, but it had to be noted in the analysis part by the author.

This brings us to the third limitation, the author's subjectivity. Even though the author paid a lot of attention to the analysis and drawing conclusions, it cannot be forgotten, that in qualitative studies there might be a hint of author's subjectivity. The author tried to make the research process as transparent as possible to address this issue, but it is a reader's responsibility to evaluate, if the objectivity and a trustworthy analysis is really achieved. It is worth remembering, that the analysis was guided by the previous theory, which was based on two research directions: web analytics and technology adoption in small companies. Also, since the author is a student of marketing, that kind of a perspective might have affected at some level on the final analysis.

## 5.4 Future research directions

Like it was indicated before, the results of this study are not generalizable. Hence, a quantitative study, which would investigate these themes, would be a great addition for this study. Especially, the contextual framework could be tested, if it is a valid model universally. In our study, many industries were present, but some industries represented a bigger part in the whole sample. Hence, it would be worthwhile to include a balanced sample of industries, or then, investigate certain industries alone. Some product markets might require different kinds of marketing activities and different kinds of measures. For example, a company, which sells children's' clothing might have different digital marketing methods, as compared to a company, which sells cycling accessories.

Moreover, our examined conscious companies were in points of change and development. They emphasized, that they are going to make changes, and add more resources for e-commerce, digital marketing and measurement. Hence, it would be very exciting to see, how these companies will look like in a couple of years. That would also provide a very interesting future research topic: How these companies have made progress in the usage of analytics and marketing ac-

tivities? This kind of a case study could reveal more insight about the implementation of web analytics, as there would be two different cases from the same company. Of course, the beginner and advanced companies would also be great study objects, as they also develop over time, and nothing is ever ready. However, conscious companies are particularly interesting, since they expressed their desire so clearly, that they want to make progress in the near future. Hence, longitudinal studies, for example, could explore the development of certain companies over a longer period of time.

Finally, the aspect of learning and acquiring technological skills is especially interesting. The utilization of networks was seen as important not only in this study, but also in previous literature as well. As noted by Alford et al (2015), it would be interesting to examine more closely, how small enterprises can utilize various networks to develop and sustain important technological skills. Namely, there is a real challenge to keep up with the pace of technological development. This could be a research direction of its own, that how, and by which means, enterprises are able to follow the technological progress, and adapt new solutions for their business. The aspect of networks would be particularly interesting.

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