Applying the value grid model; an examination of Google

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ABSTRACT In the last twenty years Google had a tremendous growth, from a small project of two PhD students to one of the most valuable companies on the globe. This growth is characterised by the versatile of the company, next to its search engine, Google explored many different value chains along the way. In this study the value grid model is used to examine their movements. It can be stated that Google used, and uses, the paths/dimension as implied by Pil and Holweg (2006) to explore new opportunity and demand. The main reason why Google is able to do so, is because of its board and management, who are innovative, and open minded. Next to the top management is the appearance of Google in many different sectors and value chains a reason of their growth. The variety in businesses allows them to create a "Google experience", and thus a competitive advantage in comparison with their main competitors who do not have this ability.

KEYWORDS *value grid model, value chain, Google, Alphabet, opportunity identification*

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1. INTRODUCTION
Modern-day life has changed tremendously by the influence of Google. It is nearly impossible to spent a day without either using a Google (since 2015 Alphabet Inc.) service, or seeing somebody using one of their services. The rapid growth of the, in essence, search engine, is interesting from both, an academic, and a practicers point of view. Although that Google is nearly everywhere, and that their growth and strategies are fairly interesting, is the amount of business studies regarding the company relatively low. Which is a shame, since there are undoubtedly many valuable lessons to be learned from Google.

A lack in the amount of studies is visible for the value grid model as well. Pil and Holweg (2006) introduced this addition on the value chain model. Due to an increase in complexity of production and service delivery, the question raised in what sense the value chain model was still applicable. With this more holistic approach of this model, modern companies can identify opportunities to improve their business and to gain demand. However, although that the model could show a great amount of information and valuable insights, there is

a shortage of studies that apply or examine the model. On the bigger databases, there are less than 20 hits when searched for "value grid model".

Research question

As there is a lack of specific studies regarding the value grid model and non-manufacturing, internet based companies, the aim of this paper is to explore how the value grid model applies to a non-manufacturing, internet based company. In addition, Google's case matches well with the grid model since Google operates in a fast-changing environment and is continually innovating (Steiber & Alange, 2013). Due to these reasons, the research question in this study is;

How does the value grid model apply to Google?

To answer this question, this will present the evolution of the value chain to value grid model. Followed by a comprehensive review of the value grid model. After the theoretical background, the company background of Google will be discussed, with an explanation of their services and acquisition strategy

2. METHODOLOGY

As the value grid model is a fairly new research area the available literature is rather limited in certain connections. To ensure to accumulate a relatively complete census of relevant literature, there was made use of the recommended approach to determine the source material of Webster and Watson (2002). Who state that to find

relevant source researchers should follow the following structure:

1. Start with the leading journals, the major contributions are likely to be found here
2. Go "*backward*" by reviewing the citations for the articles identified in step 1
3. Go "*forward*" by using the Web of Science to identify articles citing the key articles identified in the previous steps.

Despite the fact that Webster and Watson (2002) limit the first step to leading journals, in this study there was elaborated on this approach by using online databases, such as, World of Science, Google Scholar, and Scopus.

The following keywords were used to find a first batch of relevant information: *Value Grid model, applying value grid model, and Value chain model.* The articles abstract and conclusion were reviewed to receive a first valuation of the content. In addition, there was made use of several official documents, and statements of Google, completed with relevant information from well-known news provider, in order to map their services, acquisitions and reasoning behind it.

3. THEORETICAL BACKGROUND

In order to answer the research question, a framework of theories is build to apply on the case of Google. The theoretical background exists of two main parts; the first part focusses on the evolution of the value chain model towards the value grid model, the second part is aimed to provide

a deeper understanding the value grid model.

3.1 From chain to grid

In 2006, Pil and Holweg introduced the value grid model. The value grid model is an evolution of the traditional value chain. According to Pil and Holweg (2006), the traditional value chain allows managers to create profitable strategies and coordinate operations, however, it can also put a stranglehold on innovation. Pil and Holweg (2006) state that opportunities for value creation are often originate outside the traditional linear view. Due to these limitations of the value chain model, Pil and Holweg (2006) created the value grid model.

The value chain model was introduced in 1985 by Porter. The value chain includes all the activities involved in product manufacturing. Because the model maps out the different activities, it is a useful tool to measure the amount of value that is created by each activity in the creation process. For the firm, it is important to make sure that the activities add enough value in each step-in order to make the consumer willing to pay for their product.

The activities in the value chain are split in two groups; the primary activities and support activities. The primary activities are the actions that create value for the customer. It is vital that the created value exceeds the costs, resulting in a profit margin. On the other hand, the support activities concern indirect involvements in the manufacturing, such as human resources. Porter (1985) elaborated on the value chain with the value system, in which he includes a network of interconnected value chains between suppliers and buyers.

Although Porter's (1985) findings are widely accepted by practitioners, others have critic on Porter's value chain, for instance, Huemer and Furlan (2011) state that the logic of the value chain leads to conventional boundaries of business systems that conceal other important structural dimensions. According to them, is the value chain constraining firms to certain integration and positioning options. Like Huemer and Furlan (2011), are McPhee and Wheeler (2006) having critic on the value chain, they suggest that focusing on the firm's internal core activities is not sufficient to generate value in modern-day firms. Therefore, they included a set of expanded business activities in the model. As well as a redefinition of value that incorporates brand, reputation, and relation-based value. This new value definition gives firms the possibility to assess how its strategy affects their "hard" and "soft" assets (McPhee and Wheeler, 2006).

3.2 Value grid model

As stated before, were Pil and Holweg (2006) one of the researchers with critic on the value chain model. Pil and Holweg (2006) state that even though the value chain allows managers to formulate profitable strategies and coordinate operations, it can put a stranglehold on innovation, because innovation often originates outside of a traditional, linear view. To overcome this problem, Pil and Holweg (2006) created their own, holistic, value grid model. This approach allows companies to move beyond traditional industry lines and linear thinking, as well

as map out opportunities and threats. The value grid gives managers the opportunity to identify where other companies obtain value, line up critical resources or influence customer demand (Pil & Holweg, 2006). The grid has a variety of pathways (or dimensions) to enhanced performance, these pathways are vertical, horizontal, and diagonal. Whereas the vertical paths explore opportunities upstream and downstream from the adjacent tiers in their value chain, the horizontal paths describe the opportunities from spanning similar tiers in multiple value chains, and in the diagonal paths, companies look across value chains and tiers for prospects to enhance performance and mitigate risk (Pil & Holweg, 2006).

3.2.1 Vertical

As stated before, vertical paths explore opportunities upstream and downstream. Within this vertical dimension, firms explore nonlinear paths by looking beyond those who are directly connected to them in a downstream (in the direction of the end-user) and upstream (in the direction of their suppliers) direction (Pil & Holweg, 2006). When trying to control downstream demand, companies usually control who drives the purchase decision in the supply chain, in which customers typically generate a demand for particular intermediate products (Pil & Holweg 2006). As an example for this type of control, Pil and Holweg (2006) give Intel Corp. who try to increase the demand of their product by making computer buyers more aware of its chip sets, resulting in buyers preferring computers with intel chips. According to Pil and Holweg (2006) is it not always possible to control or

influence the customer directly. Therefore, a broader perspective on how to control where the purchase decision is made is needed. On the other hand, Walker (2007) claims that vertical integration is in its infancy as an area of research, and therefore rather difficult to apply this strategy.

3.2.2 Horizontal

In the horizontal dimension firms examine opportunities in parallel chains. Companies move across value chains to leverage its competencies, risks and seize value in other chains. By doing so, companies develop novel value propositions that are inaccessible to those who operate within a single value chain (Pil & Holweg, 2006). This move across value chains results in multiple sources of demand, which, on its turn enables companies to leverage economies of scale. The economies of scale enable enterprises to manage their risk in a more efficient way. Søilen, Kovacevic, and Jallouli (2011) state that companies with a higher degree of vertical integration are in a better position to coordinate upstream and downstream activities, resulting in higher margin. For instance, companies in which sales are influenced by seasonal changes could move across to another value chains to sell products in other products or contexts (Pil & Holweg, 2006).

3.2.3 Diagonal

When companies operate diagonally, they operate across tiers and parallel value chains. The firm takes an integrative approach to gain access to vital information. as well as additional opportunities to ensure and enhance

demand (Pil & Holweg, 2006). There are two strategies advantaging of the diagonal approach, these are pinch-point mapping and demand enabling (Pil & Holweg, 2006). Pinch-point mapping is the mapping of suppliers that product the key upstream inputs of the product. This is extremely important for most companies since their products are heavily influenced by these suppliers. Since these suppliers are mainly the drivers of development within its markets, companies who fail to monitor, follow and manage these pinch points can run into problems. "Demand enablers" on the other hand examining the value chains of other industries, which can reveal new opportunities to leverage competitive advantages. The specific company believes that it has a particular expertise, in a given value chain, that can be relevant in another value chain as well (Pil & Holweg, 2006).

3.2.4 Critical success factors of the grid

To be able to successfully use the grid model, Pil and Holweg (2006) state that this requires a managerial evaluation of the organization's value proposition and associated structures, from three different perspectives: the impact on existing operations; innovations out of existing operations; and dynamic shifts in the value grid landscape. In addition, they state that a company can make better decisions about ways to shift control over the demand and manage risk, by obtaining a deep understanding of what drives purchasing decision. Pil and Holweg (2006) state as well that monitoring of the value-grid landscape must become an integral part of the decision-making process of the firm. Due to its complex and dynamic nature, is it important to continually explore, evaluate and map the competitive landscape.

4. COMPANY BACKGROUND

Google was founded in 1996, by Larry Page and Sergey Brin. The founders started the company as a result of the creation of the eponymous search engine "Google", while they were PhD students at Stanford university (Levy, 2011). In 1998 Google got its first investment of at least 400.000 USD. With this capital, Google set sail for growth, and moved its headquarters to Silicon Valley (kopytoff, 2004). In 2000 Google began selling advertisement associated on search keywords, in which a keyword was sold to the highest bidder. In 2005, this type of advertisement resulted in a 700 percent growth in the third quarter. Due to a shift of advertisers' strategies from newspapers, magazines, and television towards internet, Google was able to keep growing (Vise, 2005; Levy, 2011).

Google is now to most visited search engine and most valuable domain, leading to a tremendous amount of traffic on the platform, thus an immense amount of workload for the the search engine (Barros, Dean, & Holzle, 2003).

In 2015, Page and Brin founded Alphabet Inc., this conglomerate company is the result of a reorganisation of Google. From this date on, Alphabet Inc. is the parent company of Google, as well as other companies founded by Google before such as Calico (Alphabet, 2015). Page speaks in Alphabet's annual report (2015) about the focus on extraordinary opportunities with the reorganisation of Google. According to

him, the new structure was necessary to facilitate this.

4.1 services

According to Steiber and Alange (2015) is Google's organization a dynamic and open corporate system for continuous innovation. This involves the entire organisation as well as the innovation-oriented top management and board. This reflected by the amount of new services and products Google created.

After the founding in 1996 Google created several new products, and entered plenty of new business areas (Steiber & Alange, 2015). The main part of these services and products can be divided in two groups; Enterprise services, and consumer services.

4.1.1 Enterprise services

As stated before, was the advertisement ability on Google the driver of its first revenue, next to being the first revenue generating service, are the advertisements 95% of the income of Google (Google, 2012). Throughout the years, Google upgraded their services with extra features so that companies have more control and better insights. The services that are linked to these upgrades are; AdWords, AdSense, and Google Analytics. In addition, Google even started their own advertising platform, called "Demo Slam". With this platform people can upload their creative tech-demos (Wong, 2010).

Next to their advertisement features, Google offers a variety of online office services. For example, Google offers a subscription based business tool under the name "G suit" which allows companies access to multiple google services as

Gmail, Google Drive, Google Docs, Sheets, 24/7 support and administrative tools. In 2016 Google announced "Google analytics 360 suite". According to Muret (2016) is this a set of integrated data and marketing analytics products. The service aims to provide useful insights, and delivers engaging experiences. With analytics 360 suite, Google is supposed to compete with Adobe, IBM and Salesforce (Marshall, 2016).

4.1.2 Consumer services

The consumer services of Google have a "daily use" nature, regardless of profession or age. The most used service is "Google search", the search engine of Google. This search engine had in 2009 already a 65% market share (Lipsman, 2009). Because of the quality of the algorithm behind "Google Search", is this used as well in other services such as YouTube, Google Playstore, and Google Book (Steenbergen, 2013).

In 2004, Google launched "Google Books" (previously known as "Google Book Search"). The firm started scanning and uploading books in limited previews and full books, and added this to their search engine. After multiple lawsuits, Google limited their scans to books from the United States, the United Kingdom, Australia and Canada (Pettersson, 2009). In addition to the search option, consumers can buy the digital versions of new books right after searching for them (Rich, 2009). The most noticeable services of Google, next to "Google Search" are probably Gmail, Android, Nexus, and Chrome. In 2004 Google launched Gmail, a web based emailing service. Google is the most used email service of the moment with more

than a billion active users. Gmail was able to grow in this rate because of their significant higher storage space than their competitors (Lardinois, 2016).

Three years after the launch of Gmail, Google announced to be working on a mobile phone project, to be a potential competitor of the iPhone . This project, was Android, a mobile device operating system (OS). Google created the first version of the OS, where after the OS was released as an open source project. Which means that third party developer could use, develop, and implement the software themselves. Android is now the most used OS for mobile devices with more than 1.5 billion active users (Vincent, 2015). The OS is, unlike iOS (the OS of the iPhone) characterised by the freedom to do what you want with it. Next to pre-installed Google services as Gmail and Youtube, is the interface clean and customizable (android.com, 2017; Schonfeld, 2007; Begun, 2008). In addition to their software, Google makes hardware as well. In 2010, Google released their first own Android phone under the "Nexus" brand (Siegler, 2010). After which in 2011 Google released the "Chromebook", a laptop running on its own Chrome OS . Chrome OS was based on Google's web browser: "Google Chrome", which is, just like Gmail and Android in their segment, the most widely used web browser across all platforms (Pichai & Upson, 2009; StatCounter, 2016) .

Hagiu and Yoffie (2009) state that Google plays with platforms that can add value to their business. This explorative mindset results in a bigger variety of products and services. This could be confirmed by Page's, who stated that with the founding of Alphabet more entrepreneurs and companies will be empowered, and more will be invested at the scale of the opportunities and resources (Alphabet, 2015). This mind state results as well in one of the reasons Google became as big as they are, which is the ability to interconnect their services throughout (McPherson, 2011). According to McPherson (2011), is the interconnect, often referred to as the "Google experience" the reason people use Android phones and download Google apps on their non-android phones.

Although all of the different services and products, Lemann (2014) states that Google is a "one trick pony" because its most important revenue stream is the one of advertisements.

4.2 Acquisitions

Since their founding in 1996, Google acquired over 170 different companies. By their aggressive acquiring strategy, they outspent their five closest rivals on acquisitions combined (Business Insider, 2015; Denning 2014). There is a variety of reasons why Google acquired a certain company. Some were bought for their technology to improve one of their already existing services, others were acquired for its patents (e.g. Motorola), while others were acquired and developed as its own platform (e.g. YouTube) (Business Insider, 2015). Although it is hard to predict, what the next acquisitions will be, are there rumours that Google is interested in Spotify, as well as in Netflix (Business Insider, 2015).

5. CONCLUSION AND DISCUSSION

It can be concluded that Google's growth is inherent to the application of the grid model. Where Google started as a search engine, it grew to one of the biggest multinationals by expanding their products and services in vertical, horizontal and diagonal dimensions. To answer the research question: *"How does the value grid model apply on Google?"* will the three dimensions shortly be discussed.

In a vertical way, Google uses certain services to increase demand in the downstream. As stated before, the Android OS, comes with pre-installed Google services such as Gmail, Youtube, and Maps. By doing so, Google encourages its consumers the use of their other services (android.com, 2016). Alike Intel's strategy of creating demand by the end-user instead of by the computer manufacturer, is Google doing this with its Android OS.

The horizontal dimension is the most used path of the value grid model. Due to Google's approach of their technology, was it able to grow in this manner.
Horizontally, Google, looked to other value chains in which they could implement their key competences. In Google's case their key competences are based on software, applications and OS's, for instance, their search engine algorithm. Google was able to duplicate the algorithm, first used for the "Google.com" website, in other Google services such as YouTube and the Google Play Store (Steenbergen, 2013).
In another way, Google did this with the Chromebook. This laptop runs on "Chrome OS", of which the foundation of this OS has been designed as the web browser of Google "Google Chrome" by re-using this framework Google was able to keep costs lower and to remain the interconnection between their services (Pichai & Upson, 2009).

Google has, with the interconnection of its services, a huge competitive advantage (McPherson, 2011). As stated before, is this connection between services one of the main reasons why Google is predominant in our daily life. Even competitors with a broader portfolio of services cannot compete on the level of Google. Google is able to create an added value by combining the powers of its services, to create, for instance, a better online profile of its users for ad sales. As for the consumer, Google has the opportunity to create a full online experience without leaving the boundaries of Google. This are things neither of their competitors can do (McPherson, 2011).

When looking at the last path of the grid model, the diagonal dimension, it can be said that Google uses the "demand enabling" approach. Since Google is barely affected by upstream suppliers, the diagonal focus is pure on other value chains of other industries which can reveal new opportunities. It can be said that Google uses its acquisition strategy when a new opportunity is spotted. In this case, Google moves fast and acquires one of the leading, or innovative companies in this sector. Something that happened with YouTube, Waze, and perhaps in the future Netflix or Spotify (Business Insider, 2015).

Overall, it can be concluded that Google makes use of the different paths in the value grid. Their spreading portfolio allows them to create demand and to make side steps to other, somewhat related, value chains and industries. Due to the fact that Google has no big suppliers, their vision is mainly aimed to its customers, wherever this are enterprises or consumers. The main reason why Google can execute the value grid model in such a strong manner might be the role of the management and the board. Google has an open corporate system for continuous growth, which is reflected by its top management and board (Steiber & Alange, 2015). Pil and Holweg (2006) state that one of critical success factors to implement the grid model properly, is a managerial evaluation of the organization's value proposition and associated structures. Therefore this could be seen as tremendously important.

6. FUTURE RESEARCH

As the study shows that the value grid model can also be applied to non-manufacturers, the authors suggest to conduct further research, regarding the value chain model, in SMEs with a digital, non-manufacturing, character. In this study the case of Google is used to examine the grid model, however, due to its size, Google is not representative for other firms. Therefore, it would be interesting to see how the value grid model is applicable on these smaller companies in the same sector.

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