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The impact of Web Analytics in Web Development Process

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Abstract (Max. 200 words):

Web Development and the way it's been applied nowadays has been remarkably affected by the trend of harnessing user's output through the implementation of Web Analytics. Understanding the degree in which the process of web development is driven by data demands a detailed examination on topics within the area of Web Analytics and its correlations with Web Development. Accordingly, the strategically implementation of user derived, refined and analyzed data is reflecting the actual incentives and goals business related with the website. Nevertheless, the concept of detecting the roles of individuals involved in these processes and investigating their actual roles and contribution, reflects a matter of great importance for unveiling the actual status quo of web development processes. Therefore, a descriptive analysis of the stakeholders' involvement who are shaping and driving the development process is eminent. Describing the mentality and the cooperation established in the relationships of the various stakeholders combined with the competences provided from Analytic tools is providing a valuable knowledge on the phenomenon of enquiry. In this master thesis, the contemporary process of Web Development is deconstructed and through the examination of Web Analytics and the different roles of individuals involved within it. Additionally, a framework model refined from this research endeavors, that depict the stakeholders' correlation with the processes that web development follows, is disclosed.

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George Tzanavaras

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1 Introduction

No one among us can visualize modern life without the component of the World Wide Web. The allegory through the name web, stands for its defined actual natural aspects; as it prevails over the other means of communication and expands uncontrollably, permitting for any new individual node to adjuncts its capacity (Miller and Slater, 2001).

Internet became popular in a brief time, where simultaneously became synonymous to communication with business and user, to interactivity, and to an important electronic marketplace (Lin and Lu, 2000). Firstly, in Web 1.0 we had been introduced to the world of developers, creating static websites mostly in desktop's environment and without the user's interaction. Consequently, Web 2.0 were using the same technologies as Web 1.0. while the real difference came with Web 3.0 where most of the web interfaces are interactive and responsive (Pomonis et al., 2013). Chen et al. (2012), reported that with the rise of Web 3.0 the procedures of collecting data, analytical and Web Development Processes were blooming while started an era for creating more attractive and interactive interfaces.

To follow the pattern of Web 3.0 user interfaces, lot of specializations should be combined and cooperate; from skilful developer teams (Murugesan and Deshpande, 2001), gifted graphic designers (Deshpande and Hansen, 2001), visionaries web data analysts (Bhatnagar, 2009; Croll and Power, 2009; Moe and Fader, 2001; Talia, 2013;), and talented marketers (Croll and Power, 2009; Eirinaki and Vazirgiannis, 2003; Russom, 2011; Srivastava et al., 2000; Winer, 2001), to investors, executives, support teams (Russom, 2011), and business owners (Kaushik, 2007) are among the most important for the decision making (Kaushik, 2007).

Accordingly, the Web Analytics constitutes of gathering together actions like collecting, measuring, monitoring, analysing and reporting the data (Hasan et al., 2009). According to Wang et al. (2011), Web Analytic tools supplying developer/designer teams with measurement methods to describe and present user's actions on websites. Croll and Power (2009) estimated that analyzing the data renders the meaning of also being able to make comparisons; while the responsible team for the decision making has to examine thoroughly metrics or the Key Performance indicators applied

Among these KPIs, an important one is what marketers call "conversion rate" or "Conversion". It is an indicator that shows how much a user e.g. a customer converts to a goal. The goal is often set by marketers who are in a continuous effort to convert a user or a visitor of a website into a customer (Croll and Power, 2009). For instance, if the goal is to have many clicks on a specific link that exists to a web page, then the conversion will be the percentage of those customers who visited the specific web page and clicked the specific link (Omniture, 2006; Nielsen, 2013). Conversion as a term is explained practically by Omniture's (2006) report as the transition of a prospect website user to the stage of an actual visitor and till his transition to a subscriber, customer, or even a lead applicant. These stages of user's actual state referring to his interaction with the website are attempted being modelized by data analysts and marketers as the conversion funnel. The meaning of the funnel refers to a staged formalization of the website's ability to convert the user from a disengaged state to the state of conversion (Abhishek et al., 2012).

In practice speed, reliability and attractiveness of a website interface are components associated with positive user experience and furtherly bigger numbers of conversion rate; which from their perspective are linked with business revenues, increased sales and higher ROI indexes (Marcus, 2002; Frick, 2010; Duyne et al., 2002). Alongside the design and implementation of websites is achieved through insights provided from data collected via Web Analytic process. The World Wide Web Consortium (W3C), which is attributed as the official community establishing web standards, has set an integral guideline through which websites are advised to be designed and implemented (Frick, 2010). With the aim of taking advantage of all the insights from the user interaction with the website's interface and establishing a dynamic environment maintaining the site's targeted effectiveness data driven development methods have been employed (Duyne et al., 2002). Design templates implemented by structured prediction algorithms enable a broad span of interaction mechanisms for web design including methods of rapid prototyping to targeting between factors of websites components (Kumar et al., 2012).

1.1 Problem

Back to 1998, Sabbaghian et al., stated that Web Development Process consists of many participants and a significant collaboration of individuals of different areas. Escalona and Koch (2004) are expanding this perspective and set that the development process is a combination of different stakeholders that extend from analysts, graphic designers, developers, and marketers (Bhatnagar, 2009; Croll and Power, 2009; Deshpande and Hansen, 2001; Eirinaki and Vazirgiannis, 2003; Moe and Fader, 2001; Murugesan and Deshpande, 2001; Russom, 2011; Srivastava et al., 2000; Talia, 2013; Winer, 2001). Despite the collaboration of the various technical related individuals from the spectrum of stakeholders related with Web Development Process, more and more the dominant role of Web Analysts is emerging.

Web analysts tend to provide elucidation stemmed from data user data collection providing a mapping of instructions to stakeholders who participates in the development process (Sabbaghian et al., 1998). Murugesan et al. (2001) stated that the development process has to be more "disciplined" moving from the "static" old way interfaces to more innovative and interactive websites; while the construction has to be more resemble the construction of applications rather than the old-fashioned static websites. In addition to this Web Analytics are undoubtedly adding value to organizations by offering competitive insights at the development decision process with insights directly from the users (McAfee et al., 2012). In business, there exist various Web Analytic tools to measure user's behavior, from click-throughs, subscriptions, analyzing Web Traffic, even to be able to track the user offline (Kent et al., 2011; Pakkala et al., 2012; Peterson, 2004; Russom, 2011; Srivastava et al., 2000).

In our thesis, we delve into on how Web Analytic tools help various stakeholders, who are involved in Web Development Process, to analyze the collected data. According to our authors in the literature review, Web Analytic tools supply the process with data and demand from stakeholders that should be more specialized to Web Analytics in a Data Driven Development era. The problem we are called to search is to discover which stakeholders changed through the impact of Web Analytics, how their roles changed, and which are the new demands in Web Development Process after the implementation of the Web Analytics in the company.

1.1.1 *Research question*

The Research question was composed from our endeavors on depicting the content of the thesis research problem while framing the needs of the purpose of this research. This master thesis has as a responsibility for managing to answer the question below:

- What is the role of web analytics to the stakeholders involved in web development process?

1.2 Purpose

The purpose of this research is to bring in light, after sufficient research and collective empirical data, the impact of Web Analytics related to the stakeholders who are analysing collected data after the analytics implementation. A research on which requests or skills the Web Analytics demand from various stakeholders involving in Web Development Process.

By conducting this study, we aspire to provide some valuable insights to companies but even for professionals who are interested around how data driven development has affected the notion which conducted the design and implementation of contemporary UI. Additionally, we aspire to reflect on how the use of Web Analytic tools, can provide data that could establish for web interfaces the right direction towards conversion goals.

Delving deeper in all the methods incorporated in the development of modern User Interfaces and understanding the assets that Web Analytics offer, we aim to track down the actual role of various stakeholders that are needed for this process. Consequently, we intend to contribute with a model that reveals the processed of Data-Driven Development that would be also capable to depict the contribution and the relation of various stakeholders that this process entails. We consider our research issue in the broad spectrum of the IS field, and we aspire to provide a valuable mapping both for stakeholders and enterprises.

1.3 Delimitation

The delimitation of our scientific paper was the extremely large amount of information covering our topic, opposed to our limitation of time delivering our thesis. We recognize that the cutting-edge topic of data driven development is evolving from its nature hectically and has many aspects to delve with. But we have chosen to focus mostly on the Web Development Processes and the stakeholders involved within them. Consequently, we managed our time and material resources in order to specify and focus in material that would draw the most to our research subject and the general audience, without being disoriented by the abundant amount of information.

We also consider the achievement of approaching the stakeholders involved with Web Development successful. But we aspired as well, in a larger scope of individuals interviewed, with the aim of being able viewing holistically our issue from the perspective of all different specializations implicated with. Due to circumstances of time, we did not succeed to track or approach significant part of targeted subjects of interest that could offer additional value to the rigor of our empirical findings. Accordingly, we consider this as a part of our delimitation but

also rendering a fruitful occasion for further research to approach professionals alike product owners, marketing strategists, sales representative, and application architects.

2 Literature review

2.1 Introduction

In the following chapter, we present the need of organizations to adapt the User Interfaces of their websites accordingly to the Web 3.0 demanding of innovation and interaction in relation to user's needs (Chen et al., 2012; Pomonis et al., 2013). Initially, we managed to elaborate our topic of interest, through a thorough exploration of Web Analytics performance influencing the Web Development Process. Consequently, generated the requirement to acquainted with the existing analytic tools. Additionally, for a better understanding in the phenomenon of Analytics, we expanded our knowledge in need for further analysis due to processes that organizations examine; while drawing attention to the Key Performance Indicators that they consider important on gauging for delivering an attractive and profitable UI. For a more fruitful result on enlightening the process of Web Development, we described the combination of numerous features and professionals and the impact of the collected data in the Data Driven Development era. The era of Data Driven Development and the involvement of Web Analytics in the Web Development Process, emerged the need of stakeholders for analyzing the collected data, while also enriched the necessity of advanced stakeholders to empower with their analytical and critical skills the process of redesigning a website.

2.2 Describing the phenomena of Web Analytics

Nowadays the web is described by its complexity attributes and refined application overlapping its former "human only understood" content and reformed as a dynamic environment, machine to machine prone interaction version (Choudhury, 2014); while development process also has to be more "disciplined" moving from the "static" old way interfaces to more innovative and interactive websites (Murugesan et al., 2001). Denominated as Web 3.0, the web has been developed towards a service oriented perspective reforming the standards of e-Business and the value it creates for enterprises (Aghaei et al., 2012). The actual difference came with Web 3.0 where most of web interfaces are interactive and responsive (Pomonis et al., 2013).

Web Analytics were created to give a sense of improvement for those who wanted to have a successful trajectory in the world of Internet (Sostre and LeClaire, 2007). In addition, Web Analytics are meaningful for the organization's development and their evaluation online (Phippen et al., 2004). In 2008 Simmons added value to the meaning of analytics by characterized them as "another exciting and cutting-edge tool". Peterson (2004) managed to explain the purpose of Web Analytics in a simple phrase; the goal is "understanding the online experience such that it can be improved".



Figure 2.2.1 : Purchasing Process (Moe and Fader, 2001)

Web Analytics supply information to organizations of what users do on the website, how users navigate, which are their actions, how they behave in general, if they purchase or subscribe, if they converted from visitor to customer (Croll and Power, 2009; Eirinaki and Vazirgiannis, 2003; Kaushik, 2007; Kent, 2011; Moe and Fader, 2001; Srivastava et al., 2000). Accordingly, Web Analytics need data to process, therefore collecting data is crucial for analysis process; Kohavi et al. (2002), emphasized the need of collecting data so as analysts can critically analyze them.

Web Analytics are measuring visitor's actions by mouse clicks (Kent et al., 2011), page views, (Kaushik, 2007), customer log files (Moe and Fader, 2001); while Web Analytics tools accumulate and report data (Bhatnagar, 2009). Additionally, Web Analytical process and Web Analytics tools, are measures for examining Web Traffic, a combination of estimating the visiting time, number of visits, keywords and trends (Kaushik, 2007). Among technologies and techniques that are used in Web Analytics the one with major importance is Web Traffic; following other techniques with a minor importance that will not be described with further details in this thesis are, web transactional data, and web server performance data (Peterson, 2004). Web Analytics help control Web Traffic, track the user's actions, the path that followed to reach the website, which information visitors found interested in accessing, and in consequence monitoring and analysing the collected data (Bhatnagar, 2009; Chen et al., 2012; Kaushik, 2007; Kent et al., 2011). Accordingly, to the theory of Gui et al. (2016), Web Traffic is the transmitted data, send or receive data, between visitors and websites. Another Web Analytic process is the usability tests which are responsible for analysing data and for creating a

more attractive User Interface (UI) by decreasing design and functional problems (Kaushik, 2007). Kaushik (2007) also proposed a combination of team, philosophy, and structure of Web Analytics to accomplish the business goal.

With the integration of analyzed data through Web Analytics tools, immediately this process gives access to stakeholders to exploit huge amounts of analyzed data, KPIs, and metrics (Kaushik, 2007). KPIs are such important as Web Analytics and are responsible for orienting the development process into success (Aladwani and Palvia, 2002; Clifton, 2012). The importance of Web Analytics results in the organization profit was mentioned from Eirinaki and Vazirgiannis (2003); Web Analytics results, provide the ability to stakeholders to use and turn analyzed data into profit by personalizing websites, examining visitors' actions, while simultaneously, different stakeholders are improving and maintaining the website. Croll and Power (2009) estimated that analytics might be the media for a satisfactory website, but key roles to a Web Development Process are visitors' behaviors and actions while navigating, and the affection of design to the organization. Additionally, the theory of Eirinaki and Vazirgiannis (2003) for personalizing a website embraced by Srivastava et al. (2000); which suggested dividing the Web Development Process into four stages, collecting data, grouping and make a framework of the data, analysing data, executing gathered and analysed information. Escalona and Koch (2004) are stating that the development process is a combination of different stakeholders from analysts, graphic designers, developers and marketers (Bhatnagar, 2009; Croll and Power, 2009; Deshpande and Hansen, 2001; Eirinaki and Vazirgiannis, 2003; Moe and Fader, 2001; Murugesan and Deshpande, 2001; Russom, 2011; Srivastava et al., 2000; Talia, 2013; Winer, 2001).

2.2.1 The usage of Web Analytic tools and their importance in Web Development Process

Business plan process became popular with a significant importance in the era of Big Data; therefore, searching for data and collecting them for the organizations were major priorities (Kohavi et al., 2002; Russom, 2011; Talia, 2013). Web Analytic tools managed to control Big Data (Russom, 2011) and through their effectiveness and straightforwardness (Croll and Power, 2009) provide to stakeholders a simpler manageable process of Big Data (McAfee et al., 2012). Talia (2013), confirms the importance of extracted data and include to her knowledge the importance of Web Analytics into the Web Development Process.

Organizations take guidance and depend on skilful business analysts that use analytic tools on advantage of the organization's progress, for engaging customer, improving production, and notify business decision (Kandel et al., 2012). Additionally, Bhatnagar (2009) added that Web Analytic tools are responsible for gathering and reporting data.

With Web Analytic tools it is possible for organizations to measure and control the Web Traffic of their website, in detail of the process, to measure the number of visits or the time that the visitor spends on a current web page (Kaushik, 2007). Additionally, and according to Srivastava et al. (2000), Web Traffic analytical tools are tools that reporting statistical information for pages that visited the most, or the average time that visitors stayed on a web page. Web Analytic tools help control Web Traffic, track the user's actions, the path that followed to reach the website, the information that visitors found interesting, and in consequence monitoring and analysing collected data (Bhatnagar, 2009; Chen et al., 2012; Kent et al., 2011).



Figure 2.2.2 : Web Analytics Redesigning Process (Park et al., 2010)

After collecting data from visitors that navigated on the website (see Figure 2.2.2), the server gives insights to the organization through a process of reports, gathered log files, and Web Analytics, for improving and redesigning the website interface (Park et al., 2010).

Different stakeholders take quickly the advantage of analysed data that gathered through Web Analytic tools and directly implement them to their business goal, the highest process for the conversion (Kaushik, 2007; Moe and Fader, 2001). Additionally, stakeholders take the opportunity to exploit tremendous amounts of analysed data and KPIs (Kaushik, 2007; Moe and Fader, 2001).

According to Wang et al. (2011), Web Analytic tools supply, to any stakeholder who involves in Web Development Process, methods and techniques to improve websites and to create a more concrete and strong illustrative interface (Myers, 2000). For Chen, et al. (2012), Web Analytic tools are a milestone for creating a website, optimizing a product, analysing customer transaction and market structure.

2.2.2 Examining the theory of Web Traffic

Examining Web Traffic has a major importance to organizations (Pakkala et al., 2012); Eirinaki and Vazirgiannis (2003), explained how log files are adding value to the process of development through analytic tools; exploring total number of visits, average view time, top pages visited, search engines and keywords, server errors, cookies, and so on (Garrett, 2010; Kaushik, 2007; Kent et al., 2011; Moe and Fader, 2001; Peterson, 2004).

The importance of keeping control the Web Traffic on a website attracted solutions of advertising the products and having customers informed, by sending them electronic mails; while e-commerce managers are responsible for reporting aforementioned actions and maintaining website's visitors into the desirable numbers (Moe and Fader, 2001). External analytics are important measurements for gauging Web Traffic's path (Kent et al., 2011; Russom, 2011). Russom (2011) expressed his concern about the wrong impression that traffic analysis might bring in a company; for instance, he mentioned that the most important metric for organizations is to convert visitors into buyers, or users, therefore the analysis initially happened for the specific goal of conversion.

Organizations can control traffic on their website even offline, by adding a phone number and measuring the reached calls from the website (Croll and Power, 2009). Additionally, Croll and Power (2009) proposed some steps for controlling Web Traffic; point to a good relationship among affiliate websites, subsequently, an organization should control the Return On

Investment (ROI), and in addition, organizations should track where people are talking about their website and take part in the conversation.

2.2.3 KPIs

The best way to measure the impact of an action is to have the ability to recognize it, denominate and if necessary depict it. In business words, this is interpreted symbolically by the phrase “what you measure is what you get”, elaborated by Kaplan and Norton (2005). The Balanced Scorecards otherwise referred as Key Success indicators or Key Performance Indicators (KPI) are used broadly in business intelligence with the aim to set and visualize performance with indexes and the state situation of a business (Clifton, 2012). In other words, key performance indicators are a collection of measurements that have the ability not only to illustrate the relation between the current performance gaps and the desired ones but also to provide an indication for Executives or people involved with leveraging business strategy to achieve the bridging of them (Kaplan and Norton, 2005; Weber and Thomas, 2005).

2.2.4 KPI business implementation

Each business incentive endeavors to implement a strategy aligned with its capacity to achieve its goals. An auxiliary utility that enabled the translation of business unit strategies into measurements through a systematic perspective was refined by the use of the KPI's (Kaplan and Norton, 2005). In the essence of a website's nature, the implementation of these metric indicators is a live reflection of the actual performance status of the website towards its target audiences. Defining the goals, applying the right filters accordingly and focusing on the desirable parts of the online strategy consist the principal steps for identification of the key performance indicators that will be implemented for depicting performance measurement into informative benchmarks (Weber and Thomas, 2005; Clifton, 2012). This performance measurement business tool consists an effective mean to the diagram at first-hand business target goals and on second-hand their interpretation with the actual needs and effects towards its customer audiences (Weber and Thomas, 2005). Weber and Thomas (2005) offer a considerable model that reflects the physical assets that are important to be taken in concern with the purpose of reviewing if the composite customer requirements are aligned with the business goals. The three performance practices categories of design, operating and maintenance is engaged in the proper orientation to affirm the manufacturing performance requirements which are implemented for meeting the customer needs.

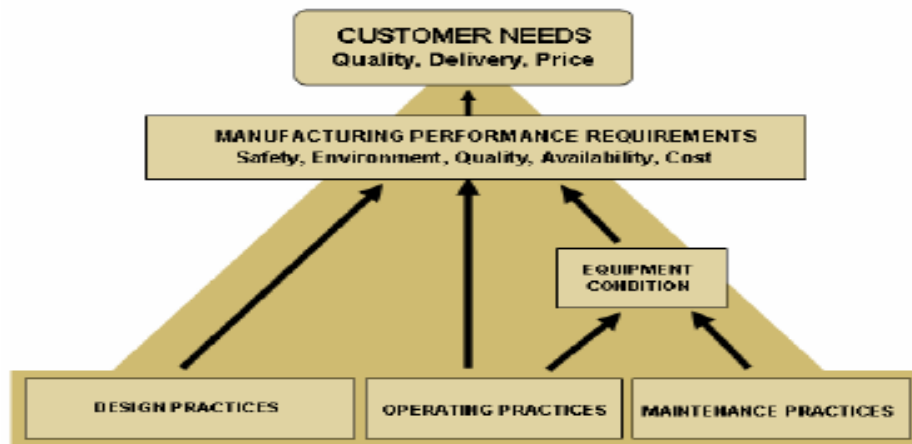


Figure 2.2.3 : Performance practices process, requirements through encountering customer (Weber and Thomas, 2005)

The above figure (see Figure 2.2.3), describes the three components of design operating and maintenance practices that are implemented accordingly to meet the Key performance requirements defined by the business operation standards which provide the current state of the manufacturing operation environment (Weber and Thomas, 2005). Each entity separately but also combined contribute to the ability to meet the aforementioned customer attributed goal requirements. Once an organization has refined its strategy to understand and indicate its visitor's requirements the next natural step is to link these performance Indicators with its assessed objective results(OKR). As a general definition, Niven and Lamorte (2016) in their book reflect that the framework that enhances ongoing discipline among employees, assuring a common focus of their objective work with the purpose to deliver critical results for the company's benefit describes the OKR measurements. Related with our initial aim point, at understanding the customer needs to be fetched by visitor data, it is critical to making an alignment between OKR and KPI indexes (Clifton, 2012). The translation of the OKR into KPI practically is constituted by setting specific web metrics through the business incentives. As placed with an example in Clifton's (2012) book, with the goal of e-commerce department of increasing the amount of money spent by customers should be associated by monitoring the average order value regularly.

2.2.5 KPI assigned to Stakeholders

With the purpose to comprehend the incentives that Stakeholders follow to attribute their KPI's in their metrics, Clifton (2012) in his book implements a mapping of strategies. These strategies drive the stakeholders to link their KPIs with the Object Key Results (OKR) related with their business initiatives. Accordingly, the Table 2.2.1 is projecting the information analysed from Clifton's KPI – Stakeholder attribution.

Table 2.2.1 : Stakeholders the OKR and their attributed KPI (Clifton, 2012)

Stakeholder	Stakeholder OKR	Suggested KPI	Measurements of KPI
-------------	-----------------	---------------	---------------------

E-commerce Manager	To see more traffic from search engines	<ul style="list-style-type: none"> • Average conversion rate • Average order value • Average per-visit value • Average ROI • Customer on first visit index 	<ul style="list-style-type: none"> • Percentage of visits from search engines • Percentage of conversions from search engine visitor • To cross-sell more products to us • Average order value • Average number of items per transaction customers
Marketing Manager	To sell more products	<ul style="list-style-type: none"> • Conversion quality index • Average ROI by campaign type • Percentage of new versus returning visitors (or customers) 	<ul style="list-style-type: none"> • Percentage of visits that add to shopping cart • Percentage of visits that complete the shopping cart • Percentage of visits in which shopping cart is abandoned
Content Creator	To see more visitors engaging with the website	<ul style="list-style-type: none"> • Bounce rate • Percent engagement • Average time on site and page views per visit • Advertisement performance • Percent new versus returning visitors • Percent high, medium, low bounce 	<ul style="list-style-type: none"> • Percentage of visits that leave a blog comment or download a Document • Percentage of visits that complete a Contact Us form or click a mail to link
Webmaster	Improve the customer experience	<ul style="list-style-type: none"> • Volume of visitors, visits, and pageviews • Percentage of visitors without English language settings • Percentage of visitors not using Microsoft • Percentage of visitors with a broadband connection • Percentage of visitors receiving an error page • Internal search performance and quality 	<ul style="list-style-type: none"> • Percentage of visits that leave a blog comment or download a Document • Percentage of visits that complete a Contact Us form or click a mailto link • Percentage of visits that bounce (single-page visits) • Percentage of internal site searches that produce zero results • Percentage of visits that result in a support ticket

As it was indicated each Stakeholder forms its metric prototypes indexes related with the object key results that concern the nature of his area. Each KPI reflects the requirements and the expectations of Stakeholder towards his objectives and the e-commerce activity of the enterprise. Relatively Clifton (2012), attributes the KPI that shows high level in metrics and mostly is

related with the general user interaction within an E-commerce with the KPI of Conversion Rate.

Jim Stern has accurately outlined that: “Most people are using Web Analytics as a benchmark: how did we do yesterday, and how are we doing today? Smart people are actually analyzing to optimize their website. The advanced people are using web data to optimize all of their marketing”, while on the position of chairman of the Web Analytics Association (Clifton, 2012). Reflecting this we attribute that web optimization is related directly to the accuracy of achieving its targeted objectives in a present perspective but also in the concept of future results. The KPI which reflects in metrics the path that a visitor will take to complete a particular goal and the quality of their interaction all along the website is mentioned as conversion rate (Clifton, 2012). There are various ways to measure the conversion rate KPI which will be analyzed thoroughly below.

2.2.6 Concept of Conversion Rate

Investigating deeper the reasons that rendered a website not only to be visited but also to reach its purpose of development, the metric term of user Conversion was conceived. Professionals involved with the analysis of the factors that consists the term of Conversion simply put it as the point leveraging the user from a visitor into a customer (Omniture, 2006). However, behind this statement, a whole area of inquiry is disclosed. An enlightening approach to the cognitive conception of how user conversion could be modeled, is provided by Omniture’s (2006) report, portraying the conversion as a natural path of the user activity on the website. The initial step for a user is to be routed on the landing page of the website. Thenceforth the prospect user is on the state of the website visitor in whom the website aspires to convert into a lead applicant. The user attributes as a lead applicant otherwise as a converted user could have the traits that the whole initiative of the website has settled on its conversion goals (see Figure 2.2.4). Therefore, may differ from a buyer customer or donor to even a simple subscription to the website's newsletter (Omniture, 2006; Frick, 2010).

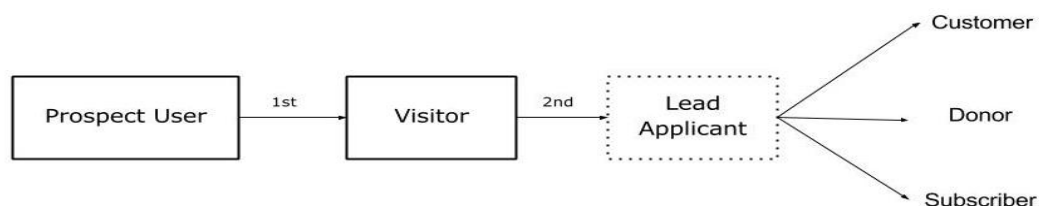


Figure 2.2.4 : User Conversion path, info extracted from (Omniture, 2006)

Recognizing that each of the above-mentioned steps exclusively enacts its own principal role on the conversion path of the user, it is fundamental in grasping the value conversion has for enterprises. Each business incentive is maintained by the web’s capacity to track the users/visitors needs and then implicitly project them back as a service to them (McInyre, 2015). For

these purposes, search engines are deployed to track down from the immense list of webs pages' the most compatible set of entities and then fetch the desired result to the user. Additionally, due to website content similarities among them on the today's website traffic, Search Engine Optimization methods are implemented for improving the search refinement of each initiative website presence (McInyre, 2015; Frick, 2010). Having been projected to a set of choices relative to its initial key requirements the user is prompted to navigate to a web address and therefore being at the state of the visitor. In this state, the user-visitor is interacting with the content of the website and accordingly essays to meet his purpose of visit aligned with his initial needs (Frick, 2010). During this presumed period of web-time, the conversion of the user occurs. Jacob Nielsen (2013) sets conversion as an interaction state of the user towards the website takes existence from the point that the user performs the desired action according to the websites target goals. More practically the conversion event of a website is related to the Key Performance indicators that are matter as business assigned goals.

Omniure (2006) suggests that conversions measurements are a principal factor to be taken in concern related with the optimal return on investment. Accordingly, Nielsen (2013) defines the conversion rate with the comprehensible example of the percentage of website visitors who perform a purchase from an e-commerce site. The Importance of the information that conversion rate offers lies to the website capacity in revealing its effectiveness towards its business goals. Translating the aforementioned in value, the conversion rate is linked to the total number of users purchasing something from a website divided to the total amount of website visitors (Nielsen, 2013). Undoubtedly conversion rate has strongly corresponded with the rates of Return on Investment Numbers. Accordingly, in his book Frick (2010) reports that the ultimate likelihood of visitors to transact with an organization website presence is heavily influenced by their website experience.

2.2.7 Conversion and User Experience

The conversion metric set as a key indicator for measuring the website's performance is related to its user and interaction goals results is linked directly with User Experience. Omniure (2006) in its benchmark spreadsheet sets that organizing and optimizing the website's structure would render both visual and functional rewards for the user and thus better conversion outcomes. The implementation even of a small change in the user Interface may form the user appreciation and thus his actions which has caused a whole area of trends related to conversion, complementing new approaches to UX design (Cardello, 2013). UX professionals have organized a framework with tools to understand the relation of UX engagements and conversions. Agile proactive actions for preventing conversion diminution, the practical implementation of causation-correlation theories meddled with UX and the right targeted persuasion of stakeholders through data, are some of the main parts of the aforementioned framework structure (Cardello, 2013). These parts are consisted by practical key areas of interest and are interpreted with web metrics.

The web metrics refined by plural research literature as significantly related with conversion measurements indexes are: unique page view, average time on page and user action events (Cardello, 2013; Omniure 2006; Nielsen, 2013; Clifton, 2012). However, the need of determining the precise factors that lead users to convert towards a website, required to make a categorization on the conversion goals into two discrete categories, those of Micro and Macro conversions.

2.2.8 Micro and Macro Conversion

The content of every website is set in accordance with its goals interpreted as strategy according to its user audience. E-business standards relating this goal with the terms Micro and Macro User Conversions. A macro conversion describes the primary website goals and it is broadly understood from examining the total of the actions that users are required to accomplish the purpose of the website being successful (Cardello, 2013; Hope 2013). In the other hand, micro conversions are referred as a smaller group of actions or engagements that would lead eventually to the achievement of the principal goal (Cardello 2013; Hope 2013). An example to understand deeper the concept of Macro conversion lies within the event of a successfully accomplished product sale on an e-commerce website while on Micro conversion lies, on the viewing of a product a potential customer might be interested in buying (Cardello 2013). Regarding the relation between Micro and Macro conversion (see Table 2.2.2), Cardello (2013) and Hope (2013) address them as the connection between all the small desirable steps or actions set as milestones towards the expectations of the main business goal of the website. In addition to this Cardello (2013) has offered an insightful table with some qualitative examples of Macro and Micro conversions linked with the general factors that attribute value for the website.

Table 2.2.2 : Examples of Macro and Micro Conversions (Cardello, 2013)

Macro Conversion	Micro Conversion
<ul style="list-style-type: none"> • Revenue based conversions • Lead member acquisition conversions • Enquiry conversions 	<ul style="list-style-type: none"> • Navigation based conversions • Interaction based conversion • Engagement based conversions

Having a mapping between the Micro conversions elements that lead to a Macro conversion, without doubt, will lead to the proliferation of the conversion rate of the website.

2.3 Web Development Process

After a sufficient research, we realized that to create a good interface is a combination of numerous factors and professionals. Back to 1998, Sabbaghian et al., stated that the Web Development Process consists of many participants and a significant collaboration, while in 2014 Franzago et al., agreed with the concept of collaboration of various stakeholders (see Figure 2.3.1). Murugesan et al. (2001), stated that the development process has to be more “disciplined” moving from the “static” old way interfaces to more innovative and interactive websites; while the construction has to be more resemble the construction of applications rather than the old-fashioned static websites.

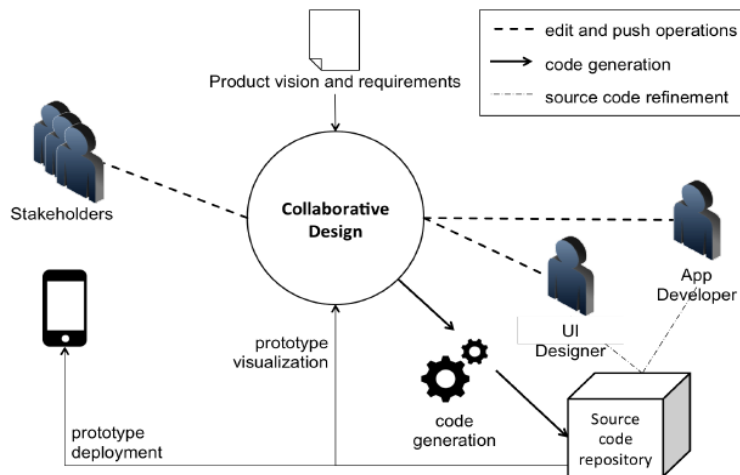


Figure 2.3.1 : Collaboration of Stakeholders in Web Development Process (Franzago et al., 2014)

Web Development Process begins by observing the user's behavior (see Figure 2.2.1), follows an analysis from the information gathered by stakeholders through Web Analytic tools, and culminate in conversion (Moe and Fader, 2001). The Web Development Processes that Ginige (1998) (see Figure 2.3.2) and Frazango et al. (2014) (see Figure 2.3.1) presented, are patterns for the development process that organizations should follow. Ginige (1998) proposed a model for the construction of a website with some important parameters need to be investigated before the construction. Subsequently, gathered information need to be examined by importance for maintaining prerequisites of the website, and finally, adapt all the aforementioned parameters into a well-constructive architecture (Ginige, 1998). Frazango et al. (2014), presented a website construction with the collaboration of stakeholders who are involved in Web Development Process. Frazango et al. (2014) also agreed with the older model of Ginige (1998) for the combination of various stakeholders, where, as stakeholders indicating marketers, analysts, project managers, and customers, excluding developer's team as the executors of the analysed data and not part of the collection or data analysis. In addition, stakeholders are those who will inform, review and force the procedures to the development team for redesigning the UI. Some of the parameters that a company needs to follow in order to construct a well-organised website, which also affects the Web Development Process, are economical aspects, experience of the responsible process team, the quality of the information gathered and analyzed, and the users ability to easily adapt to different application processes (Ginige, 1998).

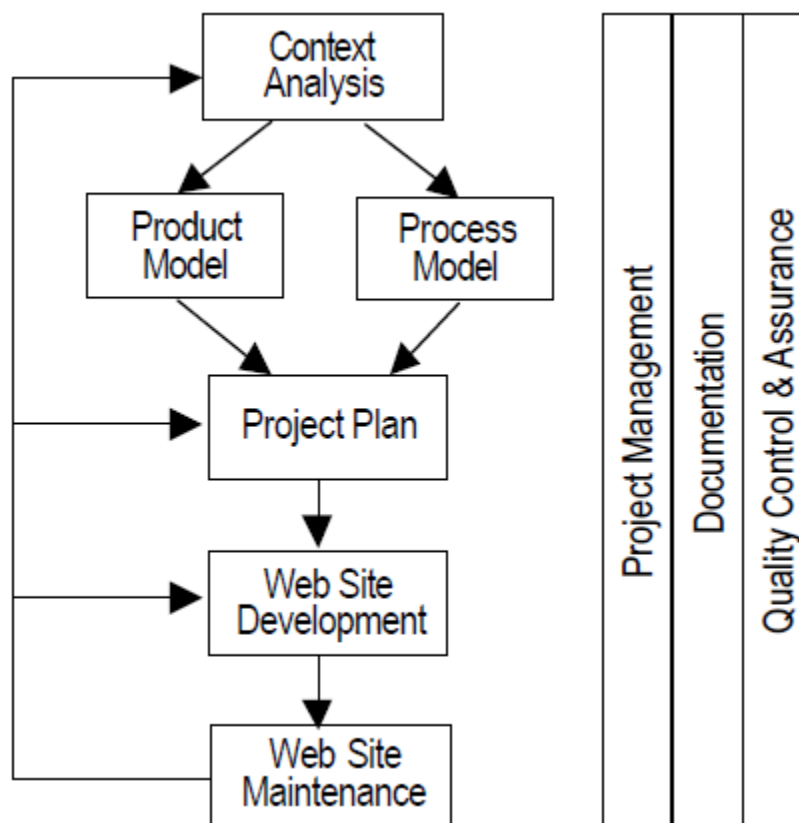


Figure 2.3.2 : Web Development Process (Ginige, 1998)

Ginige (1998) believed that the most important aspect of a Web Development Process is the context analysis and he stated that in order to have an organized website structure (see Figure 2.3.2), analysis of data should be a primarily principal and be able to manage it before continuing in the design process. Eirinaki and Vazirgiannis (2003), add knowledge to Ginige's statement by claiming that the usage data in a combination of data characterized by name, structure, and user's personal data, must be counting as important measures for a Web Development Process (Srivastava et al., 2000).

The Web Development Process varies and depends on the size of the organization. For instance, if the responsible team for creating a website is a freelancer developer, then he/she needs to be skilful in many scientific fields. According to Wang et al. (2011), believed that Web Analytic tools supplying developer/designer teams with measurement methods to describe and present user's actions on websites. Likewise, Myers et al. (2000) stated that developers are using tools to create more valuable and rich visual interfaces. The statements show that the developer needs to have knowledge in various fields; it is not only important to know about programming, but he/she needs to be able to examine and understand Web Analytics, to help improve and follow the Web Development Process (Murugesan and Deshpande, 2001; Murugesan et al., 2001).

In big scale organizations, in which many stakeholders take part in Web Development Process (Bhatnagar, 2009; Croll and Power, 2009; Deshpande and Hansen, 2001; Eirinaki and Vazirgiannis, 2003; Kaushik, 2007; Moe and Fader, 2001; Murugesan and Deshpande, 2001; Russom, 2011; Srivastava et al., 2000; Talia, 2013; Winer, 2001), developers that work on behalf of the organizations for generating and controlling the use of the website that is about to be launched, are using the usability test, which helps them gathering information and measuring

progress of the website in a trial phase (Jeffries et al., 1991). Usability tests are important and add value to the process of development by helping analysing data, creating a more appealing User Interface (UI), and reducing functional problems in the process of redesign the website (Kaushik, 2007). Kent et al. (2011) believed, and agreed with Ginige (1998), that managerial skills must be considered as important for the process, (see Figure 2.3.2). Kaushik (2007), stated that sales must be part of the process and that Web Analytics should orient sales in the development process, additionally, stated that a Web Analytics manager is essential for the strategy that the organization must follow. Kaushik (2007), described the roles of stakeholders in Web Development Process (see Figure 2.3.3), in a precise way; a process of individual and collective effort and a relationship of correlation and independence.

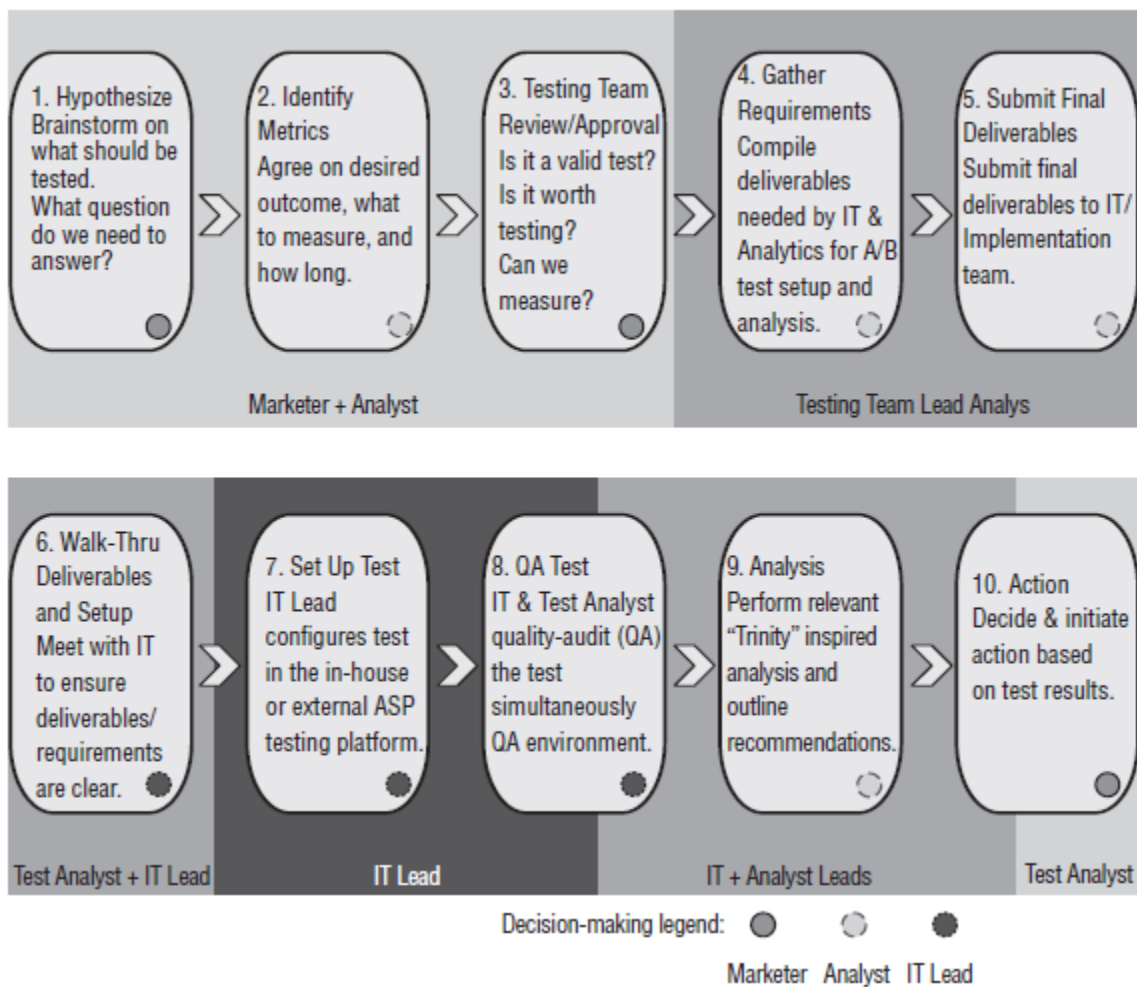


Figure 2.3.3 : Different Stakeholders in Web Development Process (Kaushik, 2007)

Kaushik (2007), describes in his model of Web Development Process the combination and co-operation of various stakeholders, from marketers and analysts, to test analysts and IT Lead, maintaining the relation of combining. Marketers and analysts are working together and making hypotheses on the next step, promoting their hypotheses and suggestions in the Testing Team Lead Analysis, where they in turn submit the final deliverables to IT implementation team, following by Test Analysts and IT Lead, to end up to a Test Analyst to initiate action based on test results (see Figure 2.3.3).

2.4 Data Driven Development

2.4.1 Web Data Driven Development

Journeying through the passage of web design-development process and retrieving the insights user-data is offering we come across to a natural deduction on, how the interaction of these aspects affects the web development. That is conceptualized by the initiative of Data Driven Development. Having the prospect of meeting the goals of the user and by extension website owners, data-driven web development is consisted of all these practices that exploit web traffic measurements, providing feedback with the end result on proliferating the understanding, the control and the improvement of the web interface (Sunny, 2016; Mendes et al., 2001). Besides contemporary parseable analytic engines provide the facility of real-time data insights and the capability of the website - product modification aligned with owner goals and make predictions about its future development process. Sunny (2016) describe the process of data-oriented web sited driven initiatives as a blend of quantitative data collection both with a qualitative approach refinement. Quantitative because crunching the numbers enhance a view on what visitor's value and qualitative because the aforementioned insights are driven through beta-testing systems, direct feedback, and UX testing feedback (Sunny,2016).

The aim of data-driven initiatives is to keep the users and visitors of the website engaged, therefore, the data-driven design disposes of a model tailored for the tracked interacting audiences (Sunny, 2016; Mendes et al., 2001). Personalized UX through content suggestions, personalized notifications, actions steps and Micro-interactions adapted to the user's personalized data are forming a design perspective configured towards the particular data collected by the user's interaction (Laurinaviciu, 2015).

2.4.2 The model and principles to be advised

Understanding the data that will drive and form the design of the view of a website initiative is fundamental. Hinderman (2015) in his book reflects the process of distilling data into understandable representation as data science (see Figure 2.4.1). Reading through his paths, where listing down the information which offered the creation of key representations are driving the development, rendered the insights for a model construction. This model depicts the way user-refined data adds value to the product.

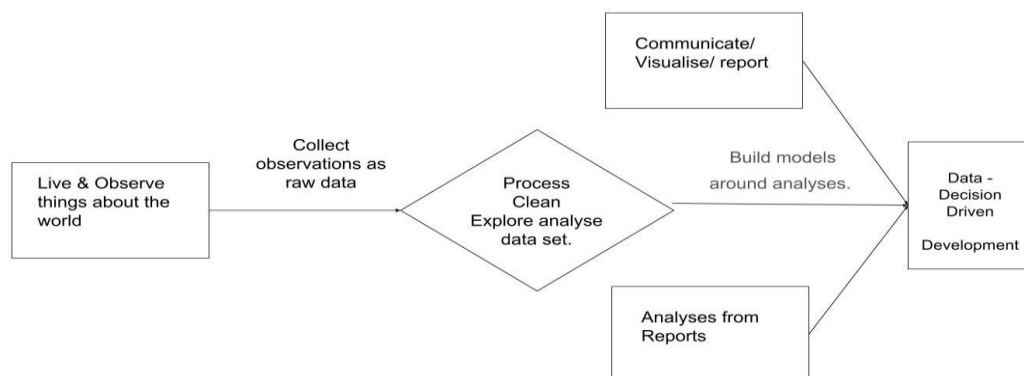


Figure 2.4.1 : Data Driven Process model reflected by Hinderman 's (2015) steps

This oversimplified version about how to collect, parsing and convey information towards the value for our development process reflects the undisputable quality of exploiting the proper information for users and to put in context for the website (Hinderman, 2015). Once having tracked the meaningful information the data driven web optimization underlies to its clear and subtle integration into design for the user.

2.5 Stakeholders involvement in Web Development Process

Escalona and Koch (2004) are stating that the development process is a combination of different stakeholders from business analysts, Web Analytics manager, graphic designers, developers and marketers (Bhatnagar, 2009; Croll and Power, 2009; Deshpande and Hansen, 2001; Eiriraki and Vazirgiannis, 2003; Kaushik, 2007; Moe and Fader, 2001; Murugesan and Deshpande, 2001; Russom, 2011; Srivastava et al., 2000; Talia, 2013; Winer, 2001), to investors, executives, support teams (Russom, 2011), and business owners (Kaushik, 2007). Clifton (2012) describes stakeholders as every individual that is interesting in a project within their company or in another company, with the desire to be part of that particular project process (Clifton, 2012; Croll and Power, 2009). Peterson (2004) confirmed that there are various stakeholders in Web Development Process; additionally, stated that whatever the combination of specializations is, the goal remains focused on understanding the experience of users online and the improvement of it (Peterson, 2004; Jansen, 2006).

2.5.1 Web Developers/ Designers

According to Deshpande and Hansen (2001), developers in the new data-driven development era, are young and full of enthusiasm, rather than those in 1960's firstly appeared. As we mentioned before about the various specializations joined to create a web interface Deshpande and Hansen (2001) are confirming our concern; believing that graphic designers are valuable to development team for creating an appealing functional interface. One of the initial skills that developers need is the ability to define the requirements for the user's need and create a functional website (Escalona and Koch, 2004). The new web era brought a lot more flexibility to developers, where through modern technologies and Application Programming Interfaces (APIs) are able to merge distinct content from different web systems (Chen et al., 2012). According to Pakkala (2012) measuring visitor statistics is a core activity for any website provider and it gives the ability to developers to compare different websites and improve website design. According to Wang et al. (2011), Web Analytic tools supplying developer/designer teams with measurement methods to describe and present user's actions on websites. Likewise, Myers et al. (2000) stated that developers are using tools to create more valuable and rich visual interfaces. Developers that work on behalf of organizations to generate and control the use of the website that is about to launch, are using usability tests, which help them gather information, and measure the progress of the website in a trial phase (Jeffries et al., 1991). Kaushik (2007) consider developers as vital members to the group of people that knows how to analyse and translate Web Analytics. According to Frazango et al. (2014) model of Web Development Process, developers and designers are collaborating in the process by executing the stakeholders' indications.

2.5.2 Web Analysts

Web analysts had reported that through time and usage of the WWW examining the user's behaviour was greater importance than trying to figure out the most suitable interface structure (Chi, 2002). Observing and measuring the users who are visiting the website, developers and analysts are examining these visits and are collecting valuable data through this process, the process of Web Traffic (Peterson, 2004). Furthermore, Moe and Fader (2001), stated that analysts are responsible for the direction of the website, after they examining and delivering data to the organization.

As Kandel et al. (2012) mentioned, organizations use visualization and analytical tools to improve and maintain the customer engagement, inform business decisions, and be careful on potential frauds. Kaushik (2007), supported that Web analysts are a necessary factor for the development process and they are responsible for taking the right decision after data analysis. Kandel et al. (2012), stated that analysts are those who collaborate with marketers (Croll and Power, 2009), department of sales, operation teams, and development teams for a sufficient result, while design reports and visualizations after completing the analysis.

Moe and Fader (2001), characterized analysts as “saviors” of the whole development process, owing to their ability to understand and manage analyzed data. Croll and Power (2009), mentioned that analysts supplying the organization with tempting solutions, due to the fact that they understand signals that visitors send to the website.

2.5.3 Web Marketers

According to Kent et al. (2011), managerial skills are demanded understanding user's behaviour and a sufficient amount of time must be taken into account for gathering valuable data. Moreover, marketers are adding value to Web Development Process by working for the conversion (Winer, 2001).

For Eirinaki and Vazirgiannis (2003), marketers are significantly important to the progress of development process (Kaushik, 2007) and are those who orient the project, always in collaboration with Web analysts. Chaffey et al. (2009), supported the same idea of Eirinaki and Vazirgiannis, additionally, adding that marketers in Web Development Process support customers through the process of an online purchase. Chaffey et al. (2009) mentioned about conversion marketing tactics, analysing these tactics into processes that marketers are able to convert every visitor into a customer, skills which are making them popular and important in Web Development Process. Marketers became part of Web Development Process by the time they started to be interested in data and visitor analysis (Croll and Power, 2009). Plaza (2011), stated that Web Analytics are assessing the online marketing ability to accomplish the conversion.

2.5.4 Web Managers

Murugesan et al. (2001), agreed with Ginige (1998) for the design of the architecture of a project, about a well-structure model that will help developers decrease risks on delivering a project without errors while providing insights to the project management team.

Moe and Fader (2001), found a difficulty that web managers faced in the era of Web Analytics; the fact of the enormous information they had to process and the need for collaboration with web analysts, for understanding data for the purpose of monitoring Web Traffic on the website.

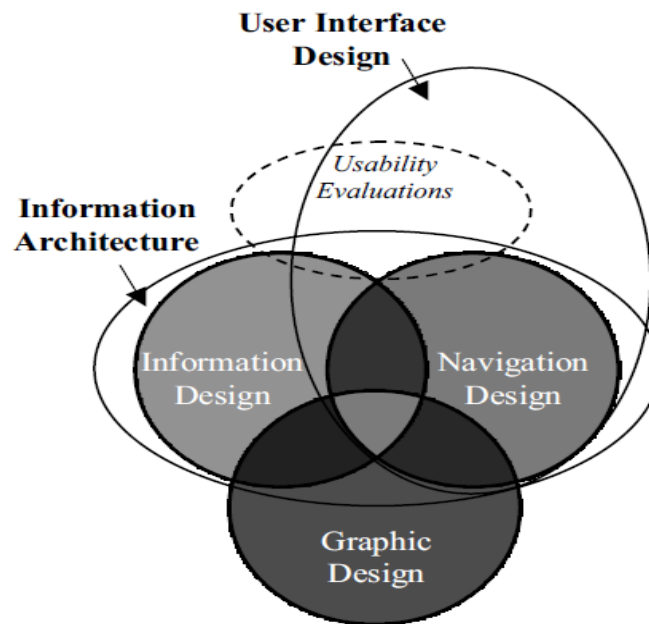


Figure 2.5.3 : Different specialties in the website design (Newman and Landay, 2000)

In the process of the design of a User Interface, developers and designers are having the key role (see Figure 2.5.3), but managers are those who are taking insights from web analysts to make decisions and contact with clients for economic reasons and time schedule for delivering the project (Newman and Landay, 2000).

2.5.5 E-Sales

Kaushik (2007) believed that Web Analytics were more appropriate for the business function rather than the IT function; consequently, sales have more responsibility for the web experience and he suggested that Web Analytics would be more valuable there. Kohavi et al (2002), said that sales are not directly related to Web Analytics, but they use Web Analytic tools to improve delivering projects on time and bring profit to the website (Kohavi et al., 2002; Russom, 2011).

2.6 Theoretical framework

Our suggested theoretical framework is inspired by the literature review, where various stakeholders involved in the process of redesigning a website; while stakeholders are adding value from the insights that Web Analytics provide to the organization. Web Analytic tools are helping stakeholders to manage and analyse the data that arrives at the website from the user's action. Stakeholders are observing through Web Traffic the user behavior and action to the website, and stakeholders are comparing the OKR with the actual KPI that they are interested in. Stakeholders are managing through this comparison to give a better visualization to their user through redesigning the website.

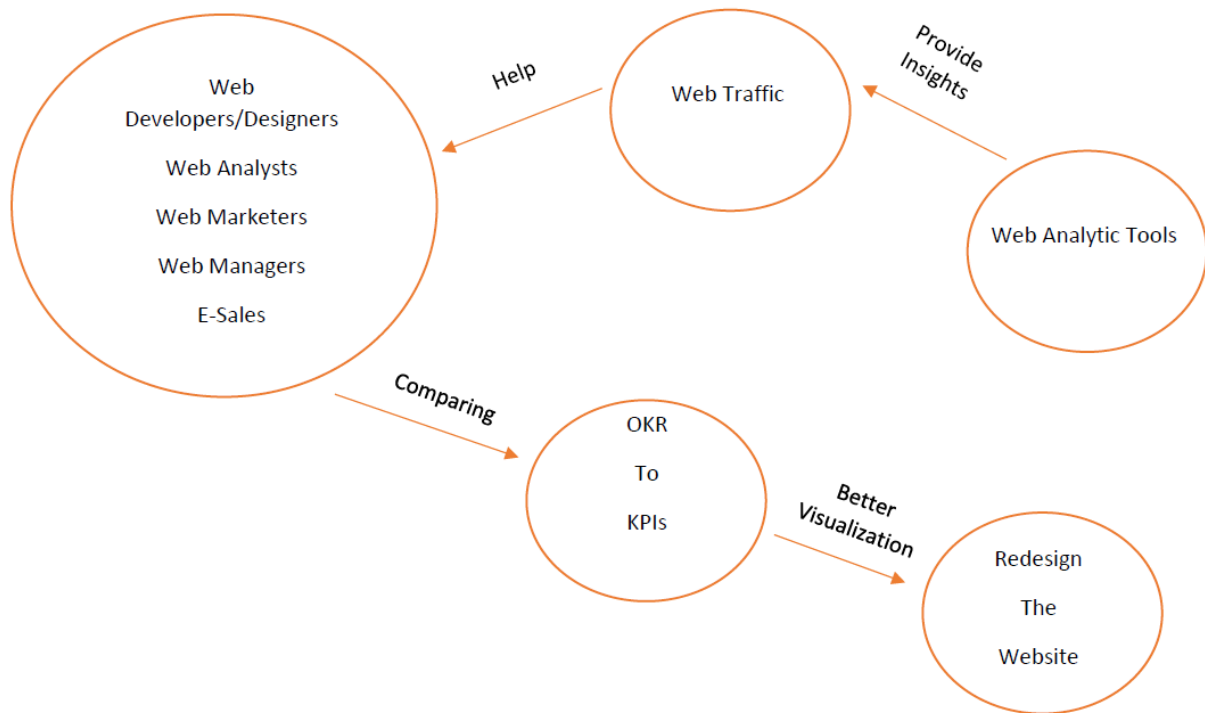


Figure 2.6.1 : Theoretical Framework

3 Methodology

3.1 Research Strategy

Establishing as main plan the segmentation of our study research into the finite of steps we set as the initial step retrieving and gathering relative data around our topic of research. We have pinpointed as our principal endeavor to form our information spectrum around Web Analytics and the way they provide insights towards the design of web Interfaces. Driven by this initiative we fortified our background knowledges relatively with information, issues and applications around the use of Web Analytics, User Experience topics and find out different material related with the concept of Web design and development. Therefore, we addressed on academic literature, research studies and published books intrinsic with the aforementioned principal concepts of inquiry.

Additionally, with the purposes, on one hand to fortify our background with the inquiry of tangible data but also to explore deeper our points of research from its sociological perspective we arranged our incentives through the standards of qualitative research methodology (Creswell, 2012; Bhattacharjee, 2012). Collecting data which will complement our findings stemmed from literature by interviewing people involved with Web Analytics and Web Development in a professional prospect would render us capable of understanding the context of the phenomenon deeply and making sense of the already refined data (Bhattacharjee, 2012; Recker, 2013).

Accordingly, we built our study guide format through the four blocks of theory that Recker (2013) has analyzed in his book *Scientific Research in IS*, with the aim to assign information to the questions of: “What” related to our constructs, “How” related to the relationships of our constructs, “Why” justifying their relationship and finally “Who- Where -When” bounding the constructs relationship conditions. Relatively in the block answering the question “What” was assigned with the frame of questions related with information about Web Analytics, “How” due to their purpose of web development process and “Who- where -when” for retrieving information related with the stakeholders involved in this initiative. These four blocks of theory where the backbone of the structure of our questionnaire enquiries for empirical data.

Alongside for the purpose to dig up the strategies and the relations that coexist behind this sociological phenomenon of different initiatives and interests we attempted to wrap up the stakeholder’s theory postulated by Ed Freeman (Donaldson and Preston, 1995). The theory by itself present descriptively a model of each company as a constellation of cooperative and competitive interests complying the creation of wealth as it’s the *raison d’etre*. (Donaldson and Preston, 1995; Leopizzi et al., 2016). Under the perspective of the company as an organization consisted with various relationships of different individual involved by its internal and external environments under a common view of business ethics corporate governance and corporate social performance relation we tried to sort our own model of Stakeholders related the issue of our topic (Friedman and Miles, 2002). Through this way, we aspired to identify the different stakeholders and to distinct their roles and their relationship towards the holistic view of the process of Web Development in a corporal perspective.

Deductively our research strategy could also be defined by its interpretive character due to the beforehand data collection and the inductively approach place of theory where a phenomenon would be described from the empirically obtained data (Bhattacharjee, 2012). We aspire to implement the interpretive strategy for many reasons firstly because according to literature but also empirically articulated this strategy is well suited for retrieving hidden reasons behind interrelated multi faced social process, which complies with the application of the Stakeholders theory framework (Bhattacharjee, 2012). Additionally, the interpretive research as a theory has the quality of offering the ability of studying context-specific events, in which we can relate it to our case of explaining web data analytic metrics in a discrete approach and their twofold effects towards the web interface formulation (Bhattacharjee, 2012). Finally, we aspire to offer the motivations through the quality of our research for further stimulation to uncover interesting related issues with relevant research questions and intended material for follow-up researches endeavors (Bhattacharjee, 2012).

The credibility of the refinements of the interpretive research strategy is considered by demonstrating the data triangulation which emerges from providing evidence that the data collected during the process of information retrieving through literature is in valid relation with the empirical findings coded or memoed form qualitative research (Bhattacharjee, 2012; Recker, 2013). Consequently, the engagement towards the rigor of our research lies on the accuracy of the matching of the data retrieved from the interview transcripts with the theoretical and methodological audit of data (Bhattacharjee, 2012).

3.2 Research Design

For constructing our research design, we had to follow paths that already been etched by previous authors, and to organized our pattern on answering our research questions (Recker, 2013). Bhattacharjee (2012) drew an effective schema (see Figure 3.2.1) of how the process of a complete research should be held. The research design should be operational, as well as inderdependent with the research method, and following a sampling strategy (Bhattacharjee, 2012; Recker, 2013).

According to Recker (2013), students with the help of supervisors, should be confident and comfort with the research project they choose. For this reason, we are familiarized by the chosen area, due to the fact that both of us we have a solid educational knowledge in computer science and continuing learning in programming languages for creating websites. Additionally, examining Web Analytics is a hot topic for many stakeholders, and not only the development team, as we discover and elaborate in the literature review.



Figure 3.2.1 : Research Design Process (Bhattacharjee, 2012)

3.2.1 Literature Review

In the literature review, we realized that organization's concern is measuring the impact of Web Analytics in their websites; accordingly, to Recker (2013), an important consideration of any chosen topic to examine, is to find a significant amount of articles talking about the area of interest. The satisfactory interviews are establishing literature review prospects (Schultze and Avital, 2011), additionally, as Walsham (2006) stated, initially we should consider to aiming the literature contribution.

Burnard (1991), claimed that there are some stages that researchers have to follow in the process of linked data collected from the interviews with the literature review. He continues, by the connection of collected data and interviews, suggesting to write a different chapter discussing the findings and correlating them with the literature review. We will take Burnard (1991) advice and we would follow the same structure, representing a chapter dedicated to our findings and another one for discussing and connecting our results with the literature.

3.2.2 Interviews from specialists

To enrich our qualitative research thesis, we planned to conduct interviews (Bhattacharjee, 2012) from various specializations related to our subject. Accordingly, we aspired to examine our phenomenon of research from a broad view through the experience of various stakeholders involved in the development processes. So, our targeted group was mostly concentrated on developers (full stack or front end), web analysts, marketers, e-commerce managers and other specialisations that we refined from our literature review that they would provide qualitative information correlated with our purposes of research. Basically, we agreed with the stated theory of Brinkmann and Kvale (2005) that interviews in qualitative research supply to the paper a prospect of "subjective experiences", which is the key role in confirming or rejecting the literature review and obtaining meaningful explanations to theory (Miles and Huberman, 1984), while additionally, qualitative interviews is the prominent media for collecting data (Myers and Newman, 2007).

3.3 Data Collection

The principal method to collect data aligned with the qualitative frame of research strategy is considered to be performed through interviews (Recker, 2013; Bhattacharjee, 2012; Boyce and Neale, 2006). As qualitative methods of data extraction focus on revealing or learning from behaviors, opinions or views towards the real-life context phenomenon of interest, a selected group of individuals distinguished by their competencies in the data interest is called to respond the needs of an interview through a structured protocol of questions (Recker, 2013).

Through this way empirical data is collected by the researcher either by face-to-face with the interviewee or via telephone/video conferencing (Recker, 2013). Due to the needs of each circumstance of interview we were called to perform on both situations, with our subjects of interest. Additionally, theory attributes that there exist three kind of interviews as descriptive exploratory and explanatory (Recker, 2013). Delving through our interview inquiries and the why they were performed, we can distinguish the intersection between the types of Descriptive and Explanatory. Descriptive because in each interview we fostered to provide to the interviewee as much as possible an environment of established information around Web Analytics, web metrics and the Development Process of web Interfaces, with the aim to discuss these perspective in a more subjective and opinion retrieving concept aligned with the responder experience (Recker, 2013; Bhattacharjee, 2012). Explanatory, on the other hand because we endeavored to retrieve from the responder as much as possible his empiricism and real life experience around the relationship of the aforementioned concepts and his point of view due to the contribution value of each independent stakeholder involved (Recker, 2013).

Finally, before embarking the process of data collection we searched and refined carefully our group of interest to be interviewed. We identified the involved members, through their professional reality and status but also the quality of information we would could retrieve (Boyce and Neale, 2006).

3.3.1 Interview Guide

Having considered the knowledge obtained by Bhattacharjee (2012) and Recker's (2013) book about how the requirements of performing a qualitative research on topics related with the Information Systems, we developed initially an interview instrument which was based on the data collection of our case of research. We created a protocol of questions which determined the thematology and the flow of the interview. Although the interview protocol, regarding the progress of questions series, should be followed strictly we decided to perform the semi-structured version of interview (Bhattacharjee, 2012). In which the research has the option to change the structure of the questions without changing their actual content of meaning and their purpose but improvising when necessary needed (Myers & Newman, 2007). The semi-structured interview would be analyzed in greater depth in the following above chapter. The questions which consisted the interview instrument were sorted in different categories those of: Web Analytics, Web development Design and Web Design Processes, the role of the stakeholders included, the Conversion Rate as an index of interest and finally the Data Driven Development. All of the above, but also some introductory questions about the interviewee's status served to set the grounds of a smoothly interview session and but also allowed to probe further into respondent's active participation with comments or clarifications in case of ambiguity (Bhattacharjee, 2012). The interview guide including a small introductory description is provided in the Appendix 1 of this research study archive.

The purpose of all the structure of our instrument, with the introductory questions about their background, their professional activity and their status, ensued a comfortable atmosphere for the conversation to integrate but also gave us the initial insights about the kind of information to expect. By using this method as an initiator for the interview make the interviewee's to be more aware about the context of our enquiry (Kvale & Brinkmann, 2009). Each of the imposed questions were related mostly with the topics of the use of Web Analytics and Web Design Processes. In some particular cases that the interviewee could not answer some of the inquiries, the questions were swapped discerningly with a follow-up question more suitable with the responders' professional status and frame of dexterities. Finally, the interviewee was aware that the conversation would be recorded for transcribing and analysis purposes but also the interviewee was asked whether or not to claim an anonymity status during the data representation in the study (Israel & Hay, 2006).

3.3.2 Selecting the interviews

Qualitative research strategies are reputed for their advantage aspect of focusing directly on their selected topic of interest, which is directly linked with the profile of the subjects who are imposed to the interview process (Recker, 2013). As indicated from Bhattacharjee (2012) but also aligned with our outlook research processes we selected our responded group from various professional responsibilities, related with Web Analytics, Web Design and Development. We aspired to find at least one candidate of each professional perspective and personal involvement with our phenomenon of study in order to obtain the divergent view required for create a credible frame of empirical reference (Recker ,2013; Bhattacharjee 2012). Additionally, in some cases we appended in our selection list of interview subjects, with some individuals recommended personally from each responder during his session of interview as personal estimation for significant dependable knowledge expansion related with our topic. Below you may come across with the Table3.1 containing the scope the subjects interviewed along with their professional profile and related information of the organization's activity in which the subjects are delivering for.

Table 3.3.1 : General information of the interviews and the interviewees

Role in the organization	Years of experience	Organization Activity	Media of interview	Recording	Interview Time	Interview Date
Growth Hacker	1 year	Cloud Technologies	Video Conference Call	No	40 minutes	24-04-2017
Front-End Developer	4 years	Software Company	In Person	Yes	60 minutes	29-04-2017
Software Engineer	5 ½ years-	Software Company	Video Conference Call	Yes	62 minutes	24-04-2017
Web Analyst E-commerce marketer	1 year	Railway operator	Video Conference Call	Yes	60 minutes	07-05-2017
Digital Marketing Executive	6 years	Business Intelligence Vendor	Video Conference Call	Yes	60 minutes	07-05-2017
Digital Marketing	2 years	Freelancer	Video Conference Call	Yes	57 minutes	05-05-2017

3.3.3 Interviewing

Our interview instrument as seen on the Appendix 1 is based towards a flow of consecutively questions with linked structure and thematology. Once we approached, the candidates for interview, through mail and personal enquiry and we confirmed their participation, we have sent them the questionnaires with the purpose of better preparation for their answers and to strengthen their certainty about the topic on research. The mean time of duration of the interview was estimated approximately around 45 to 60 minutes. Having scheduled an appointment with each interview either in person or in video conference - call we conducted the interview in some cases in English language but others in Greek. As we decided to follow the structure of the semi-structured interview, which include the implementation of script questions and improvisation by the interviewer during the time-length of the interview, we initiated our inquiries from more general topics for the smooth integration of the interviewee (Recker 2013). This effected an establishment of a two-way communication and a good pace all along the interview, where answers of questions were answered directly but also great insights that were reflected amplified the rigor and the content of our research (Recker, 2013). Additionally, this not open everyday conversation nor strictly closed questionnaire established the right environment of fluency that made us possible to extract the maximum extent of information through asking custom questions on the answers on the responder (Kvale & Brinkmann, 2009). Nevertheless, regardless the open structure character of the interview we confirmed that the interview was driven through the passage that was pre-scripted in the protocol, with the purpose of collecting data from all of our interdependent topics. (Kvale & Brinkmann, 2009).

The conversation between the interviewer and the interviewee was recorded either by a specific software which was deployed simultaneously with the video conference program, in knowledge and affirmation of the responder, either by memoing and noting by one of the two researchers. Additionally, in one of our in person interviews the responder, with the purpose to explain better the relationship and the role of each stakeholder during the processes of Web Development requested and acquired written material to prescribe information. Which was used upon reflections through the stakeholder model and theory we elaborated. In a sense that enforced the data Triangulation which refers to pursuing and relating multiple sources of evidence about the phenomenon of the stakeholders involved with explaining the change of web interface through the use of data analytics (Recker, 2013).

3.4 Data Analysis

In qualitative research, knowledge is composed of the aforementioned steps, of research strategy, research design, and necessarily data analysis (Burnard, 1991; Lacity and Janson, 1994). In data analysis, the characteristics that a researcher ought to have is analytical skills, understanding and investigate, and be creative (Bhattacharjee, 2012). Recker (2013) mentioned that data analysis has different stages, from testing, classifying, coding and at the end combining for conclusions. As we mentioned in the research design our plan to enrich our paper was to conduct interviews, to confirm or reject the literature review with the discoveries. An interview is concrete for researchers because they record and transcribe (Recker, 2013) the interview, use it as evidence and make the reader or the examiner to easily go through the process.

3.4.1 Transcribing

An important aspect of recording an interview rather than taking notes is because researchers can easily search for things that were not clear in the first time, and make it simpler when is about to transcribe the interview (Lacity and Janson, 1994; Walsham, 2006). It is easier for researchers to think of transcribing without anxiety when they already know the type of research they will study (Burnard, 1991). For our qualitative research, initially, interviews were stated as an important aspect, so the transcribing and the coding were interwoven meanings.

With the method of the transcript, researchers are covering the need of delving into data collected (Burnard,1991). We used the method of transcription on our interviews. We had an interviewee that did not want to be recorded, for that reason, we kept notes; following we tried to implement our notes and maintain a transcribing structure.

3.4.2 Coding

A qualitative technique of coding (Bhattacharjee, 2012; Schultze and Avital, 2011; Whalsam, 2006) is needed for the process of analysis after conducting interviews and the data collection. According to Recker (2013) coding is the step where data are examining. Additionally, coding can be subjective, due to the fact that the researcher generates the scenario of which concepts to focus on (Whalsam, 2006).

We agreed with Whalsam (2006) about the subjectivity that coding technique has and we managed to make a table mirroring the aspects of great significance and delivering the data we collected after transcriptions. Recker (2013) added that with coded data helps the researcher for further analysis. For a better understanding of our findings, we agreed to create tables with coding and presented to our thesis. With this method, we wanted to ensure that we covered all the potentially important parts of our interviews and also as Recker (2013) stated to enrich the coding with validity and reliability.

For our readers and for our own convenience, we coded the role of the interviewees in alphabetic letters (see Table 3.4.2.1), while also some important aspects (see Table 3.4.2.2) we are examining in this thesis. It was necessary to know the role of our interviewees in the organization (see Table 3.3.1). We will also follow the same process of the elements of great significance (Whalsam, 2006) for our thesis. We are studying about how Web Analytics are used and translated by various stakeholders in the organization who are involving in the development process of creating a website. The options of having demographic information from our respondents, such as age, gender, income, education level (Bhattacharjee, 2012) was not important for our research. Education level though could be important but also easily can be characterized as bias, because working experience does matter for our research.

Table 3.4.1 : Attribution role to the organization

Attribute role to the organization	Coding Name
Growth Hacker	A

Front-End Developer	B
Software Engineer	C
Web Analyst/E-commerce marketer	D
Digital Marketing Executive	E
Digital Marketing	F

Table 3.4.2 : Description Information

Description Information	Coding
Working Activity of Respondent	WAR
Web Analytic (tools using- General info)	WAT
Key Performance Indexes & UI related	KPU
Web Development Design Processes	WDP
Role of Stakeholders	ROS
Conversion Rate Index	CRI
Data Driven Development	DDD

3.5 Research Quality

In this session, we will write about the research quality categorized in validity, reliability, bias and ethics. The quality of the process in a qualitative interview influences the quality of data (Myers and Newman, 2007) and strategies that the interviewer will follow during the interview.

3.5.1 Validity

The main aspect of implementing our study research with the interpretive concept in it was rigor on internal validity and the reliability achieved (Bhattacharjee, 2012). Our main goal was that the practices implemented in our research to provide a framework credible ensuring the accuracy, the trustworthiness and the objectiveness of our refinements (Norris, 1997). Furthermore, the internal validity of our research is supported by the extent of the causal propositions reflected in our review of literature information which was supported by the particular setting

of the link between cause and effect through the extraneous collect from the interviews variables (Recker, 2013; Norris, 1997).

We try to enact high validity by offering great complex of information in our literature review and a diverse professional background of interview candidates throughout the empirical data collection. Therefore, our survey instrument was created from cross checked validated material from academic literature and published books related with Web Analytics, business strategic incentives towards the value created by the web and user experience - web design refinements around the topic of web design and development. Additionally, the confirmatory character of the empirical findings strengthened on process the instrument validity (Recker, 2013).

The number of interviews was regulated according to our need of proof comparing with our established background. We aspired to conduct as much as possible research interviews with the aim to enhance the credibility of our theoretical findings and struggle create demonstration of data triangulation across our meticulously collected data which supported the credibility of our interpretive research (Bhattacharjee, 2012).

3.5.2 Reliability

Validity and reliability are concepts linked together for quality in a research and in an interview. We examined the validity of the research quality above, now we will focus on the reliability of the research. For gauging reliability, the constructs should be repeatable and accurately (Bhattacharjee, 2012; Recker, 2013). Reliability acquired while the process of examining and testing will give to researchers the same result every time they are exploring it (Bhattacharjee, 2012). Reliability should be independent, away from any bias and objectivity for the people include in the research process (Recker, 2013).

In Information Systems research, reliability is one of the various important aspects, connected with performance, usability, security and sustainability (Hevner and Chatterjee, 2010). We created semi-structure questions, due to the fact that, we would be more organized and will add reliability to the interviewee to have confident interviewers Bhattacharjee, 2012; Recker, 2013).

In the interviews, Myers and Newman (2007), said that a matter of collecting nonreliable data could be the lack of time or the pressure to held the interview. We will agree with Myers and Newman (2007), adding that for organizing interviews time has to be allied; gathering information about companies of interest, find the right person relevant to the research, contact them, waiting for confirmation, all are aspects that are part in the process of doing an effective interview. We tried not to see time as an opponent and we started early to search for companies and potential interviewees. We needed to manage confirmations and rejections, additionally, we needed to feel confident and to get through rejections, quickly. Expertize interviewers are the key for a well-structured interview with reliable results (Bhattacharjee, 2012).

3.5.3 Bias

Bias from its terms of definition reflects a subjective placement of an approach towards the explanation of a particular phenomenon. But considering unbiased, an interpretation which is due to a crosschecked sampling process of information collected from multiple sources is still under question towards the ensurement of the quality of the information. Bhattacharjee (2012)

implies that researches using the interpretive strategy as a research method on the verge of been characterised as erroneous and biased due to the subjective nature of qualitative data collection. Although we consider that this peril is compensated with the method of data triangulation by concentrating meticulously information from different sources and analytic procedures. Likewise, cross referencing the resourced data with processes like interviews and their thorough verbatim transcription, credible and accurate records either by edited academic literature or even refined data from other interviews but also clear notes on theoretical decisions, amplifies the unbiased character of our endeavour research (Bhattacharjee, 2012). Accordingly, we recognise and struggled to overcome the challenges of interpretive research off falsified premature assumptions due to little data and to balance to bridge this gap by the data collected qualitatively by the interviews (Bhattacharjee, 2012). Before we performed any attempt to collect data, we researched well enough the material around our phenomenon of inquiry both from its technical, business but also social perspectives but we maintained our mindframe open to adjunct and reconcile our knowledge through the contribution of our inferences (Recker 2013; Bhattacharjee 2012). Finally, we acknowledge the bias generated by a non-face-to-face interviewing that we were about to conduct. The absence of visual cues performing the loss of contextual and nonverbal data is meant to deliver a compromising in report and potentially biased interpretation of response (Novick, 2008). Therefore, we adapted the flow of our interview with repetition of key question, prompts and motivation for the responder with the placement of the same question alternatively and establishing as much as possible a comfortable and easy-flowing environment following the interview frames. Finally, our interview guidelines were evidence-based, nevertheless during of it we did not formed our minds due to our predefined knowledge or hidden “agendas” derived study findings with the aim to overcome a cognitive conflict with the interviewee (Bhattacharjee 2012; Novick 2008)

3.5.4 Ethics

Ethics is a word deriving from the Greek word *ethos* (ἦθος), in other words, can be characterized as virtue or morality. The fact that we cannot directly relate the word *ethos* to virtue is because for our educational background in philosophy, made us contemplate a slightly difference in the words meaning, presenting *ethos* as a virtue. It has been many years, since first mentioned the word *ethics* or bliss from Greek philosophers, Socrates and Plato (Annas, 1981), describing *ethos* as a meaning beyond scientific explanation, more oriented to touch people’s pride that for many were precious.

Several people are wondering why to talk about ethics in a research paper. Bhattacharjee (2012), presented some of the reasons why ethic should consider as a strong element; many have operated science in such unethical way to serve it to their advantage, acting against the scientific ethical laws. For Recker (2013), ethical behavior characterized by being responsible, reasonable for decisions, loyal, understanding and respecting laws and hierarchy.

Security and confidentiality are meanings that Myers and Newman (2007) believed as ethical elements while conducting a qualitative interview (Bhattacharjee, 2012). In our interview process, some of our interviewees wanted anonymity, while also not been recorded, fact that we respected and followed the rules that the interviewee demanded (Myers and Newman, 2007; Schultze and Avital, 2011; Walsham, 2006). Continuing supporting ethics, we translated every interview in English, which is the official common language globally and the official language for the master program, presented in our scientific paper for gaining readers confidentiality.

4 Empirical findings

4.1 Introduction

The fourth chapter of this study includes our empirical findings refined from persons involved with our cause of research. We conducted six (6) semi-structured interviews to collect our data and through the process of presenting our empirical results we will make estimations about the theory we investigated (Bhattacharjee, 2012). Our frame of data will be presented with a short descriptive finding analysis with the topic of particular inquiry and followed by a table of content incorporating the question and the abstract of key findings collected. All the empirical findings are presented towards its linked content with our instrument of research. Apropos each thematic module of this chapter projects the implementation of the coded data of the conducted interviews towards the main concepts that build our theoretical framework. Also for the purpose of assigning our related information to our subjects of interview we will use the coding from Table 4.1.1, which implies the stakeholder's role within the organisation.

4.2 Understanding the concept of Web Analytics

For a better understanding of the meaning of Web Analytics, we asked our interviewees to give us their opinion about how they understand the concept of Web Analytics. Our interviewees tried to describe the importance of Web Analytics from their perspective and the helpfulness of the Analytics and their implementation in the organizations. According to interviewees responses, Web Analytics have critical importance to decision making (C, 2017; D, 2017; E, 2017), give important insights about users' actions (B, 2017; C, 2017; F, 2017), help organizations examining, monitoring, and calculating data (E, 2017), and finally, give the ability to create innovative ideas (A, 2017).

Table 4.2.1 : Web Analytics meaning for each Interviewee

What does it mean for you Web Analytics?	
A	<ul style="list-style-type: none"> • Smart ways to grow an idea
B	<ul style="list-style-type: none"> • Important insights for users' actions on the website
C	<ul style="list-style-type: none"> • Absolutely important • Critical to inject them in various pages • Provide information that the client requires
D	<ul style="list-style-type: none"> • Examining Data • Monitoring Data • Calculating Data • Profitable results for decision making
E	<ul style="list-style-type: none"> • Important for decision making • Important for digital appearance

F	<ul style="list-style-type: none"> • Helpful insights for efficient user interface
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4.3 Web Analytic tools entailed in data collection

We are following the structure of our purpose that we will examine Web Analytic tools and the incentives that provide stakeholders with insights that orient their decision making. Therefore, we asked our interviewees to talk about Web Analytic tools and to demonstrate the specific tools that they use or are existing in the market. Dependably of their specializations, the tools serve different purposes. We asked them to give us a brief description of how Web Analytic tools are helping them to translate collected data and turn them into revenues.

According to our respondents, there are various tools in the market, some of them are, Google Analytics, Hotjar, WebTrends Analytic tool, Adobe Analytic tool, Yandex Analytic tool, session campaigns (Facebook advertisements, Google AdWords, these considered more for advertisement), R-statistic tool, and Dart and Tealium tool. For most of our respondents, the prominent analytic tool is Google Analytics, because is being the most popular and easy to use (E, 2017), it can be taught by any individual (C, 2017), and is easy to integrate it to the website of the enterprise (D, 2017).

According to Respondent D (2017), Google Analytics are helping them with the collection of data, but for her, the most useful tool is the R-tool, which is a statistical tool helping her out to present graphs in a better visualization. For Respondent A (2017), AB testing deemed with importance for recognizing the users' actions (E, 2017). Respondent E (2017) is using session camp as an extra tool for analyzing data and recognizing fault reports. We will elaborate in detail and with examples of our respondents in next subsections.

Table 4.3.1 : Important Web Analytics Tools

Which are the Web Analytic tools that you use and consider as important for redesigning the website?	
A	<ul style="list-style-type: none"> • Use of Google Analytics, worked before with Hotjar and Yandex • Use of AB Testing
B	<ul style="list-style-type: none"> • Universal software giving feeds to Google Analytics
C	<ul style="list-style-type: none"> • Mostly with Google Analytics • Progress on implementing Dart and Tealium tool.
D	<ul style="list-style-type: none"> • Use of Google Analytics but my tool is excel • R tool (statistical tool)
E	<ul style="list-style-type: none"> • Interest in Google Analytics • Use of AB Testing • Session camp • Hotjar
F	<ul style="list-style-type: none"> • Mostly Google Analytics

4.4 Presenting important KPIs and metrics

This part contains our findings around our endeavor to concentrate information around the metric Indicators that are set as a point of interest by our interview subjects throughout their professional activity. The majority of the subjects (four of six) have been involved directly with the Key Performance Indexes (KPI) and reflected us a similar pattern in the content of their responses around which they value important relatively their business involvement. Accordingly, most of the individuals who were involved in the Marketing Strategic or Web Analytic processes referred mostly three Key Performance Indexes as of major interest: bounce rate (which is also mentioned as exit rate), page visit per session and conversion rate. Thus, the reports of individuals involved in the development spectrum of the stakeholders related with web Development process, as full stack or front-end developer, made their reflections towards KPI's who measure mostly the user behavior and actions in the perspective of the website. "We implement as enterprise some analytics in the key product that we want to take info that with small changes can be modulated for others as well" (C, 2017) which projects the attempt of the enterprise to track as much as possible data derived from users after the development. Although most of all of our interview subjects agreed that KPI's are not something predefined or stable due to business demands flexibility. "Imperatively from the perspective of my job position (Digital Marketing Executive) It depends relatively to my customer" (E, 2017) in which the subject here implies the use of KPI due to the uniformity of goal implementations. Another intersection of opinions reflected.

Mostly from all of our interviewees and related with the design of the interface was the need to track the device that the website was operated as a Key Index. Due to the purpose of design and that can be related it with aforementioned KPI as bounce rate or conversion rate, "...users for example are using our website mostly from the mobiles for that metric and only could render an enterprise to focus their actions towards the development ..." (C, 2017). Finally, the most prominent Web Analytic tool to integrate the KPI metrics was mentioned from all our candidates to be Google Analytics tool.

Table 4.4.1 : Presenting important KPIs

What are the Key Performance Indicators you take concern and are mostly related to your professional activity ?	
A	<ul style="list-style-type: none"> • Bounce rate • Cost Per Acquisition
B	<ul style="list-style-type: none"> • KPI depends on the goal of the Company
C	<ul style="list-style-type: none"> • these are determined by the customer • on the object and the cause of the website • clicks per object • prices • demands
D	<ul style="list-style-type: none"> • Session visits • Conversion rates

E	<ul style="list-style-type: none"> • Depends relatively on the customer • Conversion rates • Return of revenue Average order value
F	<ul style="list-style-type: none"> • Bounce rate • Pages per session • Conversion Rate

4.5 Prominent elements for Web Development Process

Following, after collecting the data for Web Analytic tools, we will describe with brief description, our interviewees responses of the benefits they get from analytic tools and how they implement them in Web Development Process. Our respondents gave clear answers to the benefits that they are facing with Web Analytic tools. With Web Analytic tools is easy to track users' actions, tracking what content the user is looking at the website, and where he was navigated (B, 2017; F, 2017); analytic tools are helping to distinguish the zones of user's interest (F, 2017). Statistical tools like R, help companies as Eurostar (D, 2017), to clean data and convert them into useful data, additionally, R-tool is useful for predictions, and as a statistical tool making graphs and presenting various projects. Web Analytic tools are valuable for redesigning interface because it is easy to see things from the foreground, to check if something does not use appropriately, or avoid long processes with unnecessary steps (C, 2017). Respondent C (2017) also believed that Web Analytic tools are helping marketers with promoting digital sales. Respondent A (2017) stated that UI and UX are impossible to know how the website will go without the help of analytics' feedback; for that reason, Web Analytic tools and AB Testing are important to help people who involve in Web Development Process to have a better view of the progress of the website, before officially launch it. For respondent E (2017) the meaning of using Web Analytic tools is to answer the question of "what" is happening to the website; while also he believed that Web Analytics is "the tool of the present and definitely of the future".

Table 4.5.1 : Web Development Process for various Stakeholders

Can you give us an insight of how Web Analytic tools help you organize and translate collected data into profitable data?	
A	<ul style="list-style-type: none"> • AB Testing help the stakeholders that involve in Web Development Process to have better view of the website before launch it • AB Testing controls the statistics of the website
B	<ul style="list-style-type: none"> • Clients want to record the actions of the users • Actions, for instance, how many times he pressed the button, if he pressed it, which button he used, how long he spends time, etc.
C	<ul style="list-style-type: none"> • We want a hash key value and a hash map to retrieve the insights for our code and from there we form templates and reports for more accurate and concrete extrapolations • Web Analytic tools help marketers with promoting digital sales • Analytics is the only way to see design patterns for the future perspective of the website
D	<ul style="list-style-type: none"> • Web Analytic tools to clean and convert data

	<ul style="list-style-type: none"> • R statistical tool for predictions, graphs and presentations of various projects
E	<ul style="list-style-type: none"> • Web Analytic tools help them realize what is happening to the website • Session camp help in solution of debugging.
F	<ul style="list-style-type: none"> • Track users' actions • Track what content users are looking at the website • Where the user navigated with his/her mouse • Server to distinguish the zones that the user is concerned about the website • Implement the insights around the elements that the organization consider most important

4.6 Involvement of various stakeholders in the design process

In this step of our findings we try to concentrate our refinements towards the full spectrum of the stakeholders involved in the Web Development Process towards the business perspective. Due to our research purposes, at revealing the integral spectrum about the actual reality of professionals involved with web development and the strategic advantages that can be obtained from Web Analytics, we endeavor to retrieve our findings from four major categories: Developers, Data Analysts, Marketers and the newly emerged profession of Growth Hacker. We revealed that most of them reported the same information around the topic of who is consisting the list of people incorporated in the stakeholder's framework of web development. ". the UX and graphic designers.... marketing, sales, finance, management, IT.... old school, old fashion if I may say, that Web Analytics are included in the IT department." (C, 2017; E 2017) was mentioned to be the traditionally recognized basis. However many expressed the concept that the spectrum of the stakeholders is depending in one hand in range of the enterprise, "Its different according the length or the range of the enterprise, but if we are talking for example for a big hotel , the basic one is the revenue manager who is in charge of the different channels" (F ,2017), in the other hand on the kind of the customers that the project is referring to "last trend that I may find in small groups of customers (in terms of agile customers) analytics have their own team and they have their own position among marketing, sales, finance, management, IT etc." (E,2017). Additionally, one of the major roles in the development or optimization of web interfaces according to developers is performed by the Product Owner of the project or other wisely interpreted as the Business Analysts, "Firstly I could denominate the product owner, which in our case is the business analyst and to whom after something is developed, passed all QA tests etc. is got to be shown in the product owner and the stakeholders who have to approve it and the customer" (C, 2017). Apropos the web analyst contribution towards the web development of ecommerce websites process the term of CRO (Conversion Rate Optimization) managers was mentioned which is considered to be as specialization for strategic planning of website development "which consists of 3 web analysts, 3 CRO (Conversion Rate Optimization) managers, and the manager (general), and my occupation is to build reports, weekly or monthly, or ad hoc, analyze data relevant in different departments of the company, either help in marketing or business strategy, or business planning, additionally, to product owners and mostly with CRO managers, with them we do the research and they do the experiments." (D, 2017). The CRO is also mentioned to be responsible for the final visualization of the website towards its goals and expectations. "How the website would look alike is the responsibility of the CRO's. "as E (2017) interviewee mentioned. From the perspective of the growth hacker the ecosystem of the website process stakeholders is primarily based around the sales which is reflected by the

customers and the sales department (A, 2017). The Project manager and the rest of the technical modules of the enterprise, as the Content manager, Web-graphic designers, developers, offer the technical know-how and the support for the customer requirements (A 2017). Finally, from the developers side we can discern an environment of stakeholders which is consisted relatively to the individuals involved with the technical aspects of the web development process like QA's, Testers, Scrum Masters, product owners, data analysts in different stages of the delivery and delivery manager's members of the HR team contributing for the development process (B, 2017).

Table 4.6.1 : Stakeholders in Web Development Process

Who are the different Stakeholders involved around the development or the optimization/maintenance of the website's goals?	
A	<ul style="list-style-type: none"> • Project managers /Sales department • Content manager • Web designer/Graphic designers • Front end Designer and back end developers • Sales
B	<ul style="list-style-type: none"> • UX , UI Designers • Data analysts • Developers • Testers • QA's • Product Owners • Scrum masters • Customers • Delivery Managers
C	<ul style="list-style-type: none"> • QA testers • Product owner- Business Analyst • Graphic- UX designers • Customer • Developers (Back end- Front End)
D	<ul style="list-style-type: none"> • Developers • Digital team • Ecommerce team (Web analyst, Conversion Rate Optimization (CRO) managers • Marketing/Business strategy department • Product owners
E	<ul style="list-style-type: none"> • Web Analytics Department • Marketing Department • IT department • E-commerce team • CRO managers • Finance Department • Sales Department • Customer
F	<ul style="list-style-type: none"> • Performance Marketing agency • Outsourcers (web developer, graphic designer etc.) • Data scientist

	<ul style="list-style-type: none"> • Marketing • CRO • Finance Department • IT manager (in house)
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4.7 The importance of translating user actions into conversion

This section is concerning the deduction of information collected about our enquiries on the conversion rate index that analyst set as point of interest to measure the efficiency of the website. Our initial intention was to draw conclusions about how user conversions are perceived from our individual interviewees and then distinguish their important link with the user actions and the assigned goals of the website. In terms of the theoretical terms of the meaning of what is conversion most of the interviewees opinions converged. The major insight among the definitions reflected was postulated from F (2017) interviewee as “Conversion rate is the percentage of the users that done one action like whatever you desire towards the sum of the users of your website, or in particular page, or ad..”. Accordingly, most of the individuals who were involved with marketing and web analysis incentives had reflected their opinion about the action of the users towards the website’s goals alike. E (2017) subject mentioned “Conversion rate has to do with the action that is the result expected from the user, the proliferation of this percentage is unbreachable connected with the success of the revenues of the enterprise” which revealed the actual bond of conversion with the return on Investment strategy processes. In the same length was the interpretation of conversions from the developer’s perspective that attributed the essential aim of them as the value provided from users translated as monetary or nonmonetary (C, 2017). The conversions of the user are directly related with the actual incentives and goals of the enterprise and the actual purpose of achievement from each user. For example, B (2017) stated “Depends what is your goal as company. If you are a company that wants to gain revenues, and you want to have more users or to sell products, you care more about quantity. If you are a NGO then you care about the quality of your users.”. Showing the alignment with the aforementioned statements from the marketing and developers perspective. But in general, terms the conversion rate is estimated by measuring the amount of the users of performing the action that the frame of the website’s purposes is expecting from him to do.

Table 4.7.1 : Translating Users' actions into Conversion

How Conversion reflects value for you and is translated on the website?	
A	<ul style="list-style-type: none"> • Cost per acquisition • The goal of the web site
B	<ul style="list-style-type: none"> • Depends what is your goal as company • element that measurements will follow and make comparisons, with the metrics give you feedback of what you chose to measure
C	<ul style="list-style-type: none"> • Main goal user converted and buy

	<ul style="list-style-type: none">• Actions of user serving the occasion of development• Accomplishing the main aim of the company's sales dept.
D	<ul style="list-style-type: none">• the percentage of success! Relevant to the action pointed as most important• Comparing percentages of conversion rate to determine if website works well or not
E	<ul style="list-style-type: none">• Action result expected from user• Has a multimodal character has to do with many things• Micro conversions signify that latterly a macro conversion is about to occur
F	<ul style="list-style-type: none">• people targeted with a specific key to perform action for specific enquiry• Conversion rate combined ROI• techniques intrigue or drive the user to integrate in a specific path that introduces micro-macro goal

5 Discussion

5.1 Introduction

The following chapter of our study is the fifth in the order and is consisted by a meticulous deduction sourced from the insights gained both from literature and data refined from empirically conducted interviews. The thematology structure is maintained consistent with the previous chapter, albeit in this chapter the reader would come across with the combination of knowledge already introduced but incorporated with some of the researcher's reflections towards the whole phenomenon of study. Therefore, this part of the analysis is fragmented into seven (7) parts. Consisting the deduction of the whole research and several visualization models - constructs that eventually would provide the base to this research contribution with the Framework model of the Web Development Process and the Stakeholders involved introduced in 5.8 part.

5.2 Understanding the concept of Web Analytics

The terminology of Web Analytics is undoubted of major importance and their worthwhile insights are adding value to the process of development. Peterson (2004) elaborated the concept of Web Analytics with a noteworthy statement, mentioning that the goal is to understand the online experience in a way that it can be improved. All our respondents agreed with Peterson's statement and added value to that, by elaborating their online experience of Web Analytics. With Web Analytics, organizations can grow ideas in smart ways (A, 2017), and have important insights for users' actions (B, 2017; C, 2017; F, 2017), for instance, provide information about what users do on the website, if they purchased or subscribed, if they converted from visitor to customer, how to improve user interface, and information about the clients' requirements (Croll and Power, 2009; Eirinaki and Vazirgiannis, 2003; Kaushik, 2007; Kent, 2011; Moe and Fader, 2001; Srivastava et al., 2000). We clarified that the development of a website consists of many parameters, but one of many considered as a significant element is Web Analytics and the feeds that give to the organizations.

The importance of collecting data mentioned and supported by D (2017), through the process of examining, monitoring, and calculating data for profitable results on decision making (E, 2017); additionally, Kohavi et al. (2002) emphasized that a crucial aspect of the analysis process is collecting data. Along with the authors and interviewees, we will agree with the importance of collecting data that will upgrade the results of your interest. We collected data through interviews, which was one of the most important aspects we had to complete because through the analysis and the elaboration of data we enriched our paper and we became capable of conforming with the literature review.

5.3 Web Analytic tools entailed in data collection

To continue from the theory of Web Analytics, we delved into the practical side of the organization's usage with Web Analytic tools for translating user's actions. This is the actual reason

of organizations gravitated toward Web Analytic tools, remaining faithful to the purpose of understanding user's behavior. We will discuss the Web Analytic tools that our interviewees are using to track users' actions and improve UI. We will delve into details about how Web Analytics affecting the Web Development Process in a subsequent subsection.

According to our respondents, the majority of organizations are trusting and using Google Analytics, as the key tool for their redesigning decisions. Following to the process, Web Analytic tools supply the organizations with insights for users' requirements and actions. Continuing, the organization is using tests, like AB testing or statistical tools, to examine website's reaction in a trial phase, simultaneously, using tests to help stakeholders promote digital sales.

Specifically, Google Analytics and AB-testing, helped our interviewee A (2017) to discern the user's needs and to translate the insights for the organization's advantage. Respondent F (2017), described a similar process with his organization examining their users' actions through a structured funnel. They implement Web Analytic tools into the process and gauging the percentage of people who are leaving the pages without converting. For Respondent F (2017) Google Analytics are the tools helping them to track the user and improve the UI. We found response of Interviewee B (2017) similar to the responses that A (2017) and F (2017) gave. Respondent B (2017) stated that stakeholders, which in his occasion are the clients, are using Web Analytic tools to record the user's actions. For B (2017) to succeed that he uses a software that gives feedback to Google Analytics. Some of our interviewees, are advising Google Analytic tools, but in a great combination with statistical tools, they have better results. For instance, Respondent D (2017), referred to Google Analytics as the tool of significant importance, but in combination with the R-statistical tool, which helps the company to make predictions, graphs, and present various projects. Despite the similarities of our respondents about advising Google Analytics, many of them are not finding this tool sufficient. Respondent E (2017), described an occasion where the tool, session camp which they use in their company, helped them to debug a problem in their code, subsequently, solved the view of their website. The tool, session camp, was capable of tracking the cursor in motion so it made everything simpler for technicians to discover the actual problem. Google Analytics mentioned from Respondent C (2017), having it as a primary tool for advising the company for decision-making, believing specific analytic tool will give a helicopter view and first purposeful estimations.

We can make an attentive first estimation of which Web Analytic tool is dominated in the market, or at least this came as a result of our collected data. Google Analytics are prevailing in the market of tools that help organizations to improve their websites. But on many occasion, Google Analytics was not the only element that stakeholders advised to redesign the UI of the website. As Kandel et al. (2012) stated, that despite the fact of skillful stakeholders, a company needs an effective tool to enrich and empower the progress of tracking the user and inform business decisions.

5.4 Presenting the importance of KPIs

During the course of our research, we have demystified the importance of the Key Performance Indicators, in capturing and visualizing the numbers of websites performance (Clifton, 2012). Initially, we perceived the KPI's as a simple indication that renders an easy way to encode a language of communication in terms of the strategic goals of the company. But then we came up with the concept that there is not a format or standardization in applying these measures and

then attributing to standard analytic products to reflect to. With a major factor of reforming the needs and the functionality of it accordingly, the customer (E, 2017; C, 2017; F, 2017; Weber and Thomas, 2005; Clifton, 2012). Each business incentive forms its strategic goals according to its needs and so their points of interests are reformulated relatively to their performance. Accordingly, we can interpret the relation of the aforementioned with the model provided by Weber and Thomas (2005), given in Figure 2.1.5, with the statement made from (E, 2017) that the KPI are designed with the relative goal the meet customer needs. Whereas the performance requirements are formed from the stakeholders who are involved with the analysis and the strategic planning of the operating or maintenance practices (E, 2017; F, 2017; Weber and Thomas; 2005). Through literature, we refined that each stakeholder is reflecting his points of interest with the process development through KPI (Clifton, 2012). By extension, we encountered with the evidence provided by freelancer or agents collaborating data analysts that the KPI's utilized by different stakeholders differ relatively with the type of the company who would implement the services of them (E, 2017; F, 2017). For example, an outsourced data analytic agency would claim KPI's of interest for a company with a web presence, differently with those of the web-analytic team inbound the scope of the same company. E (2017) explained this fluid state of the attributed KPI's with the concept of subcategorization due to factors as period, marketing strategic campaign and the actual situation of the market. From that, we can reflect the responsive attribute profile that the KPI's should maintain for meeting the Objective Key Results and provide insights for maintaining the company's competitiveness. Finally, due to our research purposes, we attempted to make figure out KPI related and prompting the designing of the Interface of a website. Due to empirical findings, insights mostly from the individuals interviewed being involved with web development, we refined that monitoring as an index the device that the majority percentage of the traffic is influencing the most the view of the web-site (B, 2017; C, 2017; F, 2017). Having the insights that the largest allocation of user - potential customers is interacting with the main interface through a particular type of device, as smartphones or tablets, is giving the directions for a more responsive or mobile screen development of the UI.

5.5 Prominent elements of Web Development Process

Kaushik (2007) supported the opportunities that usability tests were adding to the process of development. Following, Kaushik (2007) explained, that with usability tests websites' interfaces are becoming more attractive helping stakeholders to reduce functional problems in redesigning the website. Jeffries et al. (1991), highlighted the considerable importance of Web Analytics and usability tests in the process by gauging the progress of the website in a trial phase. From the point of view of the Respondent A (2017), with the specialization of a growth hacker, realized from his working experience that Web Analytics generated new methods on how to optimize the steps for buying a product in an e-commerce website. A (2017), used to believe that a confirmation of a sale process was better to be designed in one-page checkout, but after Web Analytics and usability tests, he discovered that people felt more convenient with a step process for a sale in different page each face.

According to Respondent A (2017) (see Diagram 1), Web Analytics are improving the Web Development Process in redesigning the website by offering statistics and results from usability tests to the UX and UI professionals. As we mentioned above, Respondent A (2017), found Web Analytics useful for altering his old way of thinking about the process of an e-commerce web page. With the appropriate data, stakeholders can visualize and following proceed on a transformation of a simpler and more attractive UI.

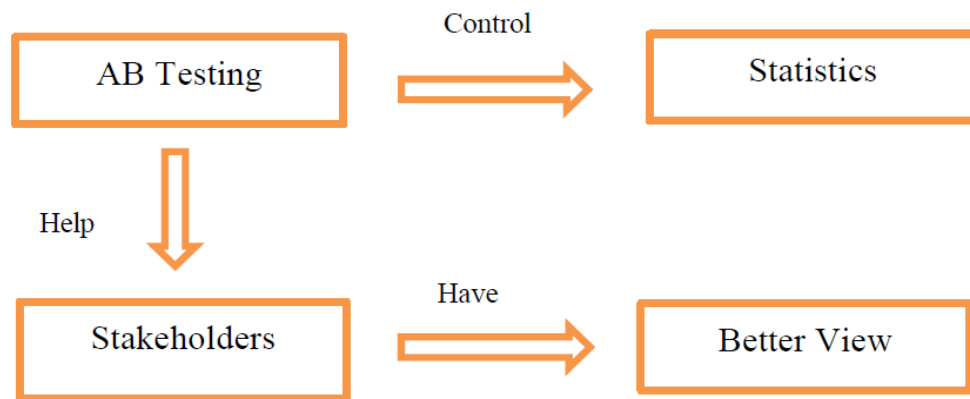


Diagram 1 : Respondent A

Questioning Respondent B as a front-end developer, his opinion about Web Analytics and their implementation and improvement of the website, we realized the tremendous power that Web Analytics have in Web Development Process. According to B (2017) (see Diagram 2), the process to redesign the UI is the involvement of stakeholders who are entailing in the process and are being advised from Web Analytic insights. In the literature review, we can easily relate B's (2017) response to many authors statements describing Web Analytics as the prominent element of measuring user's behavior and actions. As recorded actions for further analysis are click-throughs, subscriptions, analysis of Web Traffic, even the ability to track the user offline, elements that are being used as factors for gauging user's behavior (Chi, 2002; Kent et al., 2011; Pakkala et al., 2012; Peterson, 2004; Russom, 2011; Srivastava et al., 2000). We will espouse the idea of recording users' actions and behaviors are significant parameters for the Web Development Process, due to the fact, that we understand the concept of the UI, recognizing it as a media between the development team and the user. The actual meaning of developing a UI is to deliver an attractive product or service to the end user, for an overall beneficial result for both sides, the organization, and the user.

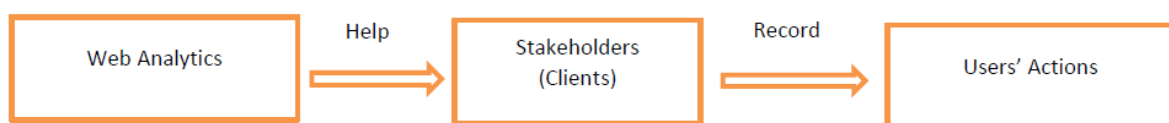


Diagram 2 : Respondent B

Continuing to our next respondent, we ascertained that the usage of Web Analytics is significant for the organization's process to track users' demands and actions. Respondent C (2017) (see Diagram 3), specialized as a full-stack developer, stated that Web Analytics are critical being imported in various pages in the code, to track user's requirements. According to C's (2017) believes and experiences, Web Analytics are important for the marketing on promoting digital sales. The same theory supported by Kaushik (2007), declaring the fundamental orientation strategy that an organization should follow, focusing on Web Analytic manager and sales in the development process.

In a detail description of C's (2017) processing the design of a UI, adducing examples from his working experience, we were fascinated by the ability of Web Analytics tracking user's preferences. C (2017) provided us information to understand how Web Analytics helping the development team to offer to users the products of their preference. Moe and Fader (2001) mentioned the benefits of advertisement in a website and suggested the usage of Web Analytics succeed in while maintaining the control of the website by Web Traffic.

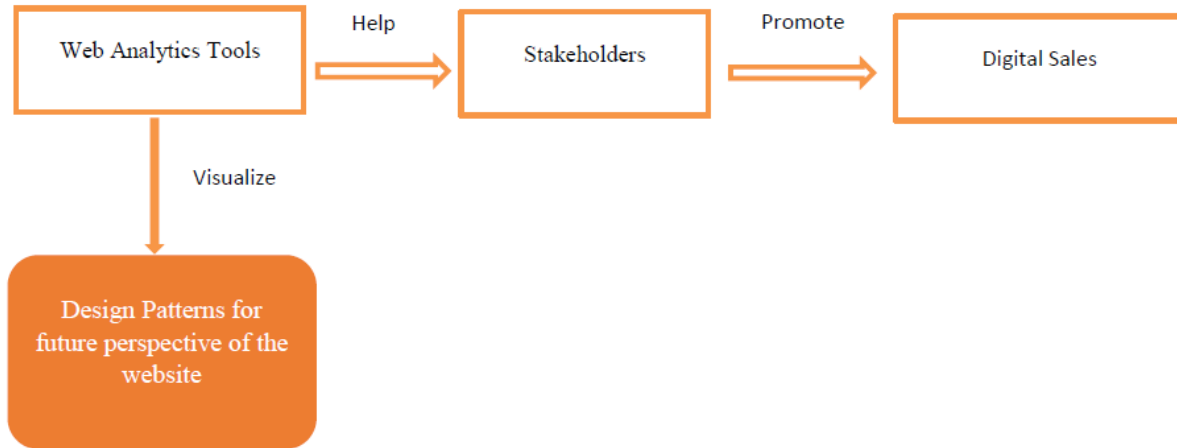


Diagram 3 : Respondent C

A significant part of the development process is for the stakeholders to take the right decision. We discovered from our research, that one of the valuable contributions from Web Analytics to the process is guiding stakeholders selecting the proper solution. Respondent D (2017) (see Diagram 4), gave us a picture of how important are Web Analytics for the process and decision making, firstly, by collecting the right data, proceeding with the analysis and observation, completing the process with calculations for a future decision making. Hasan et al. (2000), mentioned the consistency that Web Analytics provide to the organization by the aforementioned actions from Respondent D (2017).

Converting a website from static to responsive, Respondent D (2017) described a personal working experience with the alteration of their company's website, mentioned and characterized the using and observing data as crucial. Web Analytics, usability tests, and statistical tools are the alliances for a sustainable development process. The tools mentioned above, are helping the company to predict next steps and present graphs for improving the redesign of the website.

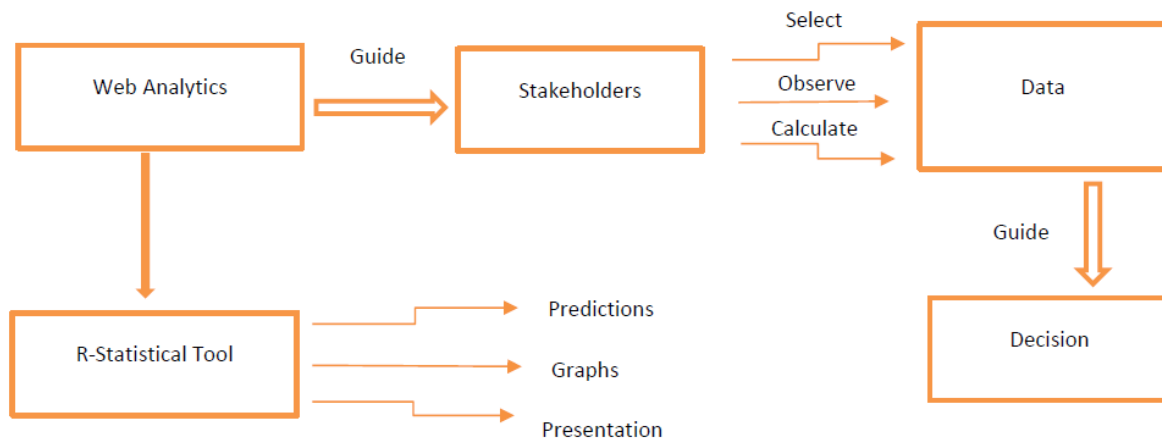


Diagram 4 : Respondent D

It is undisputed that Web Analytics supply to the organizations with beneficial insights. According to Respondent E (2017) (see Diagram 5), specialized in marketing as a Digital Marketing Executive, every organization should add and advised Web Analytics in their Web Development Process for the digital appearance of the UI. Continuing, Respondent E (2017) regarded Web Analytics as the media of showing the organization which strategy to follow. Kaushik (2007) believed in the significant offer of Marketing’s role into the development process and the ability of them to merge their marketing skills and strategies with Web Analytic insights. Respondent E (2017) elaborated an example of Web Analytics providing insights to the organization, mentioning the collaboration of different stakeholders and their ability through experience and research to translate the analyzed data while processing to the next step. After understanding data, usability tests are required to examine the viable solutions for a more user-friendly environment.

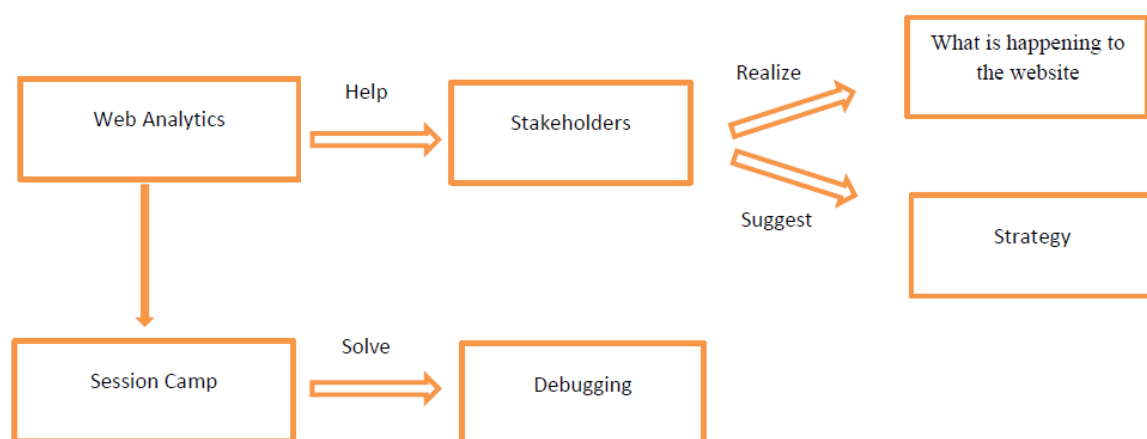


Diagram 5 : Respondent E

Our final interviewee, Respondent F (2017), agreed with the aforementioned statements about Web Analytics helping organizations with their insights to track users’ actions and improve the process of redesigning the website. F (2017) (see Diagram 6), depicted a procedure of a funnel in their company, how they measure the steps that the users are following to purchase. Involving Web Analytics in this procedure make stakeholders capable of examining the exit points, also

known as bounce rates which translated into the percentage of people leaving the page without converting (Clifton, 2012). By studying this phenomenon stakeholders can easily orient their decisions to redesign a more user-friendly website. With Web Analytics organization can distinguish the zones of the user's interest and merge it with the elements that the organization considers as most important. Abhishek et al. (2012), described the funnel of converting process with the organization aiming to convert the user from a visitor to customer.

After a sufficient research and a valuable collection of data from our interviewees, we are capable of understanding the meaning of Web Analytics in Web Development Process and to characterize it as a crucial element for the redesigning and orientation of a more attractive and a more efficient user website.

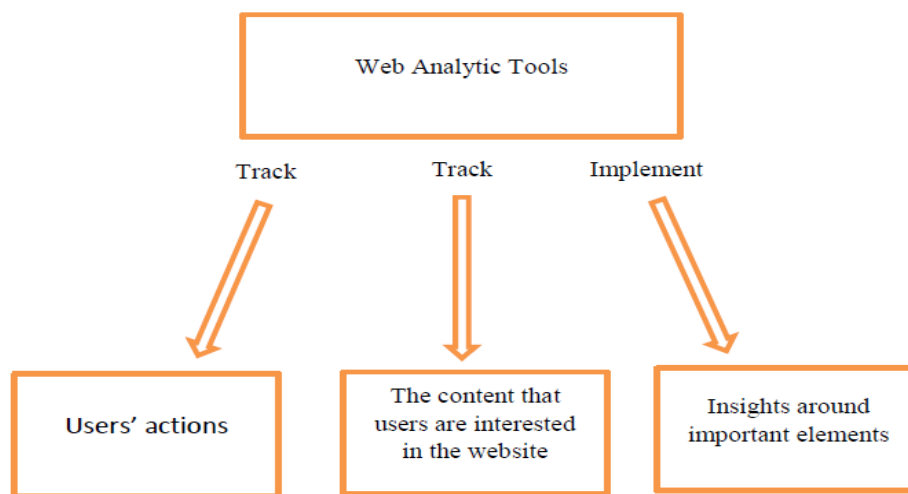


Diagram 6 : Respondent F

5.6 Involvement of various stakeholders in the design process

The attempt of trying to build a block of theory according to Recker (2013) is identified in four questions. The “What” that reflects on constructs, the “How” that reflects to relationships, the “Why” that renders the justifications and the “Who” that consists the boundary Conditions. We based in these questions to analyse and reflect the concentrations of our findings due to the acknowledgment and the distinction of the different stakeholder's involvement in the web design process. Answering the first block of theory “What”, we aspired to establish a link with the Stakeholders theory postulated by Ed Freedman towards the conclusions we deduced from this research. The vision of Freeman's theory about the perception of companies indicates that each stakeholder is represented from actual people involved with functions and principles within the company (Donaldson and Preston, 1995). Accordingly, Friedman in his theory states that “Economic value is created by people who voluntarily come together and cooperate to improve everyone's circumstance” the activity of those is resulting in a driver in the process of value creation for the company (Freeman et al., 2004). Taking this into account we retrieved that behind the Web Development Process there is a whole ecosystem of different professionals from various sciences and fields that synergize with the aim of the value creation of the website. As was reflected in our review the stakeholder is perceived as each individual that is involved in another project or a project in the same company with the aim of a delivery as a separate

contribution towards the whole project process (Frazango et al., 2014). Considering the two aforementioned statements that refer the value creation as the purpose to the stated stakeholder's synergy, the natural induction of the theory block of “Why” is answered. The development process is a combination involvement of different persons from different the perspectives and skills. We extracted information from 4 different categories of individuals involved with the business process of web development: Web analyst, Digital Marketer, Developer, Growth Hacker. Relatively each one reported his own perspective about the people of interest and collaborating around the Web Development Process. Accordingly delivering an answer to the question on “Who” is involved with this whole incentive we were driven to render with an accumulated model representing the information we collected (see Figure 5.6.1).

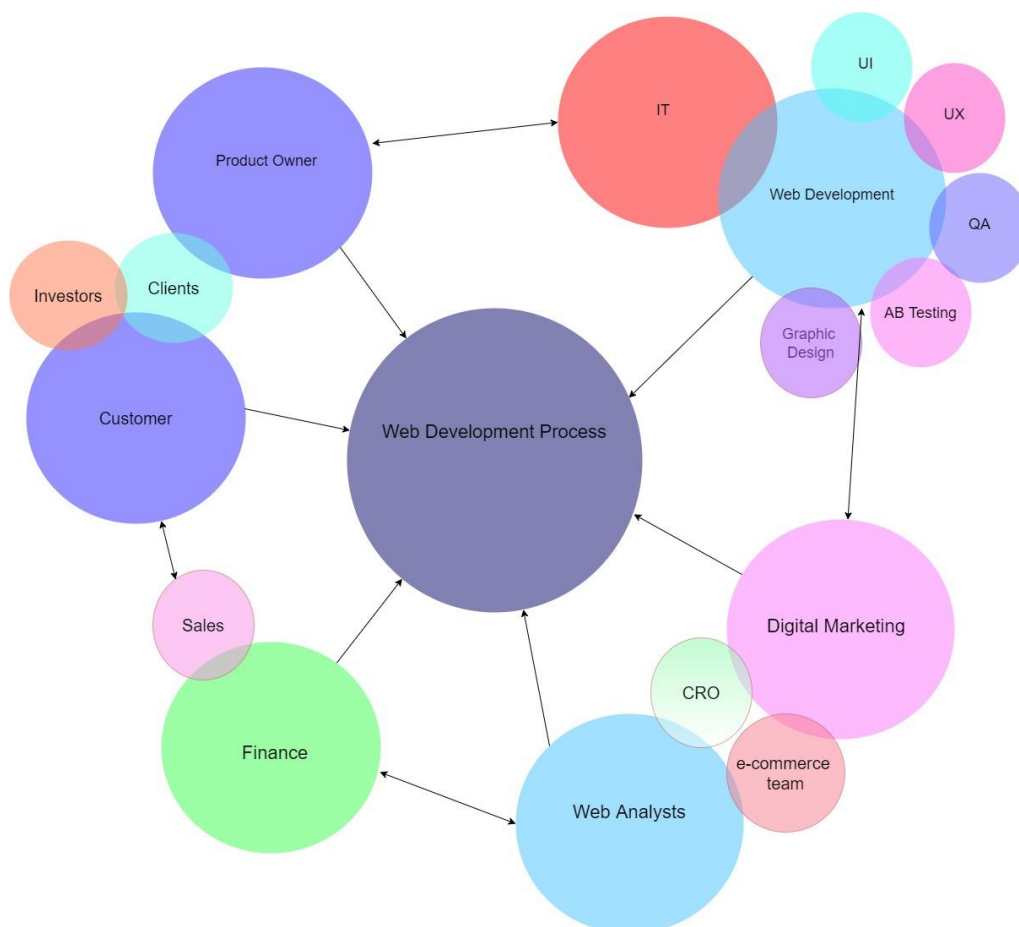


Figure 5.6.1 : Framework Stakeholders in Web Development Process.

Each individual entity in the Model represents a part of the ecosystem of stakeholders that are taking part in the perspective of Web Development Process. Of course, this model is advocating the concept of the management responsibility that is needed for business to be articulated and regulated (Freeman et al., 2004). The Figure 5.6.1 was conceived through delving into the information collected from our subjects of interview and depicting it accordingly. Each circle is representing stakeholder entity and the incision between the entities reflects the direct dependency of their activities. Additionally, the arrows which connect the nodes - entities bidirectionally represent the collaboration between the different departments due to the web development processes and eventually their contribution towards them (single direction arrow). Thus, the set of IT department is rendered to be adjacent with the various stakeholders involved with the technical aspects of web development as: Developers, UI, UX, QA, Graphic Designers, AB

Testers (C, 2017; E,2017; A,2017). Relatively the Digital Marketing Department is connected with the Web Analytics and the CRO, e-commerce team which they collaborate (arrow) with the aforementioned departments oriented for technical developer matters (D,2017; E,2017; A,2017).

Within each stakeholder-component that is contributing to the cause of the main process of web development, there are individuals that are involved with the management and the healthy functions of the whole process. For instance, B (2017) stated about the Delivery Manager, who can be involved during the whole process, or even the scrum master who is responsible for the project management delivery (C, 2017; B, 2017). Moreover, occasionally a stakeholder can be involved in more than one function towards the whole process, hence the existence of the growth hackers, developers involved with data analytics or vice versa (A, 2017; C, 2017;). In conclusion, we deduct that each stakeholder is responsible for performing and delivering within its area of activity. Some departments, as for example Marketing - Web Analysis, Product Owners -Content Manager- Developers, have a more frequent interaction due to the whole process and through regular reports meetings or other project management assemblies the synergy is achieved (A, 2017; B, 2017; C, 2017, E, 2017). That could form the answer on our inquiry block on “How” the stakeholders reflecting their professional relationship interaction due to the whole purpose of the Web Development Processes.

5.7 Importance of translating user actions into conversion

The Key Performance Indicator attributed as most important from the majority of respondents was conversion rate (E, 2017; A, 2017; F, 2017; D, 2017). The essential aspect of conversion rate in the website was articulated as the percentage of users that perform an action, set as a key action by the stakeholder who is involved with the strategy of the web site, towards the total sum of the user that accessed the website’s targeted page (D, 2017; E, 2017; F, 2017). This term was postulated mostly from individuals involved with Web Analytics and the marketing processes of the website. Accordingly, it was refined that conversion can be generalized and bear many purposes for the website’s strategy about the action expected by the user (Omniture, 2006; E, 2017; F, 2017). The conversion of the user does not only apply towards revenue value for the company but also has effect on broader users results as the subscription to the website newsletter, social media like, clicking a publicity, or a targeted goal that could render value for the website (C, 2017; E,2017; F, 2017). Cardello (2013) and many responders agreed that with enhanced user experience(UX) in the website the user Conversion is proliferated (C, 2017; B, 2017; D, 2017). Therefore, designing a website with the principles of being easy usable and projecting him indirectly clear and understandable tasks about what to do or to perform in each session supporting his purpose of the visit could definitely lead to conversion goals (B, 2017; B, 2017; F, 2017;). Relatively the expanding trend among web development strategies in UX design and user conversion strategies, according to C (2017), would be the personalisation of information and user interface, tailor-made for each visiting user. Nielsen (2013) and Omniture (2006) take in concern conversion measurements as the principal metric to consider related with the optimal Return on Investment for the company. In agreement with the aforestated F (2017), considers that “Conversion rate could be combined many times with ROI...” reflecting the direct link of an enterprise expectation for revenues returns towards this metric. Likewise, C(2017) directly stated that “In the end of the day how much you sell is what you want to see and know” which reflects this whole business incentive towards user conversion. With the aim to deconstruct how a conversion occurs in website area the phenomenon of Micro and Macro

conversion was implied. F (2017) stated properly the coherence between those two business terms as “Micro conversion is any action of your website signifies that in a later moment a macro conversion will occur.”. The reflection from that is that the causal goal of the website’s business incentives is translated with the term of macro conversion but all the user actions that they are required to occur or be performed by a user for the later to happen are expressed as micro conversion. All user actions are translated through many micro-conversions that will lead to the aimed user action set by the marketer or sometimes even the analyst. Practically this is depicted with a conversion funnel as it is denominated by the stakeholders involved, which is a deterministic way used to demonstrate the different paths and the statistics related to the user actions and conversions (F, 2017; E, 2017; C, 2017, Omniture, 2006).

Finally, another interesting prompting from our interviewees as a new business initiative that is emerging as a way to maintain user conversions towards their registry of past actions are the concept denominated by F (2017) “micro-moments”. In which all the aggregated information by the user actions performed in the past, are collected through their content and projected to him with relative prompts to action, like advertisements, news, call to actions etc.

5.8 Empirical Framework: Stakeholders in Web Development Process

Accumulating the knowledge, we gained from our research, the natural deduction was to deliver a framework, which reflects our conclusions around our inquiries in our topic of interest. The purpose of this framework is to unveil the actual impact of Web Analytics into the Web Development Process, and the prevalent collaboration of various stakeholders involved within it. The following framework (see Figure 5.8.1), depicts our findings and the cause of our research process.

According to our empirical findings and the literature review, the suggested framework relates to the empirical framework. Our interviews succeed in giving a more detail collaboration of the stakeholders, after the data derived from the Web Traffic. In the process of Web Traffic, the stakeholders with the help of Web Analytic tools managed to organize better the concept of redesigning the website for a more valuable and easy interacted website for the user. The role of each stakeholder is more accurate in the steps of redesigning the website. The creative team of developers and designers and marketers are collaborating with the product owner. Additionally, the product owner is the responsible person to conduct with the client. In the second stage, there is the team, consist of AB Tester, QA Tester, Web Analyst, who are observing the performance of the website through the usability test process. Next stage is where Web Analytics are performed, where at this stage the collaboration of Web Analysts, Marketers and Sales are significant for continuing in the fourth stage of the redesign of the website. This process with the collaboration of the different roles of stakeholders is repeatable, every time exists a new behavioral difference from the user through the Web Traffic.

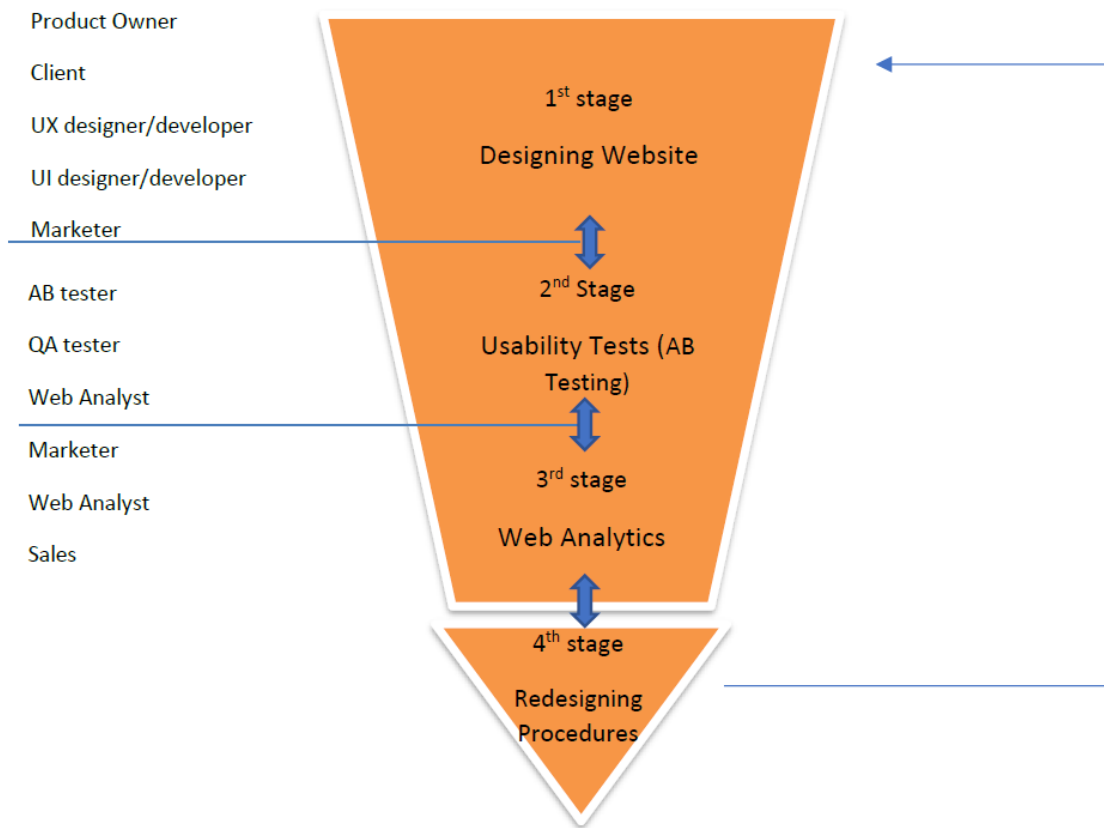


Figure 5.8.1 : Various Stakeholders involve in Web Development Process

6 Conclusion

6.1 Introduction

This last chapter is encapsulating the conclusions and the resolution we conducted throughout the course of this study research, derived from the preceding chapters. We offer a construct of theory combined with our framework to render an answer to our research question. Furthermore, this chapter provides some outcomes that were distinctive towards our course of research and offer the fertile ground for further research enquiries proposing some reflections projected and associated with our problem area.

6.2 Answering the research question

After delving all the process of this research, the answer for the research question proposed:

“What is the role of web analytics to the stakeholders involved in web development process?”

Is being answered by the suggested framework but also in detail by the Empirical Framework. The need of collaboration is obvious in these two frameworks, while on the empirical framework, there is a clear distinguish between the different roles of the various stakeholders involved in the Web Development Process.

Nonetheless, the research of Information System topics requires a high-level cross-disciplinary approach combining the refinements of theories and practices. Therefore, in order to induct our answer to the problem area, throughout our acquired knowledge we aspire to justify our reflections sharing the notion of Causality postulated by the philosopher Aristotle's, as the Four Causes Theory (Gregor and Jones, 2007; Bhattacharjee, 2012). Aristotle outlined that acknowledging the cause of a phenomenon, is related not only to the explanation of its purpose of existence but also having the capability to explain it through its structures which is consisted (Gregor and Jones, 2007). For this purpose, the conclusion of our ideas will be deducted based on the four causes, reflected as structures of our answer to our research question, framed as: cause of material, formal cause, cause of efficiency and final cause (Gregor and Jones, 2007).

Accordingly, the material cause of Web Analytics and their impact in the development process is rendered by the assets of user collected data; the refinement and the analysis of this data from professionals involved with it and finally the results interpreted as changes in the appearance of the web interface. All of these collectively are also elaborated on the data driven development initiatives.

The formal cause or otherwise the essence of Web Analytics, is consisted in the technologies applied with the purpose to create the aforementioned results (Gregor and Jones, 2007). That is portrayed with the use of Web Analytic tools (Google Analytics, Dart, Hotjar etc.), software programs (R statistical tools, Excel), scripts of code embedded in the pages of the website,

Key Performance Indexes (Conversion rate, Bounce rate, session per page etc.) and of course the contribution with the know-how of each particular stakeholder involved in the Web Development Process.

Through the research of understanding how Web Analytics affect the Web Development Process, the need of grasping the role of people involved is essential. Hence, the efficiency cause examines and brings in surface the ecosystem of all the individuals who are taking part in the process of web development. Acclaiming who is involved in the web development incentive, examining the duties of delivery and the relationships between the stakeholder environment renders fruitful reflections about the phenomenon. It is given in prominence, that in the process of decision-making on matters such as alternating the content of a website, the stakeholders involved with Web Analytics and marketing appears to have more influence than developers or other individuals related to the design and development process (E, 2017; F, 2017). Additionally, the need of individuals qualified both in the domain Web Analytics and having a strong web-development background created the ground for the appearance of multidisciplinary roles as those of Growth Hacker(A,2017). Furthermore, the over and over demanding Web Analytics presence in the business needs made the necessity of establishing a defined responsibilities professional role and the synthesis of an independent Web Analytic unit towards the IT and the Marketing department that once was integrated (E, 2017). This apparently projects the direct relationship in the scope of Web Analytics with the matters of web-development engineering and marketing competitive strategies.

Eventually, the last cause to take in concern as an answer to the research question is the final purpose of Web Analytics, or *causa finalis* according to Gregor and Jones (2007). The final purpose of the Web Analytics is attributed by the value gained from data analysis and added as competitive advantage directions during each stage of the Web Development Process. Web Analytics provide the most efficient way to track down, administer and assess the effects and reactions made by user's interaction with the website existence, of a business initiative. Subsequently, Web Analytics affect the Web Development Process by collecting, clustering and refining development towards a value creation direction aligned with the business goals of the website. This placement of theory as the final reflection of this research serves the reasoning of framing scientific knowledge. We aspire to render the scientific knowledge of this particular phenomenon by knowing its actual purpose through examining its conceivable structures and its cause of existence. Apropos this theory's refined patterns, there are several topics conceived that will be giving the right incentives for further research in the future.

6.3 Topics for further research

As a result of the qualitative approach of our thesis and of conductible interviews, we feel comfort to declare that we acquired new knowledge. We delved into subjects that could excursive our thesis from our goal and make it broader, but we managed to stay focus on providing only necessary knowledge and relevant information of the impact of Web Analytics on Web Development Process.

We are cognizant of responsive Web Development Process, but we did not want to elaborate the meaning of responsiveness on websites due to the fact that we would elaborate a completely different subject, this of Web Development Process in portable devices. Many of our interviewees mentioned the responsive websites, mobile devices, and so on, and according to them, to

the literature, and to our own prospect, the future of websites are oriented to the UI of portable devices.

Initially, on our research, we were not deeply aware about the extent of the collaboration between the various specializations implied in the development process of a website. For instance, there are people working in a group within the same company, working together for one specific aim, those are called Inhouse specialists. Additionally, there are co-operators working as external employees, helping with their insights and their advice another company, those are called Outsource specialists. When we reached our interviewees, it was not clear at first in which part they belong, processing along with the conversation this was coming out from our respondents, either they were Inhouse or Outsource employees. Due to the limitation of time, we could not investigate this specific area in detail. For the reason to render our topic more appealing, we found quality in searching for every of the aforementioned specialization of the companies, from the Inhouse and Outsource perspective. Which was not what we intended to research from the beginning, but claimed to provide research value on the course.

Another concern was the changing of market and the responsibilities of stakeholders, through time. There is a silo mentality still in many companies, that leads to socio-political issues. They are dividing the stages of the process funnel and are grouping every web page in a specific specialization. To be more accurate, there are companies that define marketing to be responsible, for instance, only in the 2nd stage of the process funnel, completing their work without the sense of cooperation. Continuing in the process funnel, e-commerce team can act similarly and be responsible for the 3rd and 4th stage. Preventing silo mentality in Web Development Process can be a significant research for further analysis in social and political aspect.

Appendix 1– Interview Guide

Initialize the environment.

We welcome and we thank in person the responder for contributing to our cause. Initially we introduce ourselves and our thesis main domain. Accordingly, we provide some basic information around the area of Web Analytics as a trend topic of Information Systems and then the aspiration we aim to dig out from their perspective and their involvement in business.

Afterwards we present indirectly our thematology through presenting our enquiries of research. Our main two main questions are based on how Web Analytics influence web user interface but also How Web Analytics translate into design and by whom, from which the responder can reflect on the process of the interview.

The main reason that the interview is conducted is to broaden our view from the experience of an individual involved in the business of Web Analytics and Web Development or even in the frame of an enterprise with the aim to reflect his experience around our topic.

Finally, we declare that this research is strictly for academic purposes and no further information than the one that the responder has confirmed would be implemented in his ignorance.

6.3.1 *Introduction Questions:*

Q1::General Information: about education, previous and current experience, Title in organization how long he obtains this position

Q2:: Can you describe your role and responsibilities?

Q3::How long have you been working with your activity ?

Q4:: Can you describe The role of Web Analytics for your professional activity in few words?

6.3.2 *Questions related with Key Performance Indexes*

Q1:: Do you take in concern the data provided from users from your web site traffic? If yes name the one/those of your major interest.

Q2:: Which Web Analytic tools are you using?

Q3:: Can you give us some examples on the way you are using them? How you are using the info collected from them?

Q4:: What Key Performance Indicators/Indexes you take concern the most?

Q5::What is the Object key Result (OKR) that you expect or are linked with your KPI?

Q6:: Which metrics/KPIs are linked most with the design of the UI?

6.3.3 *Questions related with Web Development Design & web design process*

Q1:: Could you describe me the steps you are taking to create a view of a website?

Q2::How Web Analytics are adding value to the Web Development Process?

Q3:: In your opinion how the findings of Web Analytic tools provide insights on how to form your design or your development?

Q4:: Can you define some recent insights driven from Web Analytics that changed the view or formed the components of an interface?

Q5::What was the actual effects or results from this?

Q6::Which considerations do you take as important competencies to form a website, for instance, Competitors or standard pattern?

6.3.4 Questions related with the role of different Stakeholders

Q1:: Who are the stakeholders involved around the development or the optimisation/maintenance of the website's utilities goals?

Q2:: Could you provide us information about the professional diversity of the people that you collaborate with?

Q3:: In your opinion who is the most critical factor that may shape the actual final appearance of the interface?

Q4::In your opinion who is involved and has responsibility for a successful Web Development Process?

Q5::An investment in a report analysis and the hiring of the right expertise is needed. Could you describe a typical report and the individuals who get involved with the decision making process?

6.3.5 Questions related with Conversion Rate

Q1::What conversion rate is for you?

Q2::How conversion rate provides value for the website?

Q3::If you are familiar with the terms Micro Conversion Macro conversion rate, give us some examples related with the activity of your work?

Q4::As an enterprise/working protocol do you have a pattern or a conversion funnel, otherwise in order to estimate the conversion goals?

6.3.6 Questions related with Data Driven Development

Q1::How developers take advantage the Web Analytic tools of user behaviour in order to create value for their web sites ?

Q2::It's important to investigate how visitors behave when on interacting with a website and/or which improvements you should make?

Q3::Could you describe any pattern that Data conducts the development of your website interface? (data-driven development process that applies on your web-interface)

Q4::the user experience of your visitors is mentioned (or is measuring to determine...) to determine the success of your website, how Web Analytics tools provide the means to investigate this? (optional)

Appendix 2 – Abbreviations

Application Programming Interfaces	API
Conversion Rate Optimization	CRO
Electronic Business	E-Business
Electronic Commerce	E-Commerce
Human Resource	HR
Information Systems	IS
Information Technology	IT
Key Performance Indicators	KPI
Key Success Indicators	KSI
Objectives and Key Results	OKR
Quality Assurance	QA
Return on Investments	ROI
Search Engine Optimization	SEO
User Experience	UX
User Interface	UI
World Wide Web	WWW
World Wide Web Consortium	W3C

Appendix 3 – Transcript A

Interviewers : US

Interviewee : A

<u>Subject of interview</u>	<u>Transcript text</u>	<u>Code used</u>
US	Can you describe your role and responsibilities?	
A	Growth hacker	WAT
US	Can you describe the role of web analytics for your professional activity in few words?	
A	Smart ways to grow an idea.	WAT
US	Do you take in concern the data provided from users from your web site traffic? If yes name the one/those of your major interest.	
A	(He talked more about how they transfer data to their clients). Clients are hard to read and understand the collected data of the user's behaviour, so the process is that the responsible (and has to be one representative at a time that talks to clients) that informs customers with a report, for the conversion rate optimization	ROS WDP CRI
US	Which Web Analytic tools are you using?	
A	Google, Hotjar, JAndex (Russia), campaigns (Facebook advertisements, Google Adwords	WAT
US	What Key Performance Indicators/Indexes you take concern the most?	
A	The conversion is most important , and cost per acquisition (money the company spent to make a sale), and bounce rate (when the visitor don't find the website important and close it before it makes any other move, so	KPU CRI

	websites with 50% and more of bounce rate should take into concern to advise the analytics and redesign the website).	WDP
US	Can you define the process that you follow to create a view of a website?	
A	<p>Websites needs to be improved and developed through time! No UI or UX have the knowledge when firstly create a website to predict the progress of the website.</p> <p>The process for the creation of a website is the following:</p> <ol style="list-style-type: none"> 1) sales first of all 2) Project manager → help sales department with technical knowledge, for the cost of the website, for the time to deliver it to the client etc., and then to make an offer to the customer. 3) Content manager, for importing the context. 4) Web designer/graphic designer (text edit, photographer, or whatever specialization is needed for each website) 5) front end designer and back end developer 	WDP ROS
US	How Web Analytics are adding value to the web development process?	
A	After analysis, redesigning the website is the next step, the UI and the UX are redesigning according to the statistics and the outcome of the analyzed data.	WDP ROS WAT
US	Can you define some recent insights driven from Web Analytics that changed the view or formed the components of an interface?	
A	For instance, I used to believe that in an e-commerce the confirmation of a sale process it was better to be designed in one page checkout. After Web Analytics	WDP

	use and AB testing, I realized that people find more convenient to have a steps process for a sale in different pages each phase.	WAT
US	Who are the stakeholders involved around the development or the optimization/maintenance of the website's utilities goals?	
A	It happens to be a CEO that will be the head of the process. Sometimes, that is not so good, because it happens that he is irrelevant with web development and makes the work harder than it might be. Orders like, changing the construction of the website because I did not like it.	ROS WDP
US	In your opinion who is involved and has responsibility for a successful Web Development Process?	
A	The development team must work on and deliver a project, but first, analysts are those who will give orders on the designing process, and then web designers will make a sketch of the website, so developers comes last in the process.	WDP ROS DDD
US	What conversion rate is for you?	
A	The goal of the website. Whatever the website wants to succeed.	KPU CRI

Appendix 4 – Transcript B

Interviewer : US

Interviewee : B

<u>Subject of interview</u>	<u>Transcript text</u>	<u>Code used</u>
US	(...) we would like you to share with us some information about your former and current professional role and situation. You are working right?	
B	Ten years approximately, various website creation for organizations, ecommerce, organizations' websites , rental car and tourism because I was in Crete, and then, advertisement about political campaigns. I was working as a back-end and front-end developer till then, known as full stack. Now I am working only as a front-end developer in this organization.	WAR
US	In few words can you describe me the role of web analytics in your working experience?	
B	We have stories deriving from the client to record the actions of the user. How many times he pressed the button, if he pressed it, Which button he used, how long he spend time , etc. Now, how they record or how analysed data I don't know. The tool is not google analytics is something else, which give feed to google analytics, maybe because we feel comfort with the charts, etc.	WAT
US	When you are working do you take into account the analysis from Web Traffic? When you are about to develop a code, do you take into consideration to measure the insights from Web Traffic?	
B	No, as a developer. As users and developers we give feedback, what we think as correct	WAT
US	As Web analytic tools, you said that you are using something that give feeds to Google analytics but you don't remember it, or use it?	

B	Universal variable is the name of the tool but it can be the software, I don't know the actual name of the tool, and I think is not only GA could have other tool as well to check statistics	WAT
US	we talked before for KPIs, metrics that measure your interface, for you which metrics or KPIS are connected more to the design of the user interface, in your opinion.	
B	In my opinion , not what I know, because I don't know, I imagine that stakeholders should be , UX, UIDesigners, data analysis, all of them can combine and have a sufficient outcome, and then this result that they chose they then should ask developers for delimitations, if they can develop the things that they suggested.	KPU ROS WDP
US	From your general experience, can you define the process that you follow that you are using to create the UI? Some steps maybe. How a template is created?	
B	Developers get illustrations from the designer, as developers we can give feedback if it is applicable; from the refinement, through scram. Additionally, we get only the pictures, even if we have to make animations we have been oriented exactly from those who order it. And then we create it by code.	WDP
US	In your opinion , how analyzed data from Web Analytics help the organization to improve the UI?	
B	Depends what is your goal as company. If you are a company that wants to gain revenues, and you want to have more users or to sell products, you care more about quantity. If you are a Non-Governmental Organization then you care about the quality of your users. This is the element that your measurements will follow and you can make comparisons, with the metrics; this is what metrics do, give you feedback of what you chose to measure. You create something and then you rated through metrics. But Metris sometimes can be wrong. So depends on how you evaluate metrics and you must take consideration every time what exactly you want to measure, for instance is not every time the number of visitors you have in your website, maybe is	WAT KPU WDP CRI

	not your goal to have many users . (...is giving an example)	
US	Do you influenced or follow a standard pattern when you start to design as a developer? what is your considerations take into account to create the site. For instance, you talked about trends, do you use specific forms or patterns in your company to develop a website and waiting for some results?... Do you believe that this have been created because of a specific, influenced by competitors, or by trends?	
B	oh a standard pattern. It could be copying the customer, either because it was demanded from the client to innovate so the designer and the UX developer are those who give decisions to developers. Designers keep the consistency to UI , for example, it will not be the whole site green and all of a sudden the new feature will be red.	WDP ROS
US	Who are the stakeholders that involve in development optimization or maintenance of utilities of a website, and the goals of a website.	
B	In my job are Developers, testers – QAs, Product owner, scam master because we use this methodology, customer obviously (correspondingly Product Owner, and they have corresponding testers), designer , data analysts, all of them but in different stages, they do not talk all together, until the decision , or the final product. Manager is the one that can be involved, which is also called Manager delivery (as human resources) as well can be part of the process , also has a role of sales.	WDP ROS
US	Personal opinion, which is an important factor that can generate the actual final appearance of UI.	
B	It is not something innovative or new; everyone is copying each other. You can see that everyone is copying on idea. They might get influenced from different websites, irrelevant subject, but tried to implement it in their website. Mostly in mobiles is changing a lot the creation of websites.	WDP CRI US
US	The reason is because of the easy use of the device?	
B	For instance, a time ago they had as a menu bar , the “hamburger” menu, now they make a black footer with a flower and you press it and comes as a pop up, we	WDP

	call it slider... So the device Is one of the most important consideration. If it will be a mobile, a desktop, or a tablet.	
US	do you know about Conversion rate?	
B	No	
US	Do you have a process as a funnel, with steps, to measure the user steps for some action in your site?	
B	No	
US	Do you know anything about micro and macro conversion?	
B	No	
US	Data driven development how developers take advantage the user's behaviour to create business value?	
B	Experience is the key role. As developer we don't have the knowledge about how to create value, only through experience.	DDD
US	How important is for you to examine how visitor's behaviour interact with the website and which data will get for improvements?	
B	Developers they know the application really good better than anyone and the client; we examine the consistency in general, how the application reacts the functionality. The other part are scenarios that Product owners and customers have think about and suggest but as developers we will tell our opinion if the website not be functional for the user.	DDD WAT
US	There are some patterns concerning of DataDrivenDevelopment, can you describe a pattern that collected data are driving the UI? How DDD process applies on your website? You are in a company that uses a lot the collected data from user's behaviour?	

B	I know in general, for decisions that have been taken in the past, I see that they are trying to personalize the application. (... an example)	DDD
US	Can you tell me if there are Web Analytic tools or other process to get into the UI, if it is successful?	
B	You are creating a new future that you think it will help, as developers we have tools that we measure what button the user pressed, when, and where the finger goes in few words. (...an example)	DDD WDP WAT

Appendix 5 – Transcript C

Interviewer : US

Interviewee : C

<u>Subject of Interview</u>	<u>Transcript Text</u>	<u>Code Used</u>
US	(...) we would like you to share with us some information about your former and current professional role and situation. You are working right?	
C	I m a software engineer, that designs some solutions for more complex matters like controlling of result files of Lotteries, how you 're processing them, what will occur in case of error, if it would be a retry session what will happen etc. We work we Agile, but in some initial development steps we should address to waterfall style. Solutionize, prototyping and checking if something is alright to implement it in the platform.	WAR
US	How could you describe Web Analytics, that are influencing your professional interaction?	
C	They are absolutely important, because now we have to implement them due to the reasons of a user story as we mention them. Its critical to inject them in various pages in some areas in the code, so that to provide information that the client requires for different variables. We 've been given an excel sheet with many parameters or variables that afterwards are projected in the page. (gives examples for lottery games -- and technologies used) Analytics are valuable as a tool, firstly as the design of the interface because you see things from the foreground. Especially used by designers in accordance with the customer , to check that something is not been using appropriately, long processes with even longer steps, to check desktop and mobile versions. (examples of design) With Web Analytics you can certify if an interface demands design or redesign. Without doubt it's a very useful tool for the marketing the promotion the digital sales generally.	WAT
US	You probably have heard about the KPI indexes, can you give us some info?	

C	Yeah, these are determined by the customer, on the object and the cause of the website. The customer starts with demanding some parameters(mean- KPI) which on progress they could be augmented.	KPU
US	That's only determined by the customer or you have also a word in the key indicators you aspire to see numbers as an enterprise?	
C	We put as enterprise some analytics in the key product that we want to take info that with small changes can be modulated for others as well. So we've got in mind what are the markets needs in each domain, we know which are the important but we mostly input our KPI according to our customer fluid needs, for example prices, demand every click is measurable is valid for him.	KPU
US	So accordingly with what analytic tools have you been involved with?	
C	Mostly with Google Analytics, Dart and Tealium tool that we want to implement that I don't have a lot of knowledge in it. We want a hash key value and a hash map to retrieve the insights for our code and from there we form templates reports for more accurate and concrete extrapolations.	KPU
US	Which of the metrics are linked mostly with the design of the web interface?	
C	In first phase there is no one who would tell you what is going on. Users use mobiles, tablets , desktops? So in first phase we need to distinguish from which device users are approaching to your site and then we can say that users for example are using our website mostly from the mobiles for that metric and only could render an enterprise to focus their actions towards the development of interfaces for mobiles. Additionally I would like to mention the traffic as a major parameter and to understand the ease of use. In my occasion the game flow as it is mentioned, which is defined from a sales funnel, which actually it divides with steps the whole incentive of the web site. Everything matters, from where the user is to if the user has already visited the site. Whatever you can keep you keep it.	KPU
US	Have you been involved in the concept of the design to develop	

	a view of the website?	
C	We have a department who is mostly involved with these things but they are mostly involved in the layers designs and we are called to turn them into html or JavaScript. (explains cases of enterprise)	WDP
US	Can you report me some extrapolations that were deducted by Web Analytics and changed the view or the components of your interface?	
C	We have proposed in some cases some things to improve the view, due to incompetence's of the design department (elegantly implemented) There is also an intermediate point which tries to modify or improve the design (the initial design work is a part of the design department) (explains some difficulties they have to change the UI with outsourced company). In some cases we changed the subscription form design because there was a lot of customer bouncing due to the greater amount of the steps. In others we've implemented the concept of quick play showing the users banners with games of his interest. Even in the main carousel the user was shown games of his interest. So it was confirmed that the user was searching an easier way to play. Also we had some sliders, that showed some information about the games the user was about to play, they had a problem and the changed the concept again through testing.	WDP
US	Who are the stakeholders involved on the process of development maintenance and optimisation of your web sites?	
C	Firstly I could denominate the product owner, which in our case is the BA(business analyst) and to whom after something is developed , passed all QA tests etc. is got to be shown in the product owner and the stakeholders who have to approve it and the customer.	ROS
US	You deliver a report analysis, for explaining the goals and the performances you ve got to reach?	
C	Are we still talking for analytics	
US	Yes	

C	We have not access to this because, the final edit of the site is only previewed by the client, we will see it only initially on the maintenance. You want though to have a big sample which is retrieved in the sample of production to have a broad image on how you are performing. (Gives examples of failure of understanding UI)	WDP
US	Do you understand it initially by yourself or you have people who is involved to fetch you this kind of information?	
C	This may be simple but you also have to consider that each device has its own things to consider as some devices have disabled services that others have. The information is mostly in the production, you have a former experience that this principle should not been followed but, not convenient, the look and feel is not right.	WDP
US	UX is gonna give you the feedback about colours the look and feel attribute you mentioned etc.?	
C	For sure without doubt, the UX and graphic designers gives feedback about what fits better the eye etc. To add personalisation for each user is a bit early in this phase but still some things could be implemented right.	ROS
US	As the concept of the indicators, which KPI has concerned you the most recently? As a developer of course	
C	The most important is the sales. You have the seen page for example, you can see how much of customers you ve got. In the end of the day how much you sell is what you want to see and know	CRI
US	Is that related with the conversion rate?	
C	Please analyse me the term of conversion rate	
US	(..States the term of the conversion rate..)	

C	The main goal is for the user to be converted and buy. But also you could consider to buy something free as well. Publicity advertisement or whatever, you can see the traffic as well, is someone new here or not. A promotion occurs and users come more frequently, for example in a particular product. It could also occur to remove or add games accordingly. But in my perspective the most important metrics or actions I may say of the user is to be subscribed , to play and to buy all the other in the middle or intermediate analytics are serving for this occasion.	CRI
US	So accordingly from what you have mentioned to me conversion of the user occurs only when the user makes a buy right?	
C	Yes that's essentially the primary goal. You want also to offer the user the more convenient and tailor-made product. But the main aim is that the company sells.	CRI
US	How developers take advantage of the Web Analytics and the user behaviour to create value for the web site?	
C	Generally you should observe the user journeys. You should track the user's movements and actions, from where he is going to where (...implement example with a user journey...) Some pages have more traffic than others, so you start putting more information that could create value to you there, all these surroundings. The traffic of a web page gives weight for the developer in his general perception around the technical aspects. For example to improve the page performance, to be swifter or agile, till to add some information or even add extra pages. Additionally apart from the device you should check even more the browser resolution to keep the same performance in common platforms. Also you can keep the searches of some users of the web site and make a specific page according to this. In the landing page a banner, or even a carousel. But you should always to be live in order to take the full advantage of analytics one step after the AB testing or whichever function occurs offline. So want to see online in the Day 2 of the product the behaviour of the users. (you go online, you see what's going on and the after you approach the product according to the first specimen of users).	DDD
US	So you consider that the front end development is more influenced by the design motives or the data that they draw from users?	

C	<p>There are some good design patterns that exist and can occur from analytics as well. In its first site the company has some insights from the developers and the designers about the efficiency of an initial design of web site you design them and develop them and you see through analytics some patterns . Even with a gallop with your own customers. Analytics is the only way as well to see design patterns for the future perspective of your web site. According to data visualisation of your web site traffic you can understand the users motive and incentives and the reform you design. Even so you can make poles with users, replying to some questionnaires or even HTML mails with embedded analytics to retrieve the user's tendencies, with a reward as well, like a reduction to a particular game or so. You can track with analytics even from the pole the users through analytics through them.</p>	DDD
US	Which could be consider the process of designing of a website	
C	<p>Before every sites implementation the initial concept that occurs is the appearance. Usually you have initially or your design concepts ready and you have to put them through. Notwithstanding that you'll have objections in the passage, definitely the back end have an strong influence in the implementation. And after with analytics you perceive what is happening, in the course of its existence. You could implement prototypes as well with components, date pickers or sliders to reflect the needs of the redesign . Relatively with the concept of the device variation. The first word of the design appearance is due to the clients vue and still after is due to the developers discussion and specification requirements</p>	

Appendix 6 – Transcript D

Interviewer : US

Interviewee : D

<u>Subject of interview</u>	<u>Transcript text</u>	<u>Code used</u>
US	General information about you, what is your education, what is your current role in the company?	
D	ok, I graduated in Management and Educational Institutions in university of Macedonia in Thessaloniki Greece, I left for London after graduation, I did a marketing internship, and this is how I entered in marketing field. In general I liked working with numbers, the period I was in the University, we didn't do any relevant courses with Web Analytics, or data, except a subject that we did management information systems, so we got an idea of Data warehouse and e-commerce, but not enough, and I am looking for a way to combine marketing with statistics, and numbers, not that much on the creating manager, but more to the decision process of how to translate numbers. I am self-taught in the platform of Google analytics. My educational background was not that related to what I do now.	WAR
US	Now You work with Marketing, right?	
D	Now, I work for Eurostar, is a train company that connects UK and France. Travelling industrial, we have a big team of digital ,and I belong to the e-commerce team , which consists of 3 web analysts, 3 CRO (Conversion Rate Optimization) managers, and the manager (general), and my occupation is to build reports, weekly or monthly, or ad hock, analyze data relevant in different departments of the company, either help in marketing or business strategy, or business planning, additionally, to product owners and mostly with CRO managers, with them we do the research and they do the experiments.	WAR

US	Your role and responsibilities in the company are to advise the CROs or PO?	
D	Advice CRO, build reports for examining weekly performance, monthly performance, performance of digital marketing, depends from the requests that every team has, and because the company has websites for 6 different markets, every month I do a big analysis for the market from the part of business. So, there is more digital strategy oriented in our company, and this is a role of web analysts.	WAR ROS WDP
US	What is Web Analytics for you?	
D	Behind every site there are measures with numbers, for instance, how people press the buttons, how long people stays in a webpage, basically, we examine these numbers, monitor them and then with 3 rd and 4 th calculations we are coming out with results, where the company will use for future decision making.	WAT
US	Data, you use data, which are the data that are most important KPIs for your company through the Web Traffic?	
D	For us that we are in the travel field we use a lot the sessions, visits website, conversion rate, depends on the conversion rate of the whole website or search for conversion rate (...an example)	KPU CRI
US	which tools do you use to measure or monitor?	
D	GA, but I work with data through excel. For me excel is the tool that I use and not analytics. And too much of R. R is a statistical tool, which is useful for cleaning the data and we use it to convert the data that we want because we have huge amount of data; additionally, you can use R for predictions and use it as statistical tool, making graphs and present various projects... I know the tool of Adobe, the web Trends, but I use only Google Analytics.	WAT

US	In your opinion, which KPI is linked with the design process?	
D	Depends on what you want to do. For example, when you have a page, you might want to measure the exit-rate in the process of redesign, and then start analyzing the facts that you can change, or the buttons, the clicks through rate in this button, conversion rate of the process of changing pages; depends on what is my goal in a specific page and the things that you want to redesign.	WAT KPU CRI
US	What do you mean by tracking?	
D	The code we write for the website of GA is not tracking everything. Basically, the platform of GA and every similar platform doesn't provide you with all the numbers, what is happening in every website. Then it has to customize the code. The code is being used mainly data layer, therefore you merge various codes for pressing buttons, for specific press, for scrolling up-down in the page, and for more actions inside the page. Tracking many times influences the examining numbers. One of all is the bounce rate and another one is the metric of time, time spending. Tracking for me is the first most important parameter and then is the platform, because if you haven't tracked correctly the platform then you want to have the right data to analyze.	WAT WDP KPU
US	Web Analytics in web design, which is a main concept in our research. Have you involved on how web analytics, in consultants or strategic oriented, can they give value to Web Development Process? Users / comments, etc..	
D	I can tell from my experience right now, because we are altering the website, from a simple website we are making it responsive. Designers send us requests and ask for some things, for instance, how many clicks had each button, to check what measure should consider as important for their redesign. After this process, we do AB tests and we check what happened before and after the changes we made, and then considering these results we make decisions for which design we will keep, the old or the new design.	WDP WAT

US	About changing the company's website. You did a change into the site, based in some insights, or data that you got form measurements of analytics?	
D	The changes from simple to responsive is what the market wants, everyone has a mobile device, so, to avoid having 3-4 different websites, you merge a basic website which fits in every device; this was the actual thought of the company.	DDD WDP
US	Who are the stakeholders involved in the Web Development Process?	
D	In our company, everyone is interested about them. Is the digital marketing, our team managers the e-commerce managers, project managers, and sales. Additionally, we have the other part this of the <i>End of sales</i> , sales through Xpedia, renting cars and hotels, also because it is travelling we have the part of insurances and we are selling them.	WDP
US	Who are the stakeholders that involved more and been more responsible for a successful development process of a website?	
D	For us is a combination, we as e-commerce team we have more responsibilities than others and we have responsibilities for everything related to the website, because we are the analysts team. My role is more oriented to business strategy but based on the website. Then we have CRO managers, who all aforementioned have big effect in the website process. Even the head of the digital marketing, who is high in hierarchy, based on us (the analysts) and all of that because everything is becoming more data driven and we have a good role. By the time of the website becoming from a simple website to responsive our team started to grow, we used to have 1 analysts a year ago when I first came here, and now we are 3 Web analysts, and more 3 CRO managers, and we want to hire a 4rth web analyst, actually the role will be a web analytics manager. Marketing with analysts they didn't get well in the beginning. Basically, due to the fact that analysts have the right, because of the data and the permission they have accessing data and platforms, to say their opinion out loud and freely to the marketers if they are doing well	WDP ROS DDD

	or not with the process, which is something that marketers still cannot accept.	
US	An investment in a report analysis and the hiring of the right expertise is needed. Could you describe a typical report and the individuals who get involved with the decision-making process?	
D	Years have changed and the marketing was once responsible for all the stages relevant to the website. It was their opinion that mattered, advising from developers who were important to decision making, digital marketing, then they were taking advice from various agencies to get advice for the structure of the website, and now analysts are adding, who they can have a small or a bigger team and advice the marketing team.	ROS WDP
US	Through our thesis, we met the KPI of conversion rate. We want to examine from specialists what is the meaning of Conversion Rate? What is for you Conversion Rate?	
D	In general, CR is the percentage of success! Relevant to the action that you pointed as most important which is referred to the CR.	KPU CRI
US	How can you describe that Conversion Rate is giving value to the site?	
D	You are posing a goal having a research about the where do you want your conversion rate will be. After pointing where your Conversion Rate will be, then you are comparing percentages that works well or not, and how you will succeed the desirable result.	KPU CRI
US	Do you have a protocol of conversion funnel that you use related to Conversion goals of your websites?	
D	We have a funnel starting from the 1 st page, where you can first check the prices until the page you actually buying the ticket, so is the bounce rate.	KPU WDP

	<p>The funnel has 5 stages in our company:</p> <ol style="list-style-type: none"> 1) Trends search page, where you can check your search results. 2) Up-sale page, where there you can upgrade your ticket. 3) Login/ As a guest options. 4) Payment page, checkout page 5) Success sale page. 	<p>WAT</p> <p>DDD</p>
US	<p>We mention DDD that is the most important trend. Do you corporate with developers?</p>	
D	<p>Developers particularly, from my experience, don't have a specific role in data. Mainly, we use them as tools to write and place the code in the website, and by using their expertise. They are helping to get the data.</p>	<p>DDD</p> <p>ROS</p>

Appendix 7 – Transcript E

Interviewer : US

Interviewee : E

<u>Subject of Interview</u>	<u>Transcript Text</u>	<u>Code Used</u>
US	(...) we would like you to share with us some information about your education and your professional experience and your current situation.	
E	Yes but first i would like to ask you a question. Are you aware of the terms in house and agency, in the web analyst profession?	
US	Yes (...explain the difference between in house and agents professional)	
E	Ok so, my first degree was about International Financial Relationships and development of Komotini's University(GR.). I went for about a year for Erasmus (exchange studies) in Sweden for the purpose of language amelioration and to see how things work abroad and then after this I went to Amsterdam to have my MBA studies in the University of Amsterdam. After university a made a little break for a 6month period in London where my first job was around Digital Marketing (Digital Marketing executive). I was involved that is related with email social media paid campaign in a corporation inhouse. Then I turned to decision making and I switched my attention to Web Analytics and I was interested with Google analytics which I 've integrated to the web site of the enterprise I was working. But I wanted to get involved mostly with the area of Web Analytics so I joined the purposes of the company I am working currently. I 've been working 3 years and 3 months there. My role in the enterprise started from this of the web analyst and we did from implementation of google analytics till analysing of data. And the last 2years I am a manager with a team of people who are doing analysis that I 'm on the decision making on acts like this. In this moment I may describe you the company i am working with is named Periscopics which is	WAR

	<p>called as performance marketing agency. Performance marketing agency is a new term, that emphasises mostly with data, that everything is driven from data. Now my team is involved with pieces of work of analysis like CRO, AB Testing, Attribution modules (special analyst that takes pieces from the site and regulates how the marketing budget will be spent before the development of the site attribution), we've got Data Scientist which are involved with modelling forecasting etc.. So we're working with a model that takes the traditional Web Analytics we were used to work with into modelling forecasting , predictive analytics and many more.</p>	
US	Can you describe us with few words, related with your professional activity, about what is Web Analytics for you?	
E	Web Analytics is the tool of the present and definitely of the future, that each enterprise should take concern for the right decision making according to the management of their budget and their digital appearance.	WAT
US	Which user-data you take concert in your enterprise? What KPI is of your major interest? If yes please provide us some info about the tool you are using.	
E	<p>Imperatively from the perspective of my job position (Digital Marketing Executive) It depends relatively to my customer. For example one of our customers named Cannon (e commerce site) KPI has are concerned mostly with the revenue, conversion rate, average order value. I have customers enterprises that are insurance companies, now we talking with totally different perspectives of data as high quality traffic. Lastly we have customers that represent supermarkets so the KPI of major interest is the basket size how many things in baskets. Depending upon the customer we have totally different data and KPI to play with, the most important thing that we insight is that KPI changes. Let's say we have a site that we trying to redesign it, the initial KPI would be different with those of a customer which I am consulting 2 years or more who would want to launch a campaign etc. KPI's are in high estimation but, the logic is that they are subcategorized repeatedly according to the period, the situation according to, according to marketing campaign, the period etc. I wouldn't talk with the Head of a company for the conversion rate of landing page, but only</p>	KPU

	about the revenues. The KPI's of interest depends to the situation and the stakeholder which is involved with.	
US	In your opinion which KPI is related with/ linked with the design of a UI. Which KPI triggers you according to your professional experience that this metric could indicate a re-designing in the web interface of the website	
E	It depends. The favourite catch phrase of a web analyst is "it depends". But to make it more simple, if we want to start from somewhere, not to speak hours about the whole nature of KPI , there is not web analyst that does not consider the "bounce rate" as the more principal KPI. If it may happens and you have read Avinas Kaushnik, the guru of conversion rates with Justin Cotroni , who refers that the use who has visited your site, through up and fled. Which means that no matter what information your site contains the user would be only concentrated in the first/landing page he will visit. So whichever analysis you have made or design , you must have in mind you should capture the user from the landing page.	KPU
US	I would rather to induct the Web Analytics in the concept of web design which is the one of our major interest, for our dissertation purposes. Have you ever involved in the concept how Web Analytics are rendering value in the Web Development Process? (elaborates...with example)	
E	As a fast answer I would reply that without doubt they influence web design... Your question though had two edges: Firstly how principal role Web Analytics play in the table of discussion (development design processes) and the second one is the more practical, if the component of Web design web development includes a factor dedicated with Web Analytics.	WDP
US	Exactly, please elaborate.	
E	In the second question, without wanting to be biased due to our job's nature, I would rather say that you cannot have a new site implementation or redesign without having data. The era that web developers or designers were responsible for that has finished. In my experience the biggest debates	WDP

	<p>that i had were with web developers, because of their perception that they were the lords of the site, and objectively that we try to implement is that the web developer is a very skilled translator that of what the data is reflecting us. When coming to design there are some patterns some colours some principles of design that should be followed but the new trend is that we ‘ve got Web Analytics that they show us which strategy we should follow</p>	
US	<p>Developers are following motives and trends Web Analytics are reflecting us. How are Web Analytics interpreted and or reflected with actual design or reformulation of web design?</p>	
E	<p>It's a mixture of factors. Especially for the concept of web design you got to perceive which changes you got to do. It's a mixture to track the actual problems of your web site where it have issues , when you're gathering the data fetched from your site you can distinguish some plot holes, and you assert that this point it doesn't working properly etc. After that follows the issue, of how you fill this plot holes in your web site? You fill them doing experimentation. Like AB-C testing . Let's say we have a simple e-commerce site that has 5 pages from the product till the confirmation that every user has to follow. You know that in your 3rd page, from the funnel report you're losing a 70% from your users. That insights you that there you have an issue so you should go and search it. That's the part that you get insights from data. Afterwards emerges the job of the analyst. In order to examine the page and inspects what the h*** this page has. It's a problem of it design, is it a problem of the value for money implementation, the value proposition has issues, is it something that complicates the user? That's coming from knowledge, from research, from competitive analysis but also what's going on on the surrounding market. The next stage is that you acquire the recommendations , and you reflect that" I would assume that this page, could be optimised/corrected with these 5 different ways. You are testing this way's simultaneously with the way we mentioned before. So once more you leave up to the data to decide for you then doing for a month tests you reflect that the users that they have seen this page they have been converted towards 80% better than the others. So it all about the opinion of data, not the web analyst -- then forth comes the role of the developer to build the site according these instructions.</p>	WDP

US	Please describe us, an example of a change of UI due to the insights of Web Analytics you've witnessed recently ?	
E	<p>The example I've mentioned you about the e-commerce is classical. For example a customer may come and state that, "I'm not interested in redesigning" i Just want to perform better. So our goal is better performance. We try to track the holes in the web site. Most probable is to check the landing page. We distinguish that 70% of the people, that you have invested for your site, is bouncing , you lose a lot of revenues. So you check the landing page, according to its traffic. It's very important to check the people whose visiting for the exact page for what purpose he is coming. You are not gonna handle the same people who is visiting you and is already a customer, with one page with people derived from organic search and who punched at google "shoes" and derived to you. It's very important to understand why each of these users are coming there. So you must understand each landing page differently what user wants and then you claim. If this page is a page that I've inquired for shoes and I was landed there can I find what I want? Does it have the value proposition? Do I understand what I should make? Is it difficult for me to perform my initial motive? Is it attractive? I has the right prices..etc.</p> <p>The five ways to describe a user is firstly as Direct, or saved as a bookmark. The second through a search engine, organically or paid from adds. Thirdly from reference, like whichever different site than a search engine (social media, blogs etc).And the last one as emailed.</p>	WDP
US	I would like to change topic, and ask you something around the stakeholders of your activity that you can describe us.	
E	<p>It depends according to the customer. I will try to give a more general explanation. I'm seeing customers that are considered to be of old school, old fashion if i may say, that Web Analytics are included in the IT department. The last decade, Web Analytics have invaded the department of marketing, with the basic purpose to help the marketing department to bring more people, increase the revenues etc.</p> <p>And the last trend that I may find in small groups of customers (in terms of agile customers) analytics have their own team and they have their own position among marketing,</p>	ROS

	sales, finance, management, IT etc. As analyst you would have to be in touch with the developer, to converse about tracking, as web analyst you owe to converse with marketing and e-commerce team, but also you can have a conversation with the finance department..	
US	More generally I would like to ask you, who is getting involved mostly and has the most responsibility for the development of a successful web site in your opinion.	
E	This answer is related with the KPI's as an answer. Which means, the website of each enterprise, we should practically consider it as a real estate, each one has a share of it(a piece). No one is particularly responsible. So the IT manager is responsible for the site to be up hosted/not to be down-times and to be agile (fast responsive for users), marketing is responsible that this thing would render revenues so it is judged by this. How the website would look alike is the responsibility of the CRO's. Accordingly the generally responsible for the success of the website could not be attributed to a unique person.	ROS
US	What is conversion rate for you, as a title and in your professional experience.	
E	Conversion rate for us is the percentage of users that did the action that we wanted to do towards the total amount of users. E.x. if 1000pers. Enter the site we calculate how many of them pressed the magic button that is describing your goal.	CRI
US	So how could you describe the value conversion rate could offer on your site (related to motives- incentives of the enterprise)	
E	Conversion rate has to do with the action that is the result expected from the user, the proliferation of this percentage is unreachable connected with the success of the revenues of the enterprise. Conversion rate has to do with many things. For example if you are an ecommerce site to count how many things you've sold, but in the other hand you can estimate conversion rate with the number of subscribers in our newsletter which is a micro conversion towards in macro	CRI

	conversion.	
US	Apparently you are familiar with micro and macro conversions, so could you provide us some examples about them?	
E	I 'll share with you the term I'm using when I'm doing training to my customers. Macro conversion is every metric or action in your site that if you're succeed to raise it , it will provide your raise (of your salary) bonus and it will render you great to your manager. Easily a macro conversion in a ecommerce site is the revenue. Micro conversion is any action of your website signifies that in a later moment a macro conversion will occur. Ex social media like, mail later subscription etc.	CRI
US	Do you have an example of a conversion Funnel you are using for your web site?	
E	Many times when new customers are coming, they've been mistaken that in the beginning of the funnel is the homepage. Homepage is the biggest part of the site's real estate, every user is going to and you don't know why everybody is going there. So entering someone in your homepage he could do it in order to find the phone, or read your blog, or book a ticket or by accident etc.. So you shouldn't consider the home page as a part of the funnel because you gonna perceive a big drop off without any value. So in my experience , the first layer of the funnel should be the product listing pages, afterwards product specific page and then basket , checkout, information etc.	CRI
US	We have discussed eventually about data driven development, as you mentioned you have collaborated with developers in your work. Could you share with us how developers take advantage of the data of the Web Analytics tools, in order to create value in a website..	
E	In my experience, as an agency with developers we go to discuss implementations approximately . I haven't been in a conversation only with developers how to do something. The actual conversation I had as an analyst with developers was that, I wanted to do something , and I would know from the beginning that somewhat like this it should be done. And	DDD

	afterwards we would have a conversation, on how specifically we go to implement it. But no, how to change the site according to the data of the developer etc.	
US	You are investigating apparently the behaviour of your visitors users right? Are you giving to developers a concrete instruction on how improvements we should implement for interface optimisation?	
E	I will give an example that i ve got experienced. In a course with a client involved with insurances, we were examining his website funnel, which was consisted from 5 pages. In his last page, you consider as a given that in order to buy an insurance, you've been asked 152 things to confirm the type of insurance you go to acquire. So when someone was arriving in the final page with the aim to press the last button he had offered 30' of his time as an investment, so there you were estimating that you would have the least drop-off. Which means that from 4th to 5th page 99% of users should pass. And in a particular time frame this percentage has mitigated to 90%, which signed alarm in the analyst department. So we went to the stages of this analysis, we went to the page and we saw what is happening to the page? Its looks like it's the last page when the user is expected to press the last button, there is no mistake. Not prolonging the story , we were lucky enough to have a secondary tool named session camp which literally subscribes your image of the web site and the cursors moves. So every subscription the software was sending a particular code. And with this way we debugged the cursor problem with the button (...). Developers will take insights from us, mostly when something is not working or sending error not about changing the UX	DDD
US	How we can link the UX interpreted with Web Analytic tools	
E	We are using Web Analytics, in order to answer the question "what" is happening to the web site. The tools are those session camp, Hotjar, google analytics together with the analyst they describe you "why" this is happening. Analytics will give you numbers about bounce rate , or conversion rate. Why is something happening and how can you change it is the work of the analyst with the tools.	DDD

Appendix 8 – Transcript F

Interviewer : US

Interviewee : F

<u>Subject of Interview</u>	<u>Transcript Text</u>	<u>Code Used</u>
US	(...) we would like you to share with us some information about your former and current professional role and situation. You are working right?	
F	Yes, I was working as a web marketing manager. I was working the last 2 years in companies here (Barcelona's related local enterprises) In the online advertising sector, basically with hotel establishments but also with the promotion most basically with search marketing, and display with channels as Facebook LinkedIn etc. With basic priority Adwords. Essentially the search marketing and remarketing which is my main domain of interest relating to my customers, last month i work as a freelancer, I tried to work as for myself through the platform of AppWork that i claim jobs through my profile. My most important and frequent jobs there are jobs of maintenance of advertisements, it is not common to find works like marketing campaigns that start and finish. All my job are related with statistical data , conversions etc.	WAR
US	Ok in assume due to the content of your answers that you are aware of the KPI (...explains more about them...) My question concerns about which user data are you're interested in more ?	
F	You mean though Web Analytics which info that i take from the user i consider them most useful?	
US	Precisely	
F	So according to the KPI 's I am taking concern more to collect data for the user firstly considered is the bounce rate, which is the no. of how many users have reached the website and then bounced away. This consist also with the pages per session (average time of user in web site which is related with also with the	KPU

	website (gives example with landing page ...)	
US	So I assume that the KPI's that concerns you most are : bounce rate , average user time page per session etc, right?	
F	Yes these are the basics but of course if you are interested in different conversions you use some particular KPI .	KPU
US	So accordingly with what analytic tools have you been involved with?	
F	Mostly with Google Analytics.	KPU
US	I would like to describe us how the OKR (object key results) of each incentive are linked with the KPI of your interest?	
F	I could directly involve a KPI we haven't mentioned before, is the repeated users. (the new users towards the old). If we wanted to implement a brand awareness for our web site (increase our brand awareness) In that case we may be interest to have unique users. So this number would be important, which means to see which users of those who have landed to your website have been here again (for example being members already of this service) or its their initial time here (newcomers) (gives a thorough example with development of site due to cultural differences and device differnces...)	KPU
US	What metrics according to your experience are influencing the user interface design	
F	I have not been involved with web development though i can answer you according to my experience and I' m going to give you some examples accordingly. For example if we have the case of an ecommerce/ e-shop and we have a funnel to see from where the user has approached us and which are his steps to towards the purchase, in this case we can see the exit points. You try to understand through them- exit point- why the user is interacting like this and then to adapt the interface to be more user-friendly or to contain less information for example not projecting the banner in front of him. So having the exit polls of Web Analytics you can without doubt have this	KPU- WDP

	as a base to develop a more efficient user interface. Accordingly you can change your design with the concept of mobile usage, if you track that the majority of your users are coming from mobile devices, you can declare that our web site should transpose to a more mobile friendly environment, and the mobile version should be the basic version of our web site , for example one page website.	
US	Can you give us the hints that Web Analytics could help to add value in the web site process of the development of one page.	
F	The repetition of the content or modules have showed us that it gives some insights about the web design. Which means if I have a subscription area, if I put it in several different areas in the website it have shown to have more effectiveness. Now I can mention a Web Analytic tool which I hadn't before that gives you information about to track what content the user is looking at the website and where he s navigated with his mouse. This serves to distinguish better the zones that the user is concerned about your site and then to add there around the elements that you consider most important.	WDP
US	Who are according your experience working with companies, the stakeholders who are involved with the development the design or the maintenance of the goals of a website?	
F	You mean even from the revenue manager of the an enterprise?	ROS
US	Yes I want to draw the image from your experience, who are the individuals that are involved in the utility goals of a web site	
F	Its different according the length or the range of the enterprise, but if we are talking for example for a big hotel , the basic one is the revenue manager who is in charge of the different channels. Afterwards we ll have to go to online marketing manager who will state on target what I need, or specify our targets. (Gives..some examples about the role). Then when you have specify your targets either in source or outsource you will come to contact with your web developer where you will analyse, how you gonna build your website via templates, or design from the beginning , or to do optimisations. If you want to do it from the beginning you will need a graphic designer as well.	ROS

US	You as web marketing manager, personally with whom you have collaborated in your working environment?	
F	When I was working in the big enterprise that essentially i had direct link with the company we were promoting with one particular person. For example the marketing manager of the enterprise and I had undertook the marketing management of a specific campaign. Either on smaller projects with the general manager of an enterprise, in some occasions. So in some cases that my work involved changes from the website that i was not aware of how to perform them, I had to talk with the company that was in charge with the specific web site and to see if could make the changes that i would want to.	ROS
US	So the responsibility of the web site effectiveness is not on the hands of the marketing brand manager?	
F	I would rather say no. But the goals - macro goals of a website definitely sources from them, but after that the implementation an whatsoever according to the responsibility is not in the hands of marketing brand manager.	ROS
US	We have seen many times in our inquiries, the term about conversion rate. Please describe us what conversion rate means to you?	
F	Conversion rate is the percentage of the users that done one action like whatever you desire towards the sum of the users of your website, or in particular page, or ad or even whatever. According to my profession conversion rate is people that i have targeted with a specific key or targeted action and those having clicked this add for this specific enquiry, i will consider as conversion rate the percentage of people usefull for that specific campaign. Conversion rate could be combined many times with ROI. (..gives example with ROI and low conversion rate numbers..)	CRI
US	Can you give us some examples from micro and macro conversions?	
F	If you want to check it from another perspective you might be interested in the micro moments of google. Its something brand new that google tries to establish and I can consider that as a	CRI

	<p>user I can assume that the user from his mobile the specific time before going to sleep is going to search for something specific - like what kind of shoe colors are in trend this year lets say. So triggering the reading of a related web site content that is considered as a micro moment, you have with few words all the users data that you need. So next morning he will search the new brand name you have provided him of a new trend that he has retrieved yesterday night. So with different techniques you should intrigue or drive the user to integrate in a specific path that will introduce you to your micro goal, which is the buy of the product or whatever. Same happens in the website where micro conversion or macro conversion, in a complete web site where an online purchase is performed. The concept that someone is able to put a product in the cart is according to me is a micro conversion, at least i see the interest of the user.</p>	
US	Can you describe us a procedure or the stages of the funnel conversion that you have met in your career?	
F	You mean in the web site?	
US	Yes I'm referring to the inbound website funnel. But is there an out-bound funnel ? Now that you mentioned it	
F	<p>I wouldn't consider it as a funnel. But i would say the procedure of if someone is leaving your website how can you bring him back or in the next step.</p> <p>So you enter in the web site, let's say an ecommerce site. You go in the categories, you retrieve the particular category, you find different items, you add them in your cart, in this point the site is giving you the capability of cross selling or up selling, which is very important in a web site. For ex. I ve been in a site to buy a bike and the site project me recommendations like do you want also a bike seat , this is considered as an up selling. From the moment the user has joined the funnel you try to convince him to buy more products or to see further products, like amazon is working. But you must be careful not to overload the user because you risk user experience or could confuse him and lost him. Additionally this feature you cannot implement it in mobile, due to its agility has a totally different funnel. Another part of the funnel as an outside component is considered the remarketing which is known from the small ad banners that during your navigation reminds or show you about what have you</p>	DDD

	checked from before.	
US	Data can create and influence the website or feedback the site or from the User experience of the user. Have you ever been involved in Data driven development related with user experience data?	
F	<p>With the purpose to create your website you have to consider variables as best practices ,former implementations and competitors use, but not live data. To develop a web site from its basics data does not play such important role, each site is in a different category with a lot of variables that you dont have in mind for the initial steps of building a website (like web practices, but you have not data in this particular step) because the data that you have are either offline or from competitors, that give some base but not the competitive change that has the appearance of the web site.</p> <p>I could retrieve ux derived data from exit points, entry pages, to track and manage the interest in a page from the users. I ve only been involved with analysing landing pages, which is very accurate to see all the data provided easily due to its compactness. With AB testing for example like bounce.com, you can check the for the same content, a diverse range of landing pages with the same visitors and people involved around it. And only by modulating the interface to draw conclusions which obviously works better than the other. Because it's in the nature of AB testing to have some variables static, otherwise it's a totally different thing.</p>	DDD
US	So when we talking about Web Analytics we talking about redesign right?	
F	Right	
US	I would like finally to ask you about the length of the companies you were working with and some info you could share with us about your working environment.	
F	It was an agency, multinational named TravelFlick (online hotel representation around the world) with 800-900 employees US.	

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