5-2020

Web Analytics: Best Practices for an Organization's Successful Performance; A Preliminary Analysis

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Web Analytics:

Best Practices for an Organization's Successful Performance; A Preliminary Analysis

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A dissertation

presented to

the faculty of the Department of Media and Communication

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Master of Arts in Brand and Media Strategy

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by

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May 2020

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Keywords: web analytics, data, KPIs

ABSTRACT

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This research presents an exploratory study concerning organizations' best practices of Web analytics for a successful performance and the factors influencing the companies' successful adoption of Web analytics.

A qualitative research methodology was used engaging a comprehension of Web analytics adoption using the Diffusion of Innovation theory (Rogers, 1995) and the theory building approach (Eisenhardt, 1989). Interviews with five companies from different industries were conducted.

Findings suggest that for a successful performance, companies should consider:

- Data for better decision making.
- Web analytics barriers
- Selecting the right KPIs and metrics based on the company's goals.
- Web analytics trends

A mixed-method approach comprising other extensive methods of data collection should be conducted. Investigation of the use of specific metrics and KPIs within companies from different

industries, as well as the strategies for working past the barriers that impede companies from adopting Web analytics should be considered.

ACKNOWLEDGEMENTS

First of all, my distinctive and genuine appreciation goes to my supervisor, Dr. Melanie Richards for accepting to guide me throughout this research. Thank you for your advice, your support, your motivation, and especially your patience. Thank you for everything you have shared with me throughout this whole research project. I am definitely very lucky to have had the opportunity to work with you on this thesis. My thank you also goes to Dr. Susan Waters and Dr. Stephen Marshall for accepting to be part of my committee. Many thanks to the department of Media and Communication at ETSU for all the amazing opportunities it offered us, and all the great knowledge we got to acquire in this program, and that helped me, personally, in this thesis.

I would also like to thank all the participants of the different companies selected as case studies, and who accepted to be interviewed and take part in this research. Without their contribution, it would have been impossible for me to succeed in applying my methodology.

Lastly, I would like to express my sincere and earnest gratitude to my family and friends who have supported me throughout my whole academic career, and throughout this research especially. Thank you to my dad, my two sisters Laila and Lamyae, and my fiancé Zakaria for their continuous heartening and encouragement. A very special thank you goes to my dear mother, who is watching over me from heaven, and who I know would be very proud of me and of all I have achieved until today.

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Chapter 1. Introduction

Background

In all industries around the world, top leaders and managers tend to reflect on the full value they are receiving from the large set of data they already own within their companies. New technologies are assembling more information; however, many companies are still trying to find better approaches to gain value from their data and take part competitively in the marketplace (Chen, Chiang, & Storey, 2012). Recent research indicates that there are many organizations who are failing to make use of Web analytics' best practices. Consequently, these companies are not obtaining the results and profits they should get from such technology. (Chaffey & Patron, 2012).

In spite of the good foundation of Web analytics services, it is apparent that the technology of Web analytics is, up to this day, not made use of as extensively in order to positively influence the performance of companies, and more specifically their marketing operations. The levels of adoption are apparently quite high, yet the usage of these services continues to be unpredictably poor.

When it comes to an organization's marketing strategy, the role of digital marketing has been growing within different industries and sectors as shown in the large amount of digital marketing activities investments, which according to Gartner (2013), this accounts for 26% of their total marketing budget. These investments in digital marketing are mainly stimulated by the results being easily tracked and measured as opposed to traditional marketing (Hennig-Thurau, Malthouse, Friege, Gensler, Lobschat, Rangaswamy, & Skiera, 2010)

It has become very crucial for companies to adopt Web analytics. Indeed, nowadays, clients are progressively connecting with brands and businesses through different digital

mediums, and marketers have now understood that they have to track these interactions and evaluate their performance (Chaffey & Patron, 2012).

Many industries' discussion concerning the significant advantages of investing in digital technology is still ongoing. Different pieces of research revealed that investing in Information Systems is instantly connected to a company's effective performance and success (Weitz & Rosenthal, 2010). Nowadays, when speaking about a company's performance, it refers to its website's success. In fact, a few years ago and with the continuous development of business in the digital world, Fan and Tsai (2010) investigated the factors that determine a company's website success. Indeed, they identified digital marketing strategy as one of the major determinants of a company's success. Consequently, effective usage of Web analytics would be part of a successful marketing strategy that would lead to an overall positive and successful performance of organizations (David, Sudhahar, & Linijah, 2019). According to the Web Analytics Association (2008), Web analytics is defined as "the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimizing web usage" (p.3).

An aspect of digital marketing that has always been questioned is the role that data play within organizations (Bendle & Wang, 2016). These authors have tried to come up with an answer to how data can be revolutionized into insights that actually lead to a successful performance. The power and advantageous outcomes of data can be seen through correct use of data analytics. In fact, many digital marketing researchers such as Malthouse and Li (2017) assert that integrating data with digital analytics generates revolutionary opportunities for businesses. The power and value of digital analytics is well detailed in the limited available literature related to data and analytics (Germann, Lilien, & Rangaswamy, 2013).

Research Problem

Few studies have focused on a limited number of Web analytics topics within the business world. It is then not very unexpected that there is a lack of research addressing the role that Web analytics plays within organizations; notwithstanding the potential added value of Web analytics for businesses, in general. The goal of this research is to shed light on the perceived best practices of Web analytics which businesses can use for a better performance. To this end, a thorough and more comprehensive review of literature along with semi-structured interviews with five companies from different industries will be conducted.

This study primarily centers on the following research question:

- How are various industries and organizations using digital analytics data for key performance indicators of organizational success in relation to current best practices and the Diffusion of Innovation theory?

Chapter 2. Literature Review

Data and Web Analytics

Although companies are still trying to figure out advantageous ways to acquire value and keep pace in the marketplace, it is noted that recently developed technologies help generate more and better-quality data for different businesses. The answer to the business leaders' conflict about how to acquire this value is simple: the use of Web analytics. But what is Web Analytics?

According to Kumar, Singh, and Kaur (2012), Web analytics covers the techniques and methods of data gathering and analysis, measurement, and providing the corresponding feedback and reviews to better make sense of consumers' online behaviors. In another piece of research, Web analytics was defined as "the art and science of improving websites to increase their profitability by improving the customer's website experience" (Prasad, 2016, p.125). In this particular definition, analytics is specifically defined as science since it is a practice of gathering and studying numerical data and studying large databases for the generation of new and updated information, as well as it is a practice that makes use of numerical summary operations and reports, and statistics in general. Furthermore, analytics is defined as art, seeing that for a better performing website, a certain degree of creativity is required, along with original and innovative content, designs, and so on (Kumar et al., 2012). Other scholars refer to Web analytics as a technology-qualified procedure to make use of and control, to some extent, the consumer and the data he or she provides online as a motive of improving decision making (Lilien, 2001).

Within the past couple years, Web analytics has surfaced as one of the most crucial ventures and interests for businesses, as it enables them to monitor and trace their customers' online behaviors. The Web analytics approach relies on measuring a consumer's behavior - including both its drivers and conversions - while on a selected site. It is however very important to mention that applications of Web analytics can help businesses evaluate traditional advertising

and general marketing campaigns as well. The mentioned data is regularly juxtaposed to Key Performance Indicators (KPIs) and employed to enhance the public response for general digital marketing campaigns (Garcia, Nieto, & Montes, 2016).

The reputation and acceptance of Web analytics is expanding in the utilization of the data itself, as well as in businesses offering Web analytics tools that help measure the provided data. In fact, different Web analytic resources are lately frequently appearing on the internet. There exists, in the contemporary marketplace, a different set of implements that make it easier to use Web analytics. Tools that are extensively used not only for tracking and measuring web traffic, but also for analyzing the commercial activity to enhance the effectiveness of websites include all of Google Analytics, Clicky, StatCounter, and many more (MarketsAndMarkets, 2016).

In the same context, Web analytics is related to the data collection of the reciprocal actions between a particular system and its users. When implementing and using Web analytics to a system, or website, the business owning this latter can easily acquire detailed data about its users and all characteristics linked to them that led them to make or not make a purchase (Paukkeri, 2017). Web analytics make these interactions effortlessly captured, which clears the way for more feasibility for additional website advancements and better performance depending mostly on the "real user interactions" (Paukkeri, 2017).

"Do not measure anything unless the data helps you make a better decision or change your actions" (Godin, 2014, n.p). This quote is applicable in the frame of this research. Indeed, when taking account of Web analytics, the objective is to gather data that will help companies make more valuable and beneficial decisions, not to forget that the Web analytics' scope and what a company should exactly measure is exceptionally dependent on what they aim to achieve with their digital marketing strategies. To put it differently, taking as an example an e-commerce

website versus a press or news website, what to evaluate using Web analytics might vary between the two sites.

In this thesis, Web analytics refers to the data collection procedure as regards to both website traffic, such as social links or search engines, and visitors' behavior while on the site. It sets forth the data in a relevant and valid format, which is "used to understand online customers and their behaviors, design actions influential to them, and ultimately foster behaviors that are beneficial to the business and achieve the organization's goal" (Nakatani & Chuang, 2011, p.172).

KPIs and Metrics

In different literatures, various pieces of research study several aspects of customers reactions and behaviors when it comes to specific digital marketing campaigns. Nevertheless, research that focuses on studying the organizational outlook of companies' performance when it comes to their digital marketing strategies and Web analytics are very rather restricted. Accordingly, for a successful and effectual use of data performance, it would be very imperative to understand all best practices and measurement approaches of Web analytics (Lenskold, 2002; O'Sullivan & Abela, 2007).

Undeniably, more businesses are today stating to adopt and take on several digital marketing practices in order to get in touch, and more importantly, influence their customers. Nonetheless, many would still be unsuccessful at acquiring benefits and value as they fail to use the proper and valid tools and strategies which would guide them into better decision making and thus successful organizational performance.

Some organizations have today made good sense of the significance of performance evaluation and tracking and following their interactions with customers through different digital

mediums, which seems to increase over time (Chaffey & Patron, 2012). When it comes to understanding the value and significance of their strategies, businesses should make sure they hold and control their capabilities for monitoring and evaluating the impact of these strategies. To this end, relevant, proper, and convenient standards of measurement - or in other words KPIs and metrics - are necessary for evaluation and analysis (Yang, Shi, & Wang, 2015).

It is much easier today to gather data and evaluate the performance of an organization's digital strategy. Choosing the right key performance indicators and metrics to track is still one of the main challenges that marketers face. According to Nair and Shobana (2018), "by choosing appropriate KPIs, the marketer can gauge contribution, return on investment and effectiveness of each campaign and channel, get insights for optimizing the campaigns, identify the trends that enable consumer behavior predictions, identify opportunities for effective segmentation and targeting and optimize the business processes" (p.90). After all, there is not a specific KPI that would accord with all purposes. In fact, while particular campaigns might aim at improving awareness, others might focus on lead generation, for example.

Consistent and reliable evaluation of a company's performance allows the business to better interpret the needs of their customers and attain an advantageous engagement stage with them. It also enables companies to focus more on actions that would guide them towards an increasing return on investment, rather than activities generating poor outcomes (Nair & Shobana, 2018). Hence, using Web analytics for performance measurement will lead to positive affirmative and useful performance results.

There is no doubt that using digital tools, such as Web analytics tools, help in making decisions about improving the audience's trust and commitment, which by that means boost customer relationships (Chen & Bai, 2015). Using these tools requires choosing the right KPIs

and metrics for accurate insights. Doing so necessitates an initial description of these measures that are used in Web analytics for the motive of optimizing and improving a company's performance.

KPIs and performance metrics are measures that marketers need to apply to evaluate their company's performance in terms of marketing efforts (e.g. marketing campaigns, website performance, etc.). Hence, it is useful and important to distinguish between KPIs and performance metrics.

Chaffey and Patron (2012) define KPIs as "an important category of measure as they show the overall performance of a process and its sub-processes" (p.38). As for performance metrics, they are "performance drivers that are typically more granular measures that are used to evaluate and improve the efficiency and effectiveness of marketing activities" (Chaffey & Patron, 2012, p.38,39).

Other authors state that KPIs are related to the company's goals and objectives and are used to assess the company's capabilities and success, while metrics are single variables within KPIs that help track the company's success and performance (Neiger et al., 2012).

Accordingly, when it comes to measurement, marketers tend to do their assessment in volumes, not taking into consideration that in order to achieve a successful performance, qualitative metrics and KPIs are what need to be measured (Cronin, Brady, & Hult, 2000).

Prior to deciding which KPIs and metrics to use, it is very important to remember that they should be identified based on the company's goals and objectives. From organizations that sell Web analytics services, Nair and Shobana (2018) have investigated the use of KPIs and metrics. A few examples that they put forward for Web analytics measurement and analysis, depending on a company's objectives, are represented in the following Table 1:

Table 1.

Important Web analytics KPIs and Metrics (adapted from Nair & Shobana, 2018)

KPIs and Metrics	**Objective**
Rate on Returning Visitors metric (RVR) RVR= (Total number of returning visitors for given period of time) / (Total number of unique visitors to the website for given period of time)	To measure the effectiveness of the website in building an audience
Web Traffic Sources Number of visitors for each source	To measure which traffic sources are driving visitors to the website
Funnel Conversion rate Funnel Conversion Rate = (Number of leads moved to the next stage in the funnel) / (Total Leads in the funnel stage)*100	To measure the rate of which the leads move through the marketing funnel
Total Visits Total number of unique viewers on a page	To measure the number of users that have visited the site or page
Customer Attrition Customer Attrition = (customer lost in a given time) / (Total number of customers)*100	To measure the rate at which the company loses customers over time
Customer Lifetime Value Customer Lifetime value = Gross margin*(%)* * length of lifetime in pay periods* revenue per subscriber per pay period	To measure the amount of gross profit that is generated from a customer over the entire times of business
Customer Acquisition Cost Customer Acquisition Cost = (total marketing spend on customer acquisition) / (Total new customers)	To measure the total amount of capital costs to gain a new customer
Page Views Per Session Page Views Per Session = (page views per session with user A + page views per session with user B +…+ pageviews per session with user N) / (Total number of user session)	To measure the average number of pages a user views during a single session
New Leads Generated Total leads generated during reporting period	To measure the number of new leads during specific period
Goal Completion Rate Goal Completion Rate = (Number of visits)/ (Number of leads and Number of leads per channel) / (Number of wins)	To measure how effectively the campaigns, make the audience complete their goal

Barriers to Effective Use of Web Analytics

In the following section, we discuss important impediments that prevent putting digital analytics in practice, as well as some possible solutions for clearing up these impediments. As a matter of fact, Chaffey and Patron (2012) have touched upon the fact that considering the degree to which Web analytics tools are adopted, several core Web analytics techniques are actually not used as extensively as it might have been anticipated. So, what are the barriers that might be hindering this?

Research suggests that some of the most notable impediments include "the lack of resources" and "limited budgets" (Chaffey & Patron, 2012). Also, some of the barriers are related to how Web analytics is controlled and supervised, "since company culture, conflict of interest between departments, and a siloed organization" can highly prevent the successful implementation of Web analytics (Chaffney & Patron, 2012).

Furthermore, a survey conducted by the Digital Analytics Association (2014) also suggests insights on the barriers of using Web analytics. The participants have evaluated the main challenges to be the following:

- Actionable Data (35%)
- Lack of standards (30%)
- Perceived value of Web analytics (29%)
- Data Accuracy (26%)
- Lack of process in Web analytics (26%)
- Lack of qualified staff (21%) (Digital Analytics Association, 2014)

It is possible that not many marketers possess the skills to measure and evaluate the huge amount of collected data. Some of them use simple tools to track their numbers, such as Google

Analytics, but do not necessarily get beneath the data to get a sense of why these numbers have dropped or increased which is very essential for decision making. Professionals that best demonstrate the value of Web analytics are the ones that are able to prove successful and guaranteed long-term increased performance of the company through analytics. The effectiveness of using Web analytics highly depends on the outcomes of the decisions made through analytics insights (Rich & Wilson, 2010).

There is also additional literature that suggests that people and process are two other crucial impediments to consider for Web analytics implementation (Gibbins, Lee, & Patron, 2012). Intelligibly, the industry is not recruiting enough skilled and expert people, and this seems to be caused by the fact that organizations are putting their financial resources on tools and media that they do not necessarily use, rather than investing adequately in their staff to become expert analysts (Chaffey & Patron, 2012). Moreover, Hamel (2009) refers to the importance of the need for both a constant process that is improving in the long term, as well as a valid methodology for analysis. Fundamentally, "companies should review their structure and their investment in Web analytics and digital marketing optimization to make sure opportunities are not falling through the cracks" (Chaffey & Patron, 2012, p.44).

Digital Analytics Trends

There is no doubt that the sphere of analytics has notably advanced over the past couple of years, enabling companies to acquire better insights and make better decision. It is very important, however, to remember that in order to provide evaluative insights, the database created through Web analytics involves not only human efforts, but also automated analysis processes. Indeed, with massive amounts of data generated day-to-day and assembled into

accounts with several elements, there is certainly a demand for automated analysis processes in order to track down the structure in the mentioned database (Kimball & Merz, 2000).

Within an organization, digital analytics is performed by different business users. Business users are people within an organization whose responsibility does not necessarily include Web analytics per-se, yet who regularly have to be involved in analytics to enhance the outcomes of other business operations within the company. Unfortunately, these business users impose many challenges for the improvement of a company's performance. While experts in their field of specialization, they are doubtfully experts in data analysis.

According to Kohavi, Rothleder, and Simoudis (2012), some of these challenges include the following:

- The time and analytic expertise necessary to analyze data
- Identification of clear business goals and metrics
- Identification of clear goals for data collection efforts
- Increased time to perform the overall cycle of collecting, analyzing, and acting on enterprise data
- Lack of data integration from multiple sources" (Kohavi et al., 2012)

Approaches to the challenges mentioned above are incorporated in the trends of digital analytics. These trends include the use of clear and accessible models. In fact, with the necessity for quick insights and data analysis, and with the objective of decreasing the need for data experts and using business users instead, comprehensible and simple models are used as an organization's business users prefer not to handle and cope with complicated data and advanced quantitative concepts (Kohavi et al., 2012). Most of the digital analytics trends comprise the types of technologies and systems used in the overall process and are used to "bridge the gap

between the needs of the business user and the accessibility and usability of analytics tools" (Souza, Manning, & Gardiner, 2001, p.6).

The emergence of new technologies and digital tools in the space of Web analytics gives rise to trends that particularly enhance the analysis and interpretation of data and decision making, offering notably more value from the business perspective. Correspondingly, we mention the integration of new technology techniques such as the increasing use of mobile technology (Durcevic, 2019). Indeed, according to Durcevic (2019), the integration of mobile into overall business intelligence is an ongoing trend that will undoubtedly stay crucial when it comes to analytics.

The automated analysis processes mentioned in the paragraph above along with the use of page tagging, cookies, and all web privacy tools are also part of this new technology integration in the web space. In the same perspective, Sigma (2020) brings focus into data privacy as being one of the most important data trends as its laws are generating a framework of overlaying irreconcilable regulations. Joe Christopher (2020) in its turn pinpoints to how this trend will continue to be a top priority in 2020.

Augmented analytics is another data analytics trend that has taken place in recent years and that will be even more prioritized in the upcoming years (Christopher, 2020). Learning automation machines and other data protocols are definitely changing the way data is collected, shared, and analyzed. As a matter of fact, augmented analytics has "the potential to transform the entire industry" (Sigma, 2020). Davis (2019) also states that it all comes down to making analytics accessible to everyone. The goal is to generate insights in very little time with human skills applied to the lesser degree possible (Davis, 2019).

Finally, the development of web analytics tools mentioned by Sharapa and Diachuk (2020) is a trend. With the increasing number of these tools, augmented analytics can be easily applied, and web analytics can be effortlessly adopted and implemented (Sharapa & Diachuk, 2020).

Chapter 3. Theory - Diffusion of Innovation

Web analytics is considered a technological innovation enabling companies to better perform in the business world. It is then noted that the Diffusion of Innovation theory will be used for shaping the approaches used in this thesis, for researching the best practices of Web analytics for an organization's successful performance, conforming with the research model and methodology adopted in this study. The Diffusion of Innovation theory will be applied as a theoretical foundation to point out and evaluate the degree of employing the best practices of Web analytics within organizations of different industries.

In fact, the lengthy and usually unanticipated adoption of technology innovations, such as Web analytics, has guided researchers to seek the explanation and projection of its diffusion (Attewell 1992). According to Rogers (1995), "the theory of diffusion of innovation is a useful systematic framework to describe either adoption or non-adoption of new technology" (p.198). Rong and Mei (2013) have defined the Diffusion of Innovation theory as being "concerned with the adoption and spread of new products, techniques, algorithms, and ideas via certain communication channels among individuals" (p.2). In more simple terms, Diffusion of Innovation applies to the process that takes place as a system of users adopt a new technology.

The mentioned diffusion occurs particularly when details and knowledge about the new adopted technology are available to prospective users. In this context, Rogers (1995) has identified five levels for technology adoption. The first stage is knowledge, followed by persuasion, decision, implementation, and confirmation (MacVaugh & Schiavone, 2010). Nevertheless, Rogers contend that there might be barriers that could impede the effectiveness of the process of adoption. Hence, the non-adoption of the new technology is an outcome of a failed adoption process (MacVaugh & Schiavone, 2010).

In addition, five groups of technology adopters have been identified by Rogers (1995). These groups were illustrated in a curve presented below, for which Rogers (1995) had evaluated specific percentages as shown in the following Figure 1:

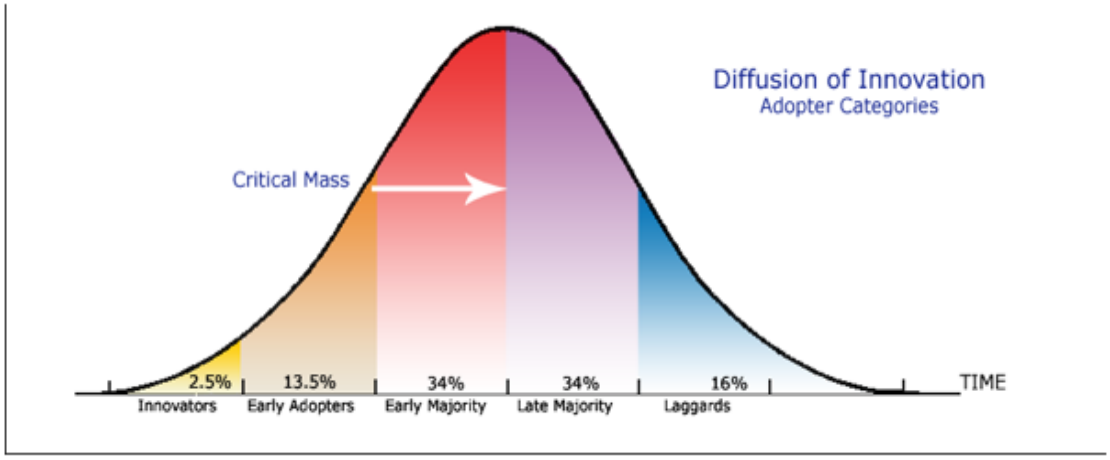

Figure 1. Model representing the Diffusion of Innovation theory (adapted from Rogers, 1995)

In the context of digital marketing, Web analytics is a technique - new technology - that is adopted by different organizations for the motive of acquiring useful insights that will help companies improve their overall performance. Fitzgerald (1997) noted that notwithstanding the big amounts of money invested in digital approaches and tools, these innovations are unfortunately not necessarily made use of. Other studies conducted in the field of innovation have also revealed that not complying with specific organizational, technological, and behavioral factors impede the proper adoption and implementation of such innovation by organizations, which leads to poor capabilities and overall performance (Prescott & Conger, 1995). As a matter of fact, due to the absence of more empirical research in this field, several professionals and academic scholars do not know much about the different characteristics they should consider when adopting a new technology, or innovation. Consequently, not succeeding in identifying these characteristics leads to unsuccessful processes and missed investments.

The questions remain: When and how do companies decide on applying Web analytics? What is their process of implementing this technology? Does this technology confirm the business goals that companies want to achieve? We select the Diffusion of Innovation theory as a hypothetical basis in order to spot and analyze Web analytics characteristics that positively impact organizations in terms of performance. Using the Diffusion of Innovation theory to rejoin these questions, we will be able to shape the approaches used in this study and put into words how Web analytics can be adopted for a company's successful performance.

The following is a figure (Figure 1) representing a preliminary research model adopted from literature for this study:

Preliminary Research Model

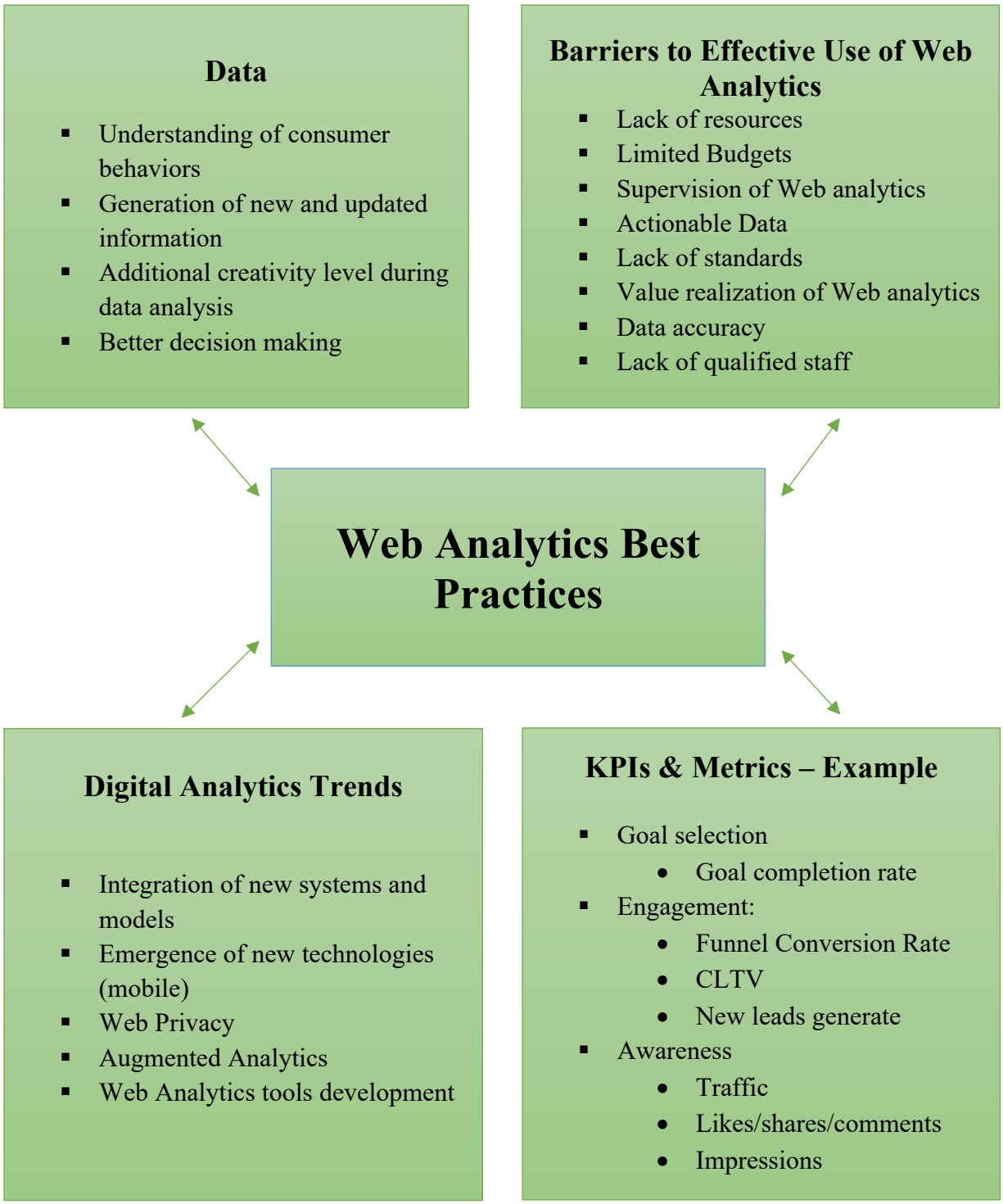

Figure 2. Hypothetical Model representing the Best Practices of Web Analytics

Chapter 4. Research Methodology

It is noted that there have not been many previous investigations into the adoption of Web analytics within organizations in different industries. That being the case, the following research aims at investigating the best practices of Web analytics within organizations for a successful performance. This will eventually add to the understanding of web analysts and organizations overall, in terms of being aware of the barriers they should likely avoid or improve for a successful e-commerce implementation.

Research Approach

The following section focuses on the elaboration of the methodology chosen to conduct the study and answer the research question. Particularly, I will be justifying and elaborating on the selection of the research approach selected. The research design I am following in this research is inspired by the eight stages of theory building by Eisenhardt (1989), which is performed using case study research methodology (Eisenhardt, 1898). As already mentioned earlier, there haven't been many investigations into the adoption of Web analytics and its best practices used by companies within different industries, which leads to lack of theories within the area of digital Web analytics. Thus, through this project and according to the findings that will be discussed along the research, a theory will be initiated including helpful propositions in this area.

"There are generally three types of research: quantitative, qualitative, and mixed methods approach" (Denscombe, 2014). In my research, I will be adopting the qualitative research method, more specifically the case study approach. In fact, the qualitative research method is referred to by Shank (2002) as "a form of systematic empirical inquiry into meaning" (Shank 2002, p.5). In other words, in this form of inquiry "researchers try to understand how others

make sense of their experience" (Parry, Mumford, Bower, & Watts, 2014, p.3). According to Hiatt (1986), this method of research focuses mostly on looking into the beliefs and perceptions of writers. To put it differently, "qualitative research aims at exploring the meaning and purpose of reality" (Hiatt, 1986, p.3). "Qualitative research is usually described as allowing a detailed exploration of a topic of interest in which information is collected by a researcher through case studies, ethnographic work, interviews, and so on" (Conrad, Serlin, & Harwell, 2014, p.148).

Denscombe (2014) in his turn suggests that the qualitative research method is crucial when researchers would like to unscramble the different experiences studied into word and not numerical statistics (Denscombe, 2014). Some of the advantages of doing qualitative research include the flexibility to follow unanticipated ideas throughout research; the ability to look into representative dimensions, as well as the increased chances of developing empirically supported new ideas and theories (Conger, 1998). It is however very important to remember that the qualitative research has many drawbacks. In fact, the process of research using qualitative methods could be time-consuming, the interpretations of researchers are limited, and the method requires a more intensive analysis process like categorization or recoding for instance (Choy, 2014).

Case Study Approach

The case study research approach helps with the exploration and understanding of more complicated issues, and is considered as a powerful research method, especially when a thorough study is required (Zainal, 2007). "The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or a set of decisions: why they were taken, how they were implemented, and with what result" (Schramm, 1971, p.6).

According to Yin (2006), “the case study inquiry coped with the technically distinctive situation in which there will be many more variables of interest than data points” (p. 203). To put it differently, in the context of the case study approach, the structure needs to be logical, and data collection and analysis need to be included. Incontrovertibly, case studies could be used for several objectives including the description of a specific phenomenon, testing of a specific theory, or giving rise to a theory. Also, Benbasat, Goldstein, and Mead (1987) have pointed out to the appropriacy of using case studies when the matter in question is related to research in technology or information systems (Benbasat, Goldstein, & Mead, 1987).

In general, a case study’s design could be focused on both a single case study as well as numerous case studies. Deciding on which research design to use is reflected on as the main and most important decision to take before any data collection. According to Yin (2006), a single case study design could be used when the case in question is considered as a significant and critical one when piloting an already existing theory. The multiple case studies nevertheless are implemented when the researcher intend to evaluate causal relationships or explore hypotheses.

In the present research, a multiple case studies strategy will be complied with; as the investigation in question of different organizations that are from different sectors will eagerly help adding to the understanding of using Web analytics for the success of companies. The research strategy that was followed and that represented the guideline dealt with in this thesis was inspired from Eisenhardt’s (1989) process of building theory.

This approach was actually substantiated and supported by many recent pieces of research including Andriopoulos and Lewis, (2009), Mair and Marti, (2009), and Shepherd and Suddaby, (2017). There are many research designs for the case study type of research, and among them is the framework represented in Table 2, developed by Eisenhardt (1989), which is

composed of eight defined steps to follow for theory building. In point of fact, this structure puts into words the detailed approach of theory induction using case study research starting by identifying the research question and ending the process by reaching closure where there is a narrow marginal improvement (Eisenhardt, 1989).

Table 2.

Eisenhardt 1989 theory Building Process (adapted from Eisenhardt, 1989)

Step	Activity	Reason
Getting started	Definition of research question Possibly a priori constructs Neither Theory nor hypotheses	Focuses Efforts Provides better grounding of construct Retains theoretical flexibility
Selecting Cases	Specified population Theoretical, not random, sampling	Constrains variation Focuses efforts on theoretically useful cases
Crafting Instruments and Protocols	Multiple Data collection methods Qualitative and quantitative data combined Multiple investigators	Strengthens grounding of theory Synergetic view of evidence Fosters perspectives
Entering the Field	Overlap Data collection and analysis, including field notes Flexible and opportunistic data collection methods	Speeds analysis and reveals adjustments to data collection Allows investigators to exploit emergent themes
Analyzing Data	Within-case analysis Cross-case pattern search using divergent techniques	Preliminary theory Forces investigators to look beyond initial impressions
Shaping Hypotheses	Iterative tabulation of evidence for each construct	Sharpens construct definition, validity, and measurability
Enfolding Literature	Comparison with conflicting literature Comparison with similar literature	Builds internal validity, raises theoretical level Improves construct definition
Reaching Closure	Theoretical saturation when possible	Ends process when improvement is small

Getting Started

This first stage of theory building from the case study research highlights on a first identification of the research question investigated. In fact, researchers need to always have a well-defined focus in their research, which will eventually assist them in following a systematic collection of data. At last, having a research focus will make researchers steer clear of being overwhelmed by a large amount of data (Eisenhardt, 1989). "A priori specification of constructs can also help to shape the initial design of theory-building research" (Eisenhardt, 1989, p.536). This step is actually very invaluable as regards to allowing researchers to frame and measure the different constructs more precisely.

For this present thesis, the research question that had led the project was put forward after having introduced the topic to be studied. As mentioned in the literature review, Web analytics play a crucial role within companies' business operations and performance. Yet, there has not been many studies nor much research explaining how the technology of Web analytics is adopted in such a way that leads to performance organizational success. The research question was then identified as follows:

- How are various industries and organizations using digital analytics data for key performance indicators of organizational success in relation to current best practices and the theory of diffusion of innovation?

Selecting Cases

Selecting cases is considered a very crucial element of theory building. The notion of population is particularly important since it describes the selection of entities from which the desired sample to be studied is to be selected (Eisenhardt, 1989). "Selection of an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings" (Eisenhardt, 1989, p.537).

This research focused on a multiple case study approach. The selected case studies for this project included a company that belongs to the Healthcare sector, The Smithee Group, 33 Sticks, Cox Media Group, and Eastman Chemical Company. The main criteria for selecting the mentioned companies are the adoption of Web analytics within the organization, as well as the fact that they were a convenient sample of companies who are supportive of the department of Media and Communication at East Tennessee State University, where I am currently pursuing my master's degree.

The first chosen case is a for-profit company in the healthcare industry operating healthcare facilities. Throughout this research and due to confidentiality reasons, this company will be referred to as "Company H", and the person interviewed will be referred to as "H's Analytics Manager". Company H manages more than 180 hospitals and more than 100 surgery centers.

A second company chosen is 33 Sticks. This company was founded by Jason Thompson, and is an analytics organization offering high end solutions to businesses looking to leverage consumer analytics as a competitive advantage. Their services include consumer analysis, optimization strategy, and architecture and design.

As for the third case mentioned in this study, Cox Automotive is a business unit part of Cox enterprises. The company was formed in 2014 consolidating Cox's global automotive

businesses. Cox Automotive is considered as the world's leader in vehicle remarketing services and digital marketing and software solutions for automotive dealers and consumers.

The Smithee Group is the fourth company to be included as a case study for this research. It is a consulting company helping different businesses, from different industries be successful in today's digital age. The Smithee Group's services for their clients include analysis, brand architecture, content creation, and daily overall management.

Finally, Eastman Chemical Company is the fifth organization used for this research and is a company involved in the chemical industry, which produces a broad range of advanced materials, chemical, and fibers for everyday purposes.

Crafting Instruments

Researchers that are interested in theory building would normally use integrated methods of Data collection. "While interviews, observations, and archival sources are particularly common, inductive researchers are not confined to these choices" (Eisenhardt, 1989, p.537). Indeed, some researchers would only use one or two of these methods, while others could employ what is called "triangulation", which is brought to completion through several data collection methods. For this research project, the method that was used to collect data is semi-structured interviews. The interviews were conducted with people that were part of the selected company's analytics team, more particularly analytics experts. The reason behind choosing these participants specifically is the fact that these people are the leaders, and most importantly the decision makers when it comes to Web analytics within their company.

When it comes to the interview questions, they were divided into three sections. The first section deals with the organization's characteristics and the responsibilities of the participants within the company. The second section is all about knowing how the company perceives Web

analytics and how it is used in terms of measuring the company's performance. Finally, the last part is about Web analytics trends and what our participants think analysts should be aware of using Web analytics in the future.

The following Table 3 describes the interviews' process settings.

Table 3.

Interview Process Settings

Company	Interviewee	Interviewee's Job Position	Interview Medium
Company H	H's Analytics Manager	Analytics Manager	Zoom Web Conferencing
33 Sticks	Jason Thompson	Founder and CEO	Zoom Web Conferencing
Cox Automotive	KJ Zhang	Analytics Manager	Zoom Web Conferencing
The Smithee Group	Cody Giles	Director of Advertising Strategy	Zoom Web Conferencing
Eastman Chemical Company	Emily Whitehead	Digital Marketing Representative	Email

A sample of the interview guide is shown in APPENDIX.

Entering the Field

In the course of the theoretical stage of this study, I interviewed the participants using Zoom Web conferencing, except for Eastman Chemical Company whose representative preferred to answer the interview questions through email. I interviewed the analytics managers of three companies (Company H, Cox Automotive, and Eastman Chemical Company), a founder and CEO (33 Sticks), and an Advertising strategist (The Smithee Group). They first agreed to all parts of the consent I had sent to them previously for conducting the interview for data collection. Afterwards, the participants briefed me about their career background explaining how they got into the field of Digital Marketing, as well as their role and responsibilities at the company they currently work at. We, then, carried on talking through Web analytics and how businesses can use this technology in such way that would help improve their overall performance. Also, with the selected companies as cases, we discussed the adoption and implementation of Web analytics within their respective companies or for their clients - for businesses such as 33 Sticks, who offer Web analytics services for companies in different types of industries -.

When in the field, I video recorded the interview sessions through Zoom Web conferencing and made sure transcripts for these sessions were processed in order to make the process of data analysis easier. I have also made my best to take notes throughout the interview process tried to take notes putting down any piece of information I thought I shouldn't fail to mention in my analysis, as it happens, according to Eisenhardt (1989) "field notes are an important mean of accomplishing successful interviews as well as the overlap of data analysis with data collection" (p. 538).

Analyzing Data

According to Eisenhardt (1989), "data analysis is the core and essence of case study theory building" (p. 547). For this research project, the data analysis process was conducted based on a search for Cross-Case patterns, an analysis process that was initiated by Eisenhardt (1989). More specifically, the tactic to be used in this method is one where pairs of cases were selected and then compared based on their results' similarities and differences. This kind of tactics is actually quite interesting as it leads to more advanced understanding. Also, the results of such tactic could form new conceptions and categories that the researcher had not initially expected (Eisenhardt, 1989).

The idea behind approaches such as the cross-case searching is basically to push researchers to go past their inceptive impressions, which most likely enhances the possibility of more reliable and factual theories (Eisenhardt, 1989). "Also, cross-case searching tactics enhance the probability that the investigators will capture the novel findings which may exist in the data" (Eisenhardt, 1989, p.541).

Shaping Hypotheses

After identifying the right approach of data analysis to use, the next move of this process is to structurally juxtapose the originating set of data with the facts and views from each case as for evaluating how fittingly or imperfectly it correlates with case data (Eisenhardt, 1989). The idea here is to continuously contrast the available data and theory, iterating to a theory that would eventually be congruent with the data (Eisenhardt, 1989). Here comes the need to fine-tune the constructs, more specifically pointing out the best practices of Web analytics in accordance with the studied cases. In fact, sharpening these constructs is a two-part process that incorporates "refining the definition of the construct and building evidence which measures the

construct in each case" (Eisenhardt, 1989, p.541). This comes about by way of continuous comparison of constructs and data so that gathered evidence from various references bears down on a sole well-defined theory. It is however very important to mention that for this particular study, the level of building a theory was not specifically reached. Instead, a model was developed based on the data gathered and the already existing literature. This model can later be developed into a theory as per entirely fulfilling Eisenhardt's (1989) theory building requirements.

Enfolding Literature

A crucial attribute of theory building is the juxtaposition of "the emergent theory with the already existing literature; this involves asking what is similar to, what does it contradict, and why. A key to this process is to consider a broad range of literature" (Eisenhardt, 1989, p. 544). Indeed, a large extant of literature review regarding the practices of Web analytics among different organizations was scrutinized in order to examine the emerging theory of this current research. It is also very important to remember that linking literature review to research is exceptionally very important in building theories from case study research since the findings are most of the time based on a very finite number of cases (Eisenhardt, 1989).

Conflicting literature was certainly present, yet, only the one that close fitted the findings was made use of in order to join and connect the best practices of Web analytics with the selected cases.

Reaching Closure

"Two issues are important in reaching closure: when to stop adding cases, and when to stop iterating between theory and data" (Eisenhardt, 1989, p. 545). Indeed, this step of Eisenhardt's approach of building theory was pointed out in this research project with regard to

the selected cases. Nevertheless, the number of cases to be studied was planned in advance, as the resources were easily accessible and available. Indeed, “while there is no ideal number of cases, a number between 4 and 10 cases usually works well” (Eisenhardt, 1989, p. 545).

Five cases were selected from different industries and sectors in order to be able to generate a theory with a convincing empirical grounding. The reason behind stopping at five companies is the fact that the content of the interview conducted with the last company was almost the same as the ones of the previous companies. Moreover, the second closure issue mentioned in the quote above was complied with as iteration between theory and data was ended since the progressive development of theory was becoming minimal.

Chapter 5. Findings

Company H

The companies taking part in the present research are all from different industries, and each one has a different role as it comes to Web analytics. For the first case, and as mentioned above, I interviewed a marketing Analytics Manager at a company that belonged to the healthcare industry. H's Analytics Manager and her team are responsible for the Web analytics implementation of all of the company's digital properties including its various websites, patient portals, and all other native applications that Company H owns. When H's Analytics Manager had first gotten into the field of digital marketing, she realized that one could not be successful doing digital marketing unless he or she understood the analytics. She adds: *"*It is not just a matter of understanding. It is really ensuring that the implementation is solid and sound so that you can trust the data, which is really what it is all about*"* (H's Analytics Manager, Personal Interview, 2019)

Indeed, according to Company H, data is considered one of their biggest assets and incredibly valuable resource. When asked about her own definition of Web analytics, H's Analytics Manager states:

> "Web analytics is really the analysis of traffic to digital properties... and so this is everything from how long a user spends on a page to the interactions they take, and it is really a combination of all of their interactions and then it really can expand to be so much more than that, as you get to understand your customer base better through a CRM tool." (H's Analytics Manager, Personal Interview, 2019)

Within Company H, the analytics team is the one that has access to Web analytics, in addition to the marketing team who is also allowed to access it. However, H's Analytics

Manager and her team try to minimize access to the most minimal viable access point. Explaining more in her own words, she says:

> *"* .. because Company H is so large, we have websites with over 1000 hospitals, and most of those are for hospitals or physician practice offices that are all across the nation and even a couple in the UK… and that means that we probably have a website for each individual hospital or each individual physicians service practice, so we have marketers that are specific to hospitals, but then we have division level marketers too... so we try to make sure that we give the appropriate level of access for each of those users, but it is very limited and we audit very frequently to ensure, first of all, that everyone who has access is still an active employee, but also that they have the appropriate level of access and actually we have found few cases where there was access that needed to shift…" (H's Analytics Manager, Personal Interview, 2019)

In H's Analytics Manager's perspective, making the best use of Web analytics is rather a case by case basis. For example, at Company H, the analytics team run a number of different analysis, in which they may be looking at data that would analyze the marketing impact. In such case, their goal would be to help their users get to their goal as quickly and efficiently as possible. H's Analytics Manager gives few examples about Company H; she says:

> "… It's an interesting question for healthcare, but for example, we have an online appointment scheduler tool, and so we want to ensure that that tool is functional and efficient, and always available, so for this there is an analysis of that entire funnel and we spend a lot of time looking at that.. but then there's analysis of how users get to that because not all of our traffic coming to our website is interested in booking an appointment

online… so, I think how a person best uses analytics really depends on who is asking the question." (H's Analytics Manager, Personal Interview, 2019)

When asked about the challenges faced when using Web analytics, H's Analytics Manager mentions that "Data Quality" is the biggest challenge faced by Company H. In fact, although the company has lots of control over the implementation of the analytics tool, they use tools such as Google Tag Manager and Google Analytics, their data can be at risk if anything within the system changes. For this reason, Company H is always looking to audit their implementation and their data against other back end systems. Another challenge mentioned by H's Analytics Manager is the trust in the data across the organization, or in other words the fact that her team can get siloed within their organization. To put it differently, some of the data within the company can get updated without notifying the analytics team, which then leads them to not understanding where some of the data might have disappeared. H's Analytics Manager says: "…so that trust in the data across the organization, understanding that things happen to the data, and being comfortable with uncertainty are all things that we kind of face on a daily basis." (H's Analytics Manager, Personal Interview, 2019)

H's Analytics Manager adds to that by stating barriers impeding the good implementation of Web analytics:

" having the tracking the data is a huge barrier on having folks that are savvy enough to understand the data and then having resources, whose role is to dig into it and then teams that are cross functional to siloed teams and can also make it very difficult to tell stories" (H's Analytics Manager, Personal Interview, 2019)

Moving on to the use of specific metrics and KPIs in Company H's analytics operations, H's Analytics Manager mentions that the metrics and KPIs her team uses depends on a case by

case basis and what they are trying to understand. Oftentimes, some analysts would have the expectation of measuring everything. However, this could be very overwhelming and not particularly useful. Therefore, H's Analytics Manager always encourages her team and stakeholders within Company H to identify the KPIs they will be using up front as they are defining their projects and tasks, so that they are focused on those limited number of KPIs and indicators that will help them understand their performance and success. She adds:

> "…but it's a cultural shift to really push people to define KPI in advance because people are very interested in defining project and product… but understanding what success looks like is... it can be very nebulous, especially when you are piloting new solution… I personally definitely feel like less is more… but I am also open to over capturing metrics to make sure that we have enough data to fully analyze performance… so really pushing on those KPIs out front and minimizing what those KPIs are, and then having other data to help really tell the story about performance… because if you are only about those KPIs, and it's showing a poor performance, that does not give you enough information to tell a story behind it, right! So, you need more than those core KPIs in order to have a good story…" (H's Analytics Manager, Personal Interview, 2019)

At Company H, the analytics team use specific metrics and KPIs depending on what they are looking for. From a marketing perspective, the analysts are interested in the aspect of "reach". For instance, if they are going to sell a patient an appointment with a doctor, their goal would be to reach to that customer and try to build a relationship. Another aspect the analytics team are looking for and looking to measure is customer loyalty and engagement. For instance, the organization is trying to understand how they can make a patient loyal to a specific physician and engage with the company.

H's Analytics Manager goes on to add that although Company H is not specifically reporting on brand awareness for instance, because they have a couple of vendors that help them out with that, it is still part of their analytics work, and so they do look at how to get users to their site and at what stage are they converting. For that, they have a number of different conversion points related directly to the site, and a major KPI for them to keep an eye on is conversion rates. Indeed, conversion rates help them a lot from an online appointment scheduling perspective, for example. H's Analytics Manager adds:

> "…but then are we also building loyalty in getting folks into our patient portals and getting users just to understand that we are a good resource. So, we have recently revised some of our online tools that allow us to help improve how consumers are able to search for disease and illness on our website. So that's certainly a measurement of engagement. So even just reading and article sometimes can be an indication of loyalty, I suppose…" (H's Analytics Manager, A, Personal Interview, 2019)

The analytics team at Company H is, however not always satisfied with metrics and KPIs measurements, as sometimes some metrics might underperform, which then makes a campaign unsuccessful. Yet, H's Analytics Manager claims that that does not specifically mean that the metrics used are bad, but that the analyst will have to dig deeper within the company's data to understand what it might be that made the campaign come to almost nothing, and this is where, according to H's Analytics Manager, collaboration is very important. She continues by saying:

> "…because I can look at the metrics in one way and make an assumption about what's going on, but until I fully understand what else might be happening within the organization or what other impact to a tool might be there…I mean, for example, we may have something entirely unrelated that may be impacting why users are not engaging

with us… I guess there are things that are not just specific marketing related but that are external impact to what might be happening, that would explain why something's increasing or decreasing… and so it's important to really step back and understand that and get other perspectives and points of view on any of our analysis before you take it up to a stakeholder or business owner at a higher level, we make sure that we will be circulated internally to ensure that we do not miss anything…" (H's Analytics Manager, Personal Interview, 2019)

According to H's Analytics Manager, Web analytics might change in the future in the sense that there will be even more privacy laws that will be changing the game for Web analytics. Web analytics will definitely remain important and valuable; however, it is people's ability to really understand users that's probably going to change. As per H's Analytics Manager:

"…there's lots of privacy laws that are coming out that are really changing the game, and so right now, no one has a really strong solution yet for that... so what it sounds like to me is that our best bet for understanding user behavior is getting users to self-identify on our website… although these laws will change our ability to gather data on all of our users. We are going to happen to tell a more compelling story to get users to trust us, and willingly give us their data." (H's Analytics Manager, Personal Interview, 2019)

33 Sticks

Jason Thompson from 33 Sticks is the second participant interviewed for this research. Thompson is the founder and CEO of 33 Sticks, an analytics services company. His job entails overseeing his team and making sure that they are aligning with the company's vision, which is to help companies make use of analytics data from an insight's perspective, and an optimization, and personalization's perspectives.

Thompson strongly believes in the fact that specific industries can learn from other industries, and this is why 33 Sticks do not specialize in a specific industry, but their clients come from several different industries. Thompson states:

> "…we do not specialize in this specific industry, just because I think that industries can learn so much from other industries, you see so many best practices as far as , you know, trying to make everything industry specific, and this was a trend probably five or eight years ago in the Web analytics space, and a lot of vendors came up with kind of playbooks and best practices of, for example, if you are in automotive, this is how you do analytics, and I think to a degree, that is helpful, but I think you miss out on so many learnings that I can learn as a hospitability company from a retail company…"
>
> (Thompson, J, Personal Interview, 2019)

When asked about how important data is for companies, Thompson highlights on the fact that it is very critical, yet, how data is positioned within an organization should be even more important. in addition to their data, some of 33 sticks clients ask to bring in, their personal experiences as well, or make decisions off of their "gut", Thompson mentions that these clients do not realize that personal experience is data as well. Thompson states:

> "…better way to look at it is to be data informed, you now, we take the data as part of the overall equation that we are looking at, and we also take personal experience, and then you have people that say, well I like to make decisions off of my gut… the reality is that's data as well. You are just not realizing it, right… so taking all of those things into consideration and making decisions is, as I believe the right way to look at it. So, data informed businesses are critical…" (Thompson, J, Personal Interview, 2019)
>
> Thompson's definition for Web analytics is as follows:

> "… so in this space, I think it's really digital... so, when we talk about Web analytics, it's really covering this sphere of digital and the reason I say that is because there is a real bifurcation between that and tradition in house analytics, or example financial analytics or data modeling is a much different skill set and a different person and position differently in companies than what we see in Web analytics, which tends to be focused on digital properties websites… and much more closely aligned with marketing than with a traditional fight and financial analysis…" (Thompson, J, Personal Interview, 2019)

According to Thompson, companies should use Web analytics in order to get a direct view into the behavior of their consumers, as it is an opportunity to study the consumer. Through web analytics, companies are able to collect data and analyze the behavior of different consumers for a fairly low cost, compared to traditional ways of studying people's behavior. Consequently, companies should take advantage of Web analytics in order not to fall behind competitors.

Making the best use of Web analytics depends on the analyst and many other factors. Thompson says:

> "…when it comes to analysts, there's really two primary roles that we see in business, one I would define more as data distributors, where you know, we are putting dashboards together, we are collecting data and sending it out. That's important. But that's not where the real value lies... the real value lies in analysts that really are using data again as part of a bigger discussion. It's just one input into a larger thing that we are trying to solve for…" (Thompson, J, Personal Interview, 2019)

In other words, to make the best use of Web analytics, analysts would have to understand the business and its goals. Thompson says:

" … analysts have to be able to take all of those things and be able to tell a narrative to say again, this is the behavioral patterns, we are seeing with our consumers, and even take it a step further and say, and this is what I am seeing from the data, so this is what I would recommend that we do next… so decision making…" (Thompson, J, Personal Interview, 2019)

According to Thompson, there are two primary challenges to using Web analytics. The first is the lack of resourcing in the Web analytics space. Companies would be willing to spend money on tools and software, rather than employees. While a company might have high end analytics platforms and software, there are not enough professionals to drive them. Therefore, companies need more resources in order to invest in their analysts to become savvy enough to distribute and analyze data. A second challenge faced by companies is that Web analytics is not getting the seat it deserves at the executive table, within many companies. Thompson explains:

" unfortunately, Web analytics is at the kids table… so if you've ever gone to a big family gathering and there's a big table, and it's like, oh, we do not have enough room for everyone at the big table, so we are going to put a little card table at the end of the table for some of the kids… unfortunately, Web analytics sits there in many, many organizations…" (Thompson, J, Personal Interview, 2019)

When it comes to specific metrics and KPIs, Thompson believes that it all depends on what kind of company it is in the first place, and the goals the company wants to achieve. Thompson suggests that analysts should find that one KPI the company can align with, and then work back from there and find specific metrics for the company's objective. He believes that:

"… the closer to revenue you can get, the better. So, being able to align with revenue at some point is critical, but we tend to start at what the most critical metric is for your

company, and then work backwards from there. So, for example, for a travel tourism company, that one metric would probably be boking rate, for retail, it's probably average order value, and so on…" (Thompson, J, Personal Interview, 2019)

He continues to emphasize on knowing that one metric first stating:

"If I am a company and I have 20 different KPIs and I work in marketing or I am doing email marketing or I am doing analytics implementation, how do I know if I am even pulling in the right direction? So, if our goal is more bookings, that's easy to align with right!... so, not to say that you can't have lots of other metrics you should be looking at, but you should start with whatever that most critical metric is that keeps the business going and then work backwards from there…" (Thompson, J, Personal Interview, 2019)

Consequently, choosing the right metrics and KPIs really depends on the industry and the company itself, as companies within the same industry are uniquely different. A company should take its time to understand what's important for them and what their goals are before choosing specific KPIs and metrics to measure their performance, and according to Thompson, that is the real differentiator. It is also very important for companies to study best practices and industry trends and take time to understand the specific needs of the business, because there just is not a one size fits-all approach when it comes to using KPIs and metrics. Knowing which data is more meaningful requires a company to study the its business really well, both from a financial and a brand's perspective. Thompson says:

"…again, it's not something that you can just show up and say well, we are retail, for example, so we are going to measure one, two, and three. I mean sure there's some low hanging fruit that are easy to pick, but it's truly just understood why we are in business,

what are we trying to do and what are our goals." (Thompson, J, Personal Interview, 2019)

When it comes to the future of Web analytics, it will have to take a place at the executive table, like Thompson mentioned. Analytics will have to grow up to a point where companies are actually using data to make decisions in order to achieve an overall successful performance.

Cox Automotive

For the third case of this research, KJ Zhang from Cox Automotive was the interviewee. Zhang is an analytics manager at Cox Automotive, whose responsibility includes doing market research analysis mostly based on the company's web activity data such as looking at the search patterns, user behavior, and finding opportunities to improve the site. According to Zhang: "data is very, very important within an organization, because for example now at Cox, when a user is browsing the site, they leave a lot of data marks… so, it's very important and it's important for making business decisions." (Zhang. KJ, Personal Interview, 2019)

Companies should use Web analytics because the world of the internet is increasingly growing, and since everything is now moving online and companies do not have a personal connection with the user anymore, data and Web analytics are considered to be the most reliable source of what a user's preference or behavior is. Analysts tens to track lots of information within their company, and data does get overwhelming at times, so according to Zhang, that is why companies need analytics and statistics to look into the data and find useful patterns of decoding it.

As H's Analytics Manager and Thompson have mentioned, there are different challenges related to the use of Web analytics, and according to Zhang, data quality is a big challenge when

employing Web analytics. The systems, software or platforms used to decode the data can be challenging as well if they are not maintained and upgraded. Zhang states:

> "with data quality… collecting it in a reliable way and then being able to understand it… it's a big challenge… another challenge in Analytics is to be able to communicate the findings with the stakeholders… they are not necessarily data people or analytical people… so that's another challenge, to be able to influence them and convince them to, you know, make decision based on data and not just a feeling, it's a challenge…" (Zhang. KJ, Personal Interview, 2019)

However, when it comes to silos and communicating the data with the different divisions of Cox Automotive, the company is doing a good job of keeping the information flow among different groups, according to Zhang. It is true that it can be challenging at times as there are thousands of employees within the company, yet Zhang believes that they are good with their rituals like meetings and status reports, etc. As for KPIs and metrics, Cox Automotive is measuring different data. Zhang goes on by saying: "so, we do have KPIs that the whole company is like tracking very closely and use that to measure our bottom-line business performance" (Zhang. KJ, Personal Interview, 2019)

When asked about examples of these KPIs and metrics, Zhang states:

> "…so, we are a business that, at the end of the day, we need to bring deals, and so for us, the value is really "leads". How many of them that we can generate based on our websites, email, phone calls, things like that. So, we use kind of a monetary model to transform leads into value calculation, not necessarily mapping to the revenue yet but using that structure help you measure if the new features and functions on the site is adding more value dealer in a user as well…we tend to rely on KPIs and metrics that are

going to impact business.. bottom line like traffic, how much times users spend on the site… depending on the specific user case" (Zhang. KJ, Personal Interview, 2019)

Some trends occurring in the space of Web analytics is the fact that traffic is moving from desktop to mobile, as people are looking for fast and easy ways to search. That is something that Cox Automotive definitely takes into consideration when employing Web analytics.

The Smithee Group

Like mentioned above, the fourth organization taking part of this research is "The Smithee Group". Cody Giles is an advertising strategist at the Smithee Group, working with different retailers and brands and taking care of their full range of digital content such as their paid ads, their distribution website optimizations, creations, and so on. Giles is responsible for crafting the company's clients' quarterly strategy as per an advertising strategy standpoint.
For the Smithee group, online data is one of the most important assets a company can have. Giles states:

"…one of the things we push about digital and that is so important to us is data… for example if we do a billboard for a client, and then they tell me, like, what is your reach with that billboard, what are your impressions? Like, you know what your role is from that, we do not know the estimate that 500 people saw it. Well, we can run an ad campaign, then I can tell you the exact number of people that saw your ad, I can tell you the exact number of people that went to you website… and then if we have the data correctly, then we can match the people that come into your store to see if they saw an ad, so we can get the actual numbers for that... and it's not estimations, and it's also more

affordable... so for data, it's the biggest part of a company…" (Giles. C, Personal Interview, 2019)

According to Giles, Web analytics refers to the real time data on what is happening behind the scenes of a campaign, or a website. When it comes to how the Smithee Group uses Web analytics, Giles mentions that they use it in two different stages. Before the launch of a campaign for example, the analytics team spend some time doing a full analysis, making sure that they implement Google Analytics or Facebook Pixel for their client's account, and basically that the team has all the tracking capability setup. He adds:

"… but then once we are launching a campaign, again, it is checking all those things back so like from a campaign standpoint, we are taking time to attach the client to their campaign. So, for sending someone back to their website, we can categorize that through analytics to know exactly where they came from… so for our clients, we are usually running monthly reports for some of our clients, and other ones are getting end of quarter reports." (Giles. C, Personal Interview, 2019)

For the types of KPIs and metrics the company uses for its clients, Giles claims that it all depends on what kind of company their client is, and what goals they are trying to achieve. For instance, if one of their clients belongs to the ecommerce sphere, the Smithee Group would use metrics and KPIs related to their website in particular, such as their bounce rate or their user sessions. Giles puts into words:

"… but then we are also looking at the checkout process. So, how are people going through that process, are they getting stuck at any particular point? What can we do to solve it? … and then all of our campaign data is pulling over, so we are not only

providing the metrics, but we are providing insights." (Giles. C, Personal Interview, 2019)

Giles continued by giving example of some metrics and KPIs that his company uses for its clients, stating that it all depends on what the company wants to achieve. For an email marketing campaign for example, the analytics team will look at the open rates. He goes on by saying:

> "… if we look at engagement for example, customer engagement, we think of likes and shares and things like that, which are somewhat vague, they are vanity metrics... so, when we think of the numbers that are most important, form a web perspective, we think of the number of users on the site... but it is also a breakdown of new users versus returning users, time on site, conversion rates, how many pages they are visiting, are they filling out a form? Are they making purchase? And then across the board, when reporting for an analytic standpoint, it is basic metrics like user sessions, page views... again, all depends on what you want to reach*"* (Giles. C, Personal Interview, 2019)

It is also very interesting that Giles mentioned that it depends more on the campaign of the client than to what industry the client belongs stating: "I mean, for two companies that are in the same industry, it could be different. So, it depends on the campaign" (Giles. C, Personal Interview, 2019)

Eastman Chemical Company

The final company participating in this study was Eastman Chemical Company. Emily Whitehead is the Digital Marketing Representative of Eastman Chemical Company specializing in data analysis and UX, and who thinks that data is a must for companies nowadays and should be part of a company's business objectives. Whitehead defines Web analytics as:

"… the collection, reporting, and analysis of digital data. This goes beyond website traffic and ties into e-commerce data, advertising data, third party data" She then adds that "… without Web analytics, we would just be order-takers and not strategic partners for our business stakeholders. Without Web analytics we wouldn't be able to see the attribution online marketing tactics have on our sales revenue" (Whitehead. E, Personal Interview, 2020)

According to Whitehead, companies should make use of Web analytics in such way they would have an implementation and measurement strategy that captures important business metrics. She adds: "… my rule of thumb is, if you are spending money on it, you should be reporting/monitoring on as much as you can" (Whitehead. E, Personal Interview, 2020).

As regards to the barriers preventing a successful implementation of Web analytics, Whitehead refers to the lack of understanding of Web analytics usage to improve the business strategy, as well as the lack of bandwidth due to competing priorities explaining: "…for instance, checking this tactic off the list and move on to the next without looking at performance or impact" (Whitehead. E, Personal Interview, 2020)

Generally, Eastman Chemical Company measures its goals using specific metrics and KPIs especially for campaign effectiveness, overall website health and user behavior, aiming at measuring their brand's awareness and engagement and goal completion. For that, they use metrics and KPIs such as conversions, goal completion rate, impressions, likes, shares, mentions, and so on. In addition, in order to get more meaningful results using metrics and KPIs, Whitehead suggests:

"Good goals setting… You must use SMART goals or a hypothesis to test, then mine the data to prove/disprove the hypothesis. Data does not create insights unless the analyst

knows what is to be expected… then they can find anomalies or insights." (Whitehead. E, Personal Interview, 2020)

Finally, when it comes to Web analytics trends, Whitehead mentions quite a few including artificial intelligence, integration of more developed technology, collaborative business intelligence, Augmented analytics, and the increase use of mobile.

Chapter 6. Discussion and Analysis

In this section, the best practices of Web analytics that were obtained from the interviews carried out with the companies chosen as cases will be reviewed and analyzed. The outcomes will as well be discussed and contrasted with the literature review. Also, the approaches used in the analysis will be shaped by the Diffusion of Innovation theory.

When conducting interviews with the selected companies, it was noted that all of them do use Web analytics, though when considering the Diffusion of Innovation theory, they face limitations to using the best out of Web analytics. However, they all recognized the important and very significant role Web analytics plays in the successful performance of their company and all the advantages and benefits it generates for them. Also, the level of adoption differs from company to company. For instance, 33 Sticks and The Smithee Group would be considered as early adopters and more advanced in terms of their adoption of such technology as each company's main functions include Web analytics uses. Companies such as Company H, Eastman Chemical Company, and Cox Automotive are all considered to be late adopters in terms of each company's key functions. Thus, being of advantage to the best practices of Web analytics greatly depends on the level of adoption of this technology.

While contrasting the findings of every company studied, a number of similarities and differences were identified.

Understanding the Use of Data

All companies agree to the fact that data, in general, is such a crucial asset and valuable resource to any kind of companies. Yet, while Company H believes that analysts should make sure they trust their digital data when it comes to successfully implementing it, 33 Sticks emphasizes on the fact that in addition to digital data, personal experiences and observations, or

what is called “decisions off of an analyst’s gut” is also data that is very important for decision making. When it comes to Eastman Chemical Company, the company stresses on the significance of data in the 21st century as being part of a business’ objectives. Both Cox Automotive and the Smithee Group in their turn agree on the importance of data for understanding users’ preferences and behaviors. This is indeed verified by the different available literature as Paukkeri (2017) had stated that businesses can easily understand the preferences of their website’s visitors thanks to the very detailed data they acquire from their Web analytics.

All companies, with no exception, also agree to how easy decision making could be for them when quality data is generated from analytics insights. Comparably, it is very necessary to get the best out of data and get deeply involved in understanding its outcomes and insights as it is very significant and essential for decision making (Rich & Wilson, 2010).

Selecting the Right KPIs and Metrics

The companies taking part in this research all belong to different industries, and all have different roles as it comes to Web analytics. As a matter of fact, they each use Web analytics for specific purposes depending on their own objectives and overall company goals.

Both the literature review and companies selected for this study confirm that the use of KPIs and metrics are all subject to an organization’s goals and what it is trying to understand through the use of Web analytics. Indeed, when choosing the appropriate KPIs, it is very important to remember that not all KPIs would accord with all purposes. For instance, both Company H and Cox Automotive analytics team are focused on measuring leads, reach, and overall engagement. In order to do so, they use specific KPIs and metrics and track them very closely to measure their bottom-line business performance while keeping an eye on their conversion rates, their unique visitors, their total leads, their website’s traffic, or again the time

that their users spend on their sites. Equivalently, Nair and Shobana (2018) refer to the same KPIs and metrics when for instance, a company's objective is to "measure which traffic sources are driving visitors to the website, or to measure the conversion of website visitors into leads" (Nair & Shobana, 2018, p. 92). The Smithee Group in its turn mention some specific KPIs and metrics they use for particular clients. For example, in an e-commerce sphere, return on investment, user sessions, bounce rate, page views or lead conversion rate would be used for measurement. Once more, Nair and Shobana (2018) suggest the use of bounce rate, lead conversion rate, or again return of investment to be used for achieving the same objectives referred to by the participant companies.

When it comes to Eastman Chemical Company, the company focuses on measuring awareness and engagement, which it evaluates using conversion and goal completions metrics such as goal completion rate, impressions, mentions and shares, etc., which were also mentioned by Nair and Shobana (2018).

Considering Web Analytics Barriers

When it comes to benefiting from the use of Web analytics for the company's successful performance, it is also very important to be aware of and try to surpass all impediments that rise up when using Web analytics, or better work past these impediments. Although both Company H and Cox Automotive mention data quality as the biggest challenge faced when employing Web analytics, they both disagree on the level of data process among the different departments of the company. For Company H, silos within the organization bring about the big challenge of trust in data. Cox Automotive however, believes that trust in data within a company can be fixed by a well-structured communication between its departments, which is what Cox Automotive is doing. On the same note, this lack of data process within an organization is indeed mentioned in

the literature review by both the Digital Analytics Association (2014) and Gibbins, Lee, and Patron (2012).

33 Sticks states that the lack of resourcing in the Web analytics space, or what is referred to by Chaffey and Patron (2012) as limited budgeting is another barrier to take into consideration. In this context the lack of resourcing would not only refer to the financial resources invested in the adoption of Web analytics but would also mean the lack of qualified staff. All of 33 Sticks and the Digital Analytics association (2014), and Gibbins, Lee and Patron (2012) agree on this point. In fact, 33 Sticks explained how money would be invested in software and tools more than staff and people, which was then confirmed by the last authors mentioned above who believe that the industry as a whole is not recruiting enough skilled people to perform Web analytics, but is rather putting in financial resources in tools and media. Moreover, the survey conducted by the Digital Analytics Association in (2014) had also resulted in 21 percent of analysts believing that a major problem hindering the best practice of Web analytics is the lack of experienced staff.

Furthermore, the perceived value of Web analytics is an impediment that the Digital analytics Association (2014) touched upon in their survey stating that 29 percent of analysts believe that the value of Web analytics is not well perceived in the digital analytics space. Comparably, 33 Sticks metaphorically refers to Web analytics being at the kids table within the industry, or in other words, the value realization of Web analytics has unfortunately not been realized yet by many companies belonging to the late majority.

In the same context, Eastman Chemical Company mentions a very important barrier that they referred to as the lack of bandwidth. The Digital Analytics Association survey (2014) in its turn mentions actionable data. Some companies might move forward within their Web analytics

process without looking at the impact of previous KPIs or metrics, or as mentioned in the literature review without focusing on data that can actually be acted upon when it comes to decision making.

Considering Web Analytics Trends

While there was a number of trends mentioned by the participating companies, there were only few similar trends mentioned in the literature review. Web analytics trends were referred to in the literature review as being helpful in improving "both the method of data collection as well as the analysis of the data, providing significantly more value from a business perspective" (Ferrini & Mohr, 2009, p.131).

Many trends mentioned by different authors as seen in the literature review section included the integration of technology and marketing techniques (Ferrini & Mohr, 2009) - also mentioned by Eastman Chemical Company in the interview- the use of mobile as a mean of accessing the web, rather than desktops. The integration of mobile technology is also emphasized on by Durcevic (2019). This was also corroborated by Cox Automotive stating that it is one of the major trends of Web analytics. The use of cookies and page tagging (Ferrini & Mohr, 2009) or as stated by one of the companies selected for our cases (Company H) web privacy, is also another trend to consider when deploying Web analytics. Finally, augmented analytics as mentioned by Eastman Chemicals Company was focused on by Sigma (2020) and Christopher (2020) as being one of the most important and continuing trends of Web analytics. Davis (2019) in its turn stated that augmented analytics is crucial when it comes to generating quick insights with as fewer human skills as possible.

While the trends found in the literature review were limited to a minimum number, the companies selected as case studies referred to new Web analytics trends such as data quality management or data visualization, which most of the companies agree about their importance.

The following figure (Figure 3) represents the model developed for this study as per Eisenhardt's (1989) theory building model:

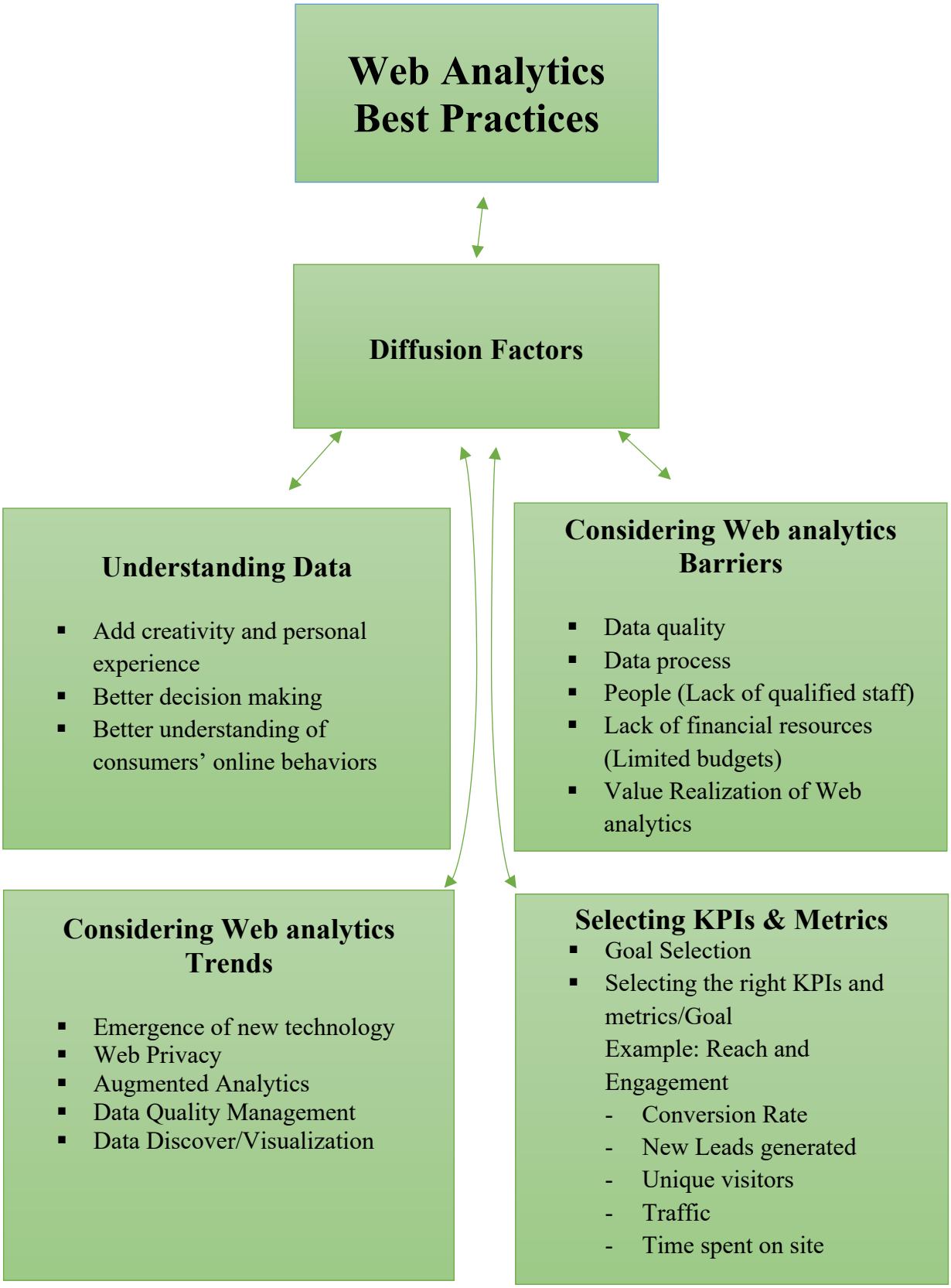

Figure 3. Model developed for the Best Practice of Web Analytics

Conclusion

Overall digital marketing is without a doubt, an important part of an organization's operations helping them achieve their goals and objectives. "Digital marketing is very much important for the sustainability of any business organization" (David et al., 2019).

This study essentially investigated the best practices of Web analytics for an organization's successful performance. This research focused attention on four crucial elements that companies from different industries could take account of when adopting and making use of the technology of Web analytics. Grounded on the outcomes of this research in addition to the available literature review, presumptions contributing to companies' awareness of Web analytics value and advantages were drawn.

For a complete and perfect analysis of a company's digital performance, analytics professionals should take into consideration many factors shaping the usage of Web analytics within their organizations. Understanding the use of data, selecting the right KPIs and metrics, taking into consideration both the impediments hindering the use of Web analytics and the trends of Web analytics are all elements that organizations should reflect on when it comes to improving their business strategies and reaching an overall successful performance. As a matter of fact, a comprehensive and full understanding of the correlation between these factors and the technology of Web analytics is very crucial for an effective implementation, hence a successful performance. More detailed characteristics influencing these factors are referred to in the final theory developed for this research. When mapped out and executed efficiently taking in consideration these characteristics, the implementation of Web analytics can generate in depth insights that would lead to an effective and successful performance for any kind of organizations.

Limitations and Future Research

It is brought to attention that the present research was faced with a number of limitations. The data gathered for this research was collected from companies belonging to different industries, and which each had a different role when it came to Web analytics. Hence, it would be impractical to infer reasoning for every specific industry. In addition, because of time and resource constraints, this study was primarily restricted to five organizations, while it would have been more advantageous for this research had it had more data resources.

There were also few limitations when it comes to the literature review that should be acknowledged. As mentioned before, Web analytics is an emerging subject matter with very restricted scholarly resources. A simple search on Google scholar or different other scholarly journals yields a limited number of references related to Web analytics. There is no question that this scarcity of Web analytics references is not going to be such an issue in the time to come; still, it is currently a consideration.

Furthermore, this research adopted a qualitative methodology only, while further quantitative methods comprising surveys or larger scales of data collection should be considered for validating the findings and obtaining a more beneficial knowledge of the best practices of Web analytics for an organization's successful performance, especially when it comes to the topic of industry-type specific KPIs and metrics use.

As considering the barriers to effective use of Web analytics is an important step for better Web analytics insights, it would be engaging to research strategies that companies could use to work past these barriers and fully benefit from the functions of Web analytics. It is also very important to bring into focus the fact that this study's outcomes were to some extent generalizable. In addition to theory building, Eisenhardt (1989) stated that there are three more

kinds of generalizations that could be explored within the case study type of investigations. These include “developing concepts, drawing specific implications, and contribution of rich insights” (Mähring, 2002, p. 74). So, the present research insights could be evaluated for generalization.

Another compelling approach for future research could be the emphasize of exploring the development of new digital tool when using Web analytics. That being the case, dimensions of the research could incorporate an amplified research comparing the organizations adopting the basic Web analytics tools and the ones opting for the newest and most developed versions. Lastly, studies about the best practices of Web analytics within industry determined companies could be carried out as for being advantageous to particular industries.

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APPENDIX: Interview Guide

Interview Guide (45 minutes)

Introduction:

My name is Salma Dahbi and I am graduate student at East Tennessee State University. I am currently conducting research for my thesis as part of my degree requirements, and as mentioned in the consent form, I will be asking you few questions about the topic of Web Analytics. Before we go ahead and start with the interview,

- Have you had a chance to review the consent form that I had sent you?
- Do you have any questions concerning the consent form?
- I will need your agreement to take part in this research study, so do you agree to be part of this research following the consent form regulations?

Intro: (5 min)

- Can you talk to me a bit about your role at the company?
- Have you always worked in this field? What was your job position before working at this company?
- Can you tell me about your job responsibilities at your current role?

Understanding Web Analytics: (15 min)

- How important is data for companies, in general?
- How would you define web Analytics?
- How much time do you devote for web analytics?
- Who has access to the use of web analytics within your organization?
- To what extent do you use Web Analytics within your organization?
- Why should organizations do web analytics?
- In your perspective, how can analysts make the best use of web analytics?
- How do you think web analytics increase the value created by your company?
- What are some of the challenges you encounter when deploying Web Analytics?
- What do you think are the barriers of adopting web analytics within organizations/ your organization?

Understanding Metrics and KPIs in Web Analytics: (20 min)

- How strongly do you feel about the need for web metrics measurement?
- What benefits do you get from measuring specific metrics?
- For what specific purposes does your company measure some specific metrics?
- What are the most important areas/categories that your company measure using web analytics? (Ex: Brand Awareness, Engagement, customer satisfaction, etc.)
- In your perspective, what are the most important metrics and KPIs to measure?
- What metrics and KPIs are you measuring in your organization?
- How can we get more meaningful results using specific metrics and KPIs?
- How do you know which measurable data is meaningful?
- Are there any specific metrics and KPIs that you believe are useless when it comes to generating insights?
- How satisfied are you with the results of web metric measurement?

Web Analytics Trends: (5 min)

The digital analytics industry continues to grow and change,

- How do you see web analytics in the future?
- What are some web analytics trends?
- How do you analyze these trends?
- Which advice/recommendation would you give to potential web analytics professionals?

10/15/19

VITA

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