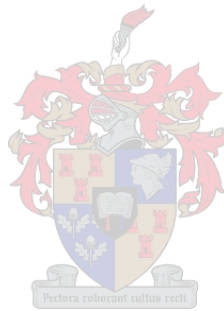


# An Engineering Management Approach to Two-Sided Markets: A Business Model Framework

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Thesis submitted in partial fulfilment of the requirements for the degree of  
Master of Science in Engineering Management at Stellenbosch University

Study Leader: Prof. CSL Schutte

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## I. Declaration

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## II. Summary

Two-Sided Markets is a relatively new phenomenon in the business world that offers extraordinary opportunities to businesses that dare pioneer the promised land of Two-Sided Markets and Network Effects that is still very much undiscovered. A Two-Sided Market exists wherever two distinct groups of users are offered two completely different value propositions from the same Platform. Two-Sided Markets as a knowledge fields is still in its infancy. The Internet has offered various innovation opportunities that have allowed businesses accessibility and greater market reach.

Because of the novelty of Two-Sided Markets executive managers face challenges when establishing their Two-Sided Market business model. This is primarily because Two-Sided Markets is still undiscovered in a research sense and not thoroughly understood in a practical business sense. Also, defining Two-Sided Market business models poses various challenges. This aggravates the challenge of establishing an aligned understanding of a Two-Sided Market business model amongst a group of people. Defining a Two-Sided Market business model is fundamental to establishing an aligned understanding of a Two-Sided Market business model amongst a group of people. Business model innovation cannot be executed successfully unless an aligned understanding of a Two-Sided Market business model is established amongst a group of people.

This thesis undertakes the challenge of developing a Two-Sided Market Business Model Framework that addresses these challenges that executive managers face when executing Two-Sided Market business model innovation. Two-Sided Markets and business model innovation is studied through means of researching the academic knowledge domain of Two-Sided Markets. Throughout the research study Two-Sided Markets and business model innovation is investigated to better understand fields that offer extraordinary opportunities. The gathered knowledge that is studied is used as a means to develop the Business Model Framework.

The Two-Sided Market Business Model Framework is developed to assist with defining a Two-Sided Market business model to ultimately establish an aligned understanding of a Two-Sided Market business model amongst a group of people. The Two-Sided Market Business Model Framework is generic and can be applied to any Two-Sided Market business model.

### III. Opsomming

Tweesydiges Markte is 'n relatiewe nuwe verskynsel in die sakewêreld wat buitengewone geleenthede aan besighede bied wat braaf genoeg is om die onbekende te ontdek. 'n Tweesydiges Mark bestaan waar twee afsonderlike mark groepe twee uiteenlopende produkte of dienste aangebied word van dieselfde Platform. Tweesydiges Markte as 'n kennisveld is nog in sy jongdae. Na die bekenstelling van die Internet is verskeie innovasie geleenthede geskep wat toegelaat het dat besighede 'n beter mark toeganklikheid en groter bereik het.

As gevolg van Tweesydiges Markte ervaar uitvoerende bestuurders uitdagings wanneer hulle hul besigheidsmodelle moet vestig en implementeer. Dit is hoofsaaklik omdat Tweesydiges Markte nog 'n relatiewe onbekende veld is, beide akademies en in die praktiese sakewêreld. Die hoof uitdaging lê daarin om besigheidsmodelle te definieer. Dit is belangrik om 'n verenigde definisie van 'n besigheidsmodel onder 'n groep mense te vestig sodat besigheidsmodel innovasie kan plaasvind. Om 'n Tweesydiges Mark besigheidsmodel te definieer is fundamenteel om 'n verenigde definisie van 'n Tweesydiges Mark besigheidsmodel onder 'n groep mense te vestig sodat besigheidsmodel innovasie kan plaasvind.

'n Tweesydiges Mark Besigheidsmodel Raamwerk word in hierdie tesis ontwikkel om uitvoerende bestuurders by te staan om suksesvol besigheidsmodel innovasie uit te voer. Tweesydiges Markte en besigheidsmodel innovasie word deur die loop van hierdie tesis nagevors. Deur Tweesydiges Markte en besigheidsmodel innovasie deur die loop van hierdie tesis na te vors word hierdie twee hoof aspekte beter verstaan om eventueel die Tweesydiges Mark Besigheidsmodel Raamwerk te ontwikkel. Ook, die kennis wat opgedoen word deur Tweesydiges Markte en besigheidsmodel innovasie na te vors word eventueel gebruik as 'n middel om die Tweesydiges Mark Besigheidsmodel Raamwerk suksesvol te ontwikkel.

Die Tweesydiges Mark Besigheidsmodel Raamwerk wat ontwikkel word deur die loop van hierdie tesis is in staat om Tweesydiges Mark besigheidsmodelle te definieer sodat 'n verenigde begrip van 'n Tweesydiges Mark besigheidsmodel eventueel gevestig word onder 'n groep mense sodat Tweesydiges Mark besigheidsmodel innovasie suksesvol uitgevoer kan word. Die Tweesydiges Mark Besigheidsmodel Raamwerk is generies sodat dit van toepassing is op enige tipe Tweesydiges Mark besigheidsmodel.

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Stellenbosch University and Gent University, my alma maters, thank you for being a launching platform from where I could rocket my ideas and dreams towards the stars. May your foundations stand ever firm and yield many other movers and shakers.

Jesus Christ, you are my Lord, my Saviour and my oldest Brother. Grant me grace to pursue You in all that I endeavour. Not only are you my hope but the hope of the world, may your Kingdom come.

*He who desires to follow me should lay down his life, take up his cross daily and follow me.*

**– Jesus Christ, Luke 9:23**

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# Chapter 1

## Introduction

*Despite the ubiquity of network industries and the attractions of owning a successful platform, the strategic implications of two-sided networks have gone largely unexplored. In the past, this lack of understanding was less problematic because executives usually had the luxury of formulating strategies for two-sided networks through trial and error. Markets today are less forgiving.*

– Eisenmann, Parker & Van Alstyne, **Strategies for Two-Sided Markets**,

**Harvard Business Review, October 2006**

### 1. Introduction

The first chapter of this thesis will first explain the key concepts of this research study before going on to explain the problem that this thesis will undertake to solve. The key concepts that will be introduced are the following:

- Two-Sided Markets,
- Platforms
- Network Effects,
- Multi-Sided Platform Businesses (also referred to as Intermediaries), and
- One-Sided Markets.

After the key concepts and research problem have been introduced the research design will be explained. The research design will explain the way in which this thesis will be approached and completed.

### 1.1 Introducing the Key Concepts

Two-Sided Markets is a relatively new concept in the technology and Internet era (Parker & Van Alstyne, 2005). A Two-Sided Market is a type of customer segment. A customer segment is the target market that a business aims to serve (Osterwalder & Pigneur, 2010).

A Two-Sided Market exists whenever two distinct markets derive value from the same Platform. A Platform is the channel through which a single business serves a Two-Sided Market. Platforms can take many guises but it will not be investigated at this stage of the thesis.

This phenomenon of Two-Sided Markets exists in the advertising industry, operating system industry, payment cards industry and many other which will be explored throughout the course of this thesis.

Businesses serving Two-Sided Markets are referred to as Multi-Sided Platform Businesses. Multi-Sided Platform Businesses serve Two-Sided Markets via a Platform, hence being called *Multi-Sided Platform Businesses*.

Multi-Sided Platform Businesses are also referred to as *Intermediaries* because they mediate interaction and transactions between (*inter* is Latin for *between*) the two distinct user groups comprising the Two-Sided Market. Throughout the course of this thesis *Intermediaries* and *Multi-Sided Platform Businesses* will resemble the same entity – businesses serving Two-Sided Markets.

Multi-Sided Platform Businesses comprise a large and rapidly growing share of the global economy (Eisenmann, *et al.*, 2011). To give a vague idea, in 2007, more than half of the world's 100 largest corporations earned at least half of their revenue from Platform markets (Eisenmann, *et al.*, 2006).

Eisenmann *et al.* (2006) states that Two-Sided Markets are not a completely new phenomenon to the technology and Internet era. Eisenmann *et al.* (2006) does however go on to say that Two-Sided



Markets have become more prevalent, largely because of technology, and more specifically the Internet.

The Internet has opened up a whole new world of opportunities to Intermediaries wanting to serve Two-Sided Markets because:

- The **market reach** of Intermediaries have increased tremendously, and
- The **accessibility that customers enjoy** has increased significantly (Eisenmann, *et al.*, 2006).

The next section will explain One-Sided Markets and compare it to Two-Sided Markets – the main theme of this thesis.

#### 1.1.1 Two-Sided Markets vs. One-Sided Markets

A traditional, conventional business, that are most prevalent has supply on the left of their value chain, provided by suppliers, and demand on the right, generated by customers, hence the value chain flows from left to right with the incumbent business in the middle facilitating the value creation. Markets that are served by more traditional, conventional businesses will be referred to as One-Sided Markets in this thesis. One-Sided Markets are thus a single customer segment that is served by a single business – typically a traditional, conventional business as most people know it. These types of businesses have been around for ages because of its simplicity. They rely on transacting and generating revenue from a single market – a One-Sided Market.

A value chain describes the logic of how value is created for both the customer and the incumbent business that offers a value proposition. A *value proposition* or *value offering* is a product or service offered to a customer that seeks to solve customer problems and satisfy customer needs (Osterwalder & Pigneur, 2010).

Figure 1 is a simplified conceptualization that depicts the value chain of businesses serving One-Sided Markets.

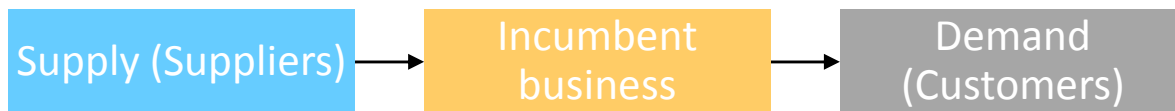


Figure 1 - Value Chain of One-Sided Markets

The incumbent business (orange square in the middle) sources value from suppliers (blue square on the left) that ultimately allow the incumbent business to offer a value proposition for customers (grey square on the right). This generates a revenue stream by serving a market that has a unique demand. A *revenue stream* is the primary source of monetary value of businesses, usually generated by the customer segments that they serve.

Because there is only one market generating a demand (see Figure 1), they are called *One-Sided Markets*.

Two-Sided Markets, in contrast to One-Sided Markets, have one fundamental difference. Two-Sided Markets is a market phenomenon where two distinct markets are served from the same Platform. Figure 2 depicts the value chain of Two-Sided Markets in a clear and simple way.

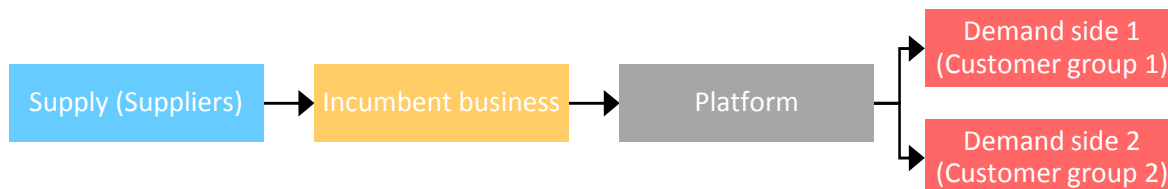


Figure 2 - Value Chain of Two-Sided Markets

As with One-Sided Market value chains Multi-Sided Platform Businesses (orange square second from the left in Figure 2) have supply on the left provided by suppliers (blue square on the left in Figure 2) and instead of just one customer segment on the right they serve two distinct groups of customers (red squares 1 and 2 on the right of Figure 2) from one Platform (grey square second from right in Figure 2).

Platforms are usually some sort of infrastructure, often physical and tangible, that regulates the customer interaction and transaction between:

- 1) The Intermediary (incumbent business),
- 2) The customer group 1 (demand side 1), and
- 3) The customer group 2 (demand side 2) are facilitated.

The following example will better explain it.

#### 1.1.2 Two-Sided Market Example: Google Web Search Engine and AdWords

To better explain and understand the phenomenon of Two-Sided Markets a simple and widely recognized example will be investigated – Google’s search engine<sup>1</sup> and AdWords<sup>2</sup> business unit combination. Few people understand how Google is able to offer a completely free Internet search engine service for the majority of the web search market and profit from it at the same time. Google owns nearly 80% of the market share of web browsers in the world (Internet Live Stats, 2015). Just how are they able to offer a completely free web search service to the majority of the global web search market and still generate revenue?

Google’s value offering works as follows:

- 1) A web searcher uses Google’s search engine and requests a search query, for instance: *“hamburger in cape town”*.
- 2) If McDonalds Hamburgers in Cape Town has signed up for Google’s AdWords service and they have registered the words (hence called AdWords) *‘hamburger’* and *‘cape town’*, their website link will be listed at the top of the search results whenever a web search through Google is done with the keywords *“hamburger in cape town”*.
- 3) If the web searcher that logged the search query decides to click on McDonalds Hamburgers in Cape Town’s website link he will be directed to their webpage.
- 4) As soon as the web searcher clicks on McDonalds Hamburgers in Cape Town’s website link in the search results McDonalds Hamburgers in Cape Town will pay Google a certain amount from their account.

Google offers a networking Platform from where they connect web searchers with website links – Google offers a matchmaking service of some sort.

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<sup>1</sup> <https://www.google.com>

<sup>2</sup> <https://www.google.com/adwords>

Google's primary revenue stream is generated by all the businesses that pay Google money for sending traffic, web searchers, to their website. Google does this by listing AdWords users' website links at the top of the Google search results when a Google web search is done.

It can be agreed that Google does not serve a One-Sided Market but rather a Two-Sided Market consisting of two completely distinct user groups:

- 1) Web searchers using Google's Internet search engine and
- 2) Business advertisers using Google's AdWords service to generate traffic to their website.

Because Google is generating a revenue stream from business advertisers they are able to offer a completely free service to web searchers that want to use their search engine to browse the Internet.

Google relies on Network Effects that exist between the two markets – web searchers and business advertisers.

Many businesses have used Network Effects to their advantage to go from good to great. Although novel, Multi-Sided Platform Businesses have already transformed the business world in many ways.

At the core of successful Multi-Sided Platform Businesses lies *Network Effects*. *Network Effects* is the magic weapon that helps Intermediaries to reach success when serving Two-Sided Markets. It is a competitive asset that businesses utilize when serving Two-Sided Markets.

Understanding Network Effects is fundamental, not only to follow this thesis, but also to understand how successful Multi-Sided Platform Businesses utilize and integrate it into their businesses in order to create unique and often, irreplaceable, value.

### 1.1.3 Network Effects

A quick overview will be done on Network Effects, but only at a later stage in this thesis will this unique phenomenon be fully investigated.

The significance of Two-Sided Markets relies on the phenomenon of Network Effects to create value in the ecosystem of participating parties.

Throughout academic literature respective authors have referred to Network Effects differently:

- *Network effects* (Eisenmann, *et al.*, 2006),
- *Network externalities* (Schilling, 2013),
- *Positive feedback effects* (Cusumano, 2010) and
- *Demand economies of scale* (Parker & Van Alstyne, 2005).

However, in this thesis it will only be referred to as *Network Effects*.

Filistrucchi *et al.* (2012) suggests that whether a market is two-sided or not is an empirical issue but that it relies on the presence and size of the Network Effects. Throughout literature it was discovered that the fundamental aspect that establishes a Two-Sided Market is whether Network Effects are present.

Network Effects is an occurrence where there “*increasing returns to adoption*” exist (Schilling, 2013). This simply means that as the one side of the market grows (increased adoption), the other side enjoys more value (increasing returns) because of the size of the market that increases, and vice versa.

Bearing the Google example in mind, when there are no relevant search results for web searchers for a specific query they are less likely to make use of Google’s search engine. Also, businesses will not make use of Google’s AdWords service if there are not web searchers willing to click on their links and visit their websites. Therefore as more web browsers start using Google’s search engine more businesses will advertise using Google’s AdWords because more clicks will be generated and ultimately generate more traffic for business advertisers.

This phenomenon of increased value as the two sides of the market grow is exactly what Network Effects are. It is increasing returns (increased value) to adoption (market growth).

The simplest form of Network Effects is when one side of the market grows the other side enjoys increased returns – improved value.

Network Effects and the other key concepts that were discovered and explained are fundamental to Two-Sided Markets. Although amazing opportunities exist for Intermediaries that serve Two-Sided Markets there are some challenges that most, if not all, Multi-Sided Platform Businesses serve.

The next section will go on to look at Two-Sided Markets as a unique business opportunity before going on to look at the problem that currently exists in the Two-Sided Market business practice field and academic field.

#### 1.1.4 Two-Sided Markets as an Opportunity

Although Two-Sided Markets is a relatively new phenomenon it has become more prevalent and comprise a large and rapidly growing share of the global economy (Eisenmann, *et al.*, 2011). Eisenmann *et al.* (2011) goes on to say that:

*Examples are as diverse as barcodes, container shipping, credit cards, DVDs, health maintenance organizations, instant messaging, online dating services, real estate brokerages, shopping malls, stock exchanges, travel reservation systems, video games, and web search services.*

The likes of Apple<sup>3</sup>, Google, Microsoft<sup>4</sup> and Visa<sup>5</sup> among many others are only some of the big competitors that have utilized the benefits of Network Effects to their advantage. In 2007, 60 of the world's 100 largest corporations earned more than half of their revenue from Two-Sided Markets (Eisenmann, *et al.*, 2006).

Two-Sided Markets and Network Effects offer unique opportunities that if undertaken successfully they offer amazing potential and return.

If Two-Sided Markets offer such valuable opportunities what is the problem?

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<sup>3</sup> <https://www.apple.com>

<sup>4</sup> <https://www.microsoft.com>

<sup>5</sup> <https://www.visa.com>

### 1.1.5 The Problem with Two-Sided Markets

The problem, or the challenge rather, with Two-Sided Markets are multi-fold. The multiple challenges that Two-Sided Markets inhibit regardless of the promising opportunities that are offered are listed below under the numerous sub-sections.

#### 1.1.5.1 One-Sided Market vs. Two-Sided Markets: Different Strategy Dynamics

Eisenmann *et al.* (2006) writes:

*Yet for all the potential that intermediaries have spotted, they have struggled to establish and sustain their two-sided markets. Their failures are rooted in a common mistake. In creating strategies for two-sided markets, executive managers have typically relied on assumptions and paradigms that apply to products without network effects. As a result, they have made many decisions that are wholly inappropriate for the economics of their industries.*

Strategies for Two-Sided Markets differ from that of One-Sided Markets. Executive managers that have done strategy formulation has relied on knowledge and experience that was focuses on One-Sided Markets. Most of the strategic business & innovation management knowledge and experience utilised by executive managers are not appropriate for Two-Sided Markets. These lessons learned focuses on One-Sided Markets and few executive managers understands that writes Eisenmann *et al.* (2006).

#### 1.1.5.2 One-Sided Market vs. Two-Sided Markets: Different Competitive Dynamics

The competitive dynamics in Two-Sided Markets are also different to that of One-Sided Markets. Schilling (2013) supports this statement by writing:

*Such winner-takes-all markets demonstrate very different competitive dynamics than markets in which many competitors can coexist relatively peacefully.*

*Winner-takes-all markets* refer to markets where Intermediaries serve Two-Sided Markets. These markets are subject to different competitive dynamics than that of markets where there are

primarily One-Sided Markets. The competitive dynamics that govern these markets are also undiscovered and not clearly understood to a great extent.

Cusumano (2010) brings some clarity to these competitive dynamics:

*Who wins and who loses these competitions is not simply a matter of who has the best technology or the first product. It is often who has the best platform strategy and the best ecosystem to back it up.*

Few Intermediaries realise that Two-Sided Markets are governed by different strategic business & innovation management principles, as stated in the written excerpt in the preceding section: *1.1.5.1 One-Sided Market vs. Two-Sided Markets: Different Strategy Dynamics.*

#### *1.1.5.3 One-Sided Market vs. Two-Sided Markets: Different Value Chain Dynamics*

A value chain explains the flow of how value is created throughout a business. Eisenmann *et al.* (2006) has this to say about Two-Sided Market value chains:

*Two-sided markets differ from one-sided markets in a fundamental way. In the traditional value chain of one-sided markets, value moves from left to right: to the left of the company is cost; to the right is revenue. In two-sided markets, cost and revenue are both to the left and the right, because the platform has a distinct group of users on each side. The platform incurs costs in serving both groups and can collect revenue from each.*

These intricate dynamics as explained above by Eisenmann *et al.* (2006) will not be explained right now, only at a later stage. Do however note that the value chain dynamics of Two-Sided Markets differ from those of One-Sided Markets. This brings about yet another challenge to executive managers when managing their value chain.

#### *1.1.5.4 Unexplored Two-Sided Market Knowledge Field*

Because Two-Sided Markets is a relatively new phenomenon the undiscovered knowledge that awaits to be explored is considerable. Because of this knowledge gap that exists Intermediaries face great challenges when formulating strategy.



Eisenmann *et al.* (2006) goes on and writes:

*Despite the ubiquity of two-sided market industries and the attractions of owning a successful platform, the strategic implications of two-sided markets have gone largely unexplored. In the past, this lack of understanding was less problematic because executive managers usually had the luxury of formulating strategies for two-sided markets through trial and error. Markets today are less forgiving.*

Intermediaries face great challenges because the strategic implications of Two-Sided Markets are not clearly understood because it has not yet been clearly investigated.

Cusumano (2010) believes that:

*We are still in the early stages of understanding how common and important two-sided markets really are.*

A sea of knowledge awaits to be filtered through to gather that which is most important when considering strategic business & innovation management implications of Two-Sided Markets.

#### *1.1.5.5 The Greatest Challenge: Establishing Their Two-Sided Market Business Model*

Eisenmann *et al.* (2006) goes on to say that the greatest challenge that Intermediaries face is to “*establish their business model*”. The various challenges that Intermediaries face, mentioned above, adds to the challenge of establishing a Two-Sided Market business model.

The various challenges and gaps that exist in the Two-Sided Market business practice and academic knowledge sphere aggravate the challenge of establishing a Two-Sided Market business model. Figure 3 shows the various challenges, mentioned above, that enhance the challenge of establishing a Two-Sided Market business model.

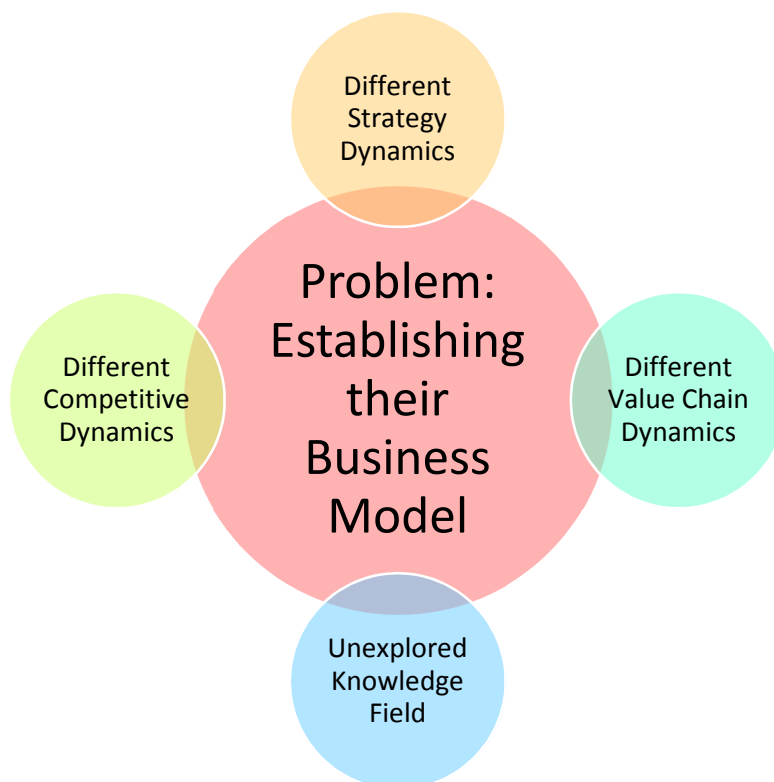


Figure 3 - The Various Challenges and Gaps in the Two-Sided Market Sphere

*Business model innovation* is the field of thought that is considered when “*establishing a business model*” – the greatest challenge that Intermediaries face (Eisenmann, *et al.*, 2006).

## 1.2 Business Model Innovation

Business model innovation is the field of thought that focuses on managing business model change and improvement. A *business model* is the rationale of how a business generates value, both for themselves and their customers. Business model innovation is therefore the management of changing how a business creates value for themselves and their customers.

In the same way that Two-Sided Markets offer opportunities but still have some challenges, business model innovation offers many opportunities but also has some challenges.

### 1.2.1 Business Model Innovation as an Opportunity

Johnson *et al.* (2008) writes in their pioneering 2008 *Harvard Business Review* article that companies who are truly innovative usually innovate at business model level and not only at product level.

These businesses focus on changing their value creation method and not only their product or service that they offer.

Business model innovation offers promising opportunities if they are to be undertaken successfully (Johnson, *et al.*, 2008). Johnson *et al.* (2008) supports this statement by listing a couple of research findings:

- 11 of the 27 companies born in the last quarter century that grew their way into the *Fortune 500*<sup>6</sup> in the past 10 years did so through business model innovation (Johnson, *et al.*, 2008).
- An analysis of major innovations within existing corporations in the past decade shows that precious few have been business-model related (Johnson, *et al.*, 2008).
- A 2005 survey by the *Economist Intelligence Unit*<sup>7</sup> reported that over 50% of executives believe business model innovation will become even more important for success than product or service innovation (Johnson, *et al.*, 2008).
- A 2008 *IBM*<sup>8</sup> survey of corporate CEOs (Chief Executive Officers) echoed the previously mentioned results. Nearly all of the CEOs polled reported the need to adapt their business models; more than two-thirds said that extensive changes were required. And in these tough economic times, some CEOs are already looking to business model innovation to address permanent shifts in their market landscapes (Johnson, *et al.*, 2008).

Schilling (2013) supports this in writing that:

*Tech design superiority does not necessarily win; the firms that win are usually the ones that know how to manage the multiple dimensions of value that shape design selection.*

Business model innovation is simply that “*managing the multiple dimensions of value that shape design selection*”.

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<sup>6</sup> <http://fortune.com/fortune500>

<sup>7</sup> <http://www.eiu.com>

<sup>8</sup> <http://www.ibm.com>

If business model innovation delivers promising results why are more executive managers not implementing and establishing these changes?

### 1.2.2 The Problem with Business Model Innovation

Johnson *et al.* (2008) have found two problems why business model innovation are not exploited that often. Johnson *et al.* (2008) writes:

*Why is it so difficult to pull off the new growth that business model innovation can bring? Our research suggests two problems. The first is a lack of definition: very little formal study has been done into the dynamics and processes of business model development. Second, few companies understand their existing business model well enough – the premise behind its development, its natural interdependencies, and its strengths and limitations. So they don't know when they can leverage their core business and when success requires a new business model.*

#### 1.2.2.1 A Lack of Business Model Definition

In order for executive managers to execute successful business model innovation they need to understand:

- The dynamics of a business model, and
- The processes of a business model.

Defining these two aspects can be a subjective undertaking. The dynamics and processes of Two-Sided Market business model that will be defined in this thesis will rely on academia to make the defining process an objective undertaking.

#### 1.2.2.2 Poor Understanding of the Existing Business Model

Johnson *et al.* (2008) goes on and says that the other challenge that executive managers face is that they have a poor understanding of the existing business model. They do not understand:

- The premise behind its development,
- Its natural interdependencies, and

- Its strengths and limitations.

Developing a better understanding of these aspects to assist executive managers can also be a subjective undertaking. The development premises, natural interdependencies, and strengths and limitations that will be investigated in this thesis will rely on academia to make the understanding process an objective undertaking.

### 1.3 The Research Gap: Two-Sided Markets Business Model Innovation

The greatest challenge that Intermediaries face is to “*establish their business model*”, writes Eisenmann *et al.* (2011). This challenge exists because:

- Two-Sided Markets have different **strategy dynamics** compared to One-Sided Markets,
- Two-Sided Markets have different **value chain dynamics** compared to One-Sided Markets,
- Two-Sided Markets have different **competitive dynamics** compared to One-Sided Markets, and
- Two-Sided Markets is an **unexplored knowledge field**.

The challenge of establishing a Two-Sided Market business model entails business model innovation at its core. However, although business model innovation offers promising opportunities it is not that easy to execute these favourable prospects that awaits. Business model innovation is an intricate undertaking because:

- Executive managers have a lack of business model definition, and
- Executive managers do not understand their business models well.

The research gap that exists encompasses two separate knowledge fields:

- 1) Two-Sided Markets, and
- 2) Business model innovation.

It can be concluded that executive managers of Multi-Sided Platform Businesses face challenges because Two-Sided Markets is a novel and undiscovered field that is not clearly understood yet. This makes business model innovation in the light of Two-Sided Markets a challenging endeavour.

Business model innovation can happen once a clear definition of the business model exists, and also if the executive managers of the business understands their business model clearly.

#### 1.4 The Solution

This research study will aim to address this challenge that executive managers face when establishing their business model by developing a tool that assists with:

- Defining a Two-Sided Market business model, and
- Understanding the Two-Sided Market business model.

Johnson *et al.* (2008) says that everyone in the business, especially executive managers, should understand the business model at “*granular level*” so that they can reinvent their existing business model – the value creation method. Johnson *et al.* (2008) have found that new business models often look unattractive to internal and external stakeholders at the outset.

Osterwalder & Pigneur (2010) suggests a shared understanding of the business model in order to execute effective business model innovation. Osterwalder & Pigneur (2010) write that:

*The starting point for any good discussion, meeting, or workshop on business model innovation should be a shared understanding of what a business model actually is. We need a business model concept that everybody understands: one that facilitates description and discussion. We need to start from the same point and talk about the same thing. The challenge is that the concept must be simple, relevant, and intuitively understandable, while not oversimplifying the complexities of how enterprises function.*

Executive managers of Multi-Sided Platform Businesses need to have a clear understanding of what their business model entails if they want to successfully innovate towards an improved business model. A Two-Sided Market Business Model Framework will be developed in this thesis that will aim to assist executive managers to better define and understand their business model.

#### 1.4.1 The Two-Sided Market Business Model Framework

This thesis will undertake the challenge of developing a Two-Sided Market Business Model Framework that will aim to confront the challenges identified in the preceding sections of this chapter. The Business Model Framework that will be developed throughout the course of this thesis will aim to:

- **Define** the Two-Sided Market business model in retrospect,
- Assist with **understanding** the Two-Sided Market business model in discussion.

The Business Model Framework will assist with **defining** the business model in discussion to better **understand** it. This will help executive managers with business model innovation, specifically Two-Sided Market business models.

The Business Model Framework will also be developed in such a way that it is generic. The Framework will be applicable to all kinds of Two-Sided Market business models. It is important that the Business Model Framework should be able to define all different types of business models.

#### 1.5 Research Design

The research design will explain the structure and approach that will be used to undertake this study and address the research problem.

##### 1.5.1 Research Problem

The research problem can thus be concluded as the following:

*The strategic business & innovation management principles of Two-Sided Markets have gone largely unexplored and differ substantially from that of One-Sided Markets. This aggravates the challenge that executive managers face when establishing their Two-Sided Market business models. Executive managers face this business model innovation problem because they struggle to define and understand their business model.*

This research problem demands a research question.

### 1.5.2 Research Question

Johnson *et al.* (2008) suggests that executive managers need a tool of some sort to better define and understand their business model. It was decided that a framework will be developed to assist executive managers better define and understand their business model.

The research question that will be answered in this thesis is:

*How does a Two-Sided Market Business Model Framework look like and how does it work?*

To make sure that this question will be answered a research objective and outcome will also be developed.

### 1.5.3 Research Objective and Outcome

The research objective of this thesis is:

*To better understand the strategic business & innovation management principles relevant to Two-Sided Markets. Through better understanding this it will ultimately assist Multi-Sided Platform Businesses in establishing their business model.*

This research outcome that this thesis will deliver in the form of a management tool is:

*A Two-Sided Market Business Model Framework*

The objective will make sure that Two-Sided Markets are clearly understood as a field of thought by researching relevant academia. The outcome of this thesis that will be delivered as a management tool that will assist executive managers of Multi-Sided Platform Businesses to better define and understand their respective business model is a Two-Sided Market Business Model Framework.

To develop this Two-Sided Market Business Model Framework a logical yet simple research structure will be followed.



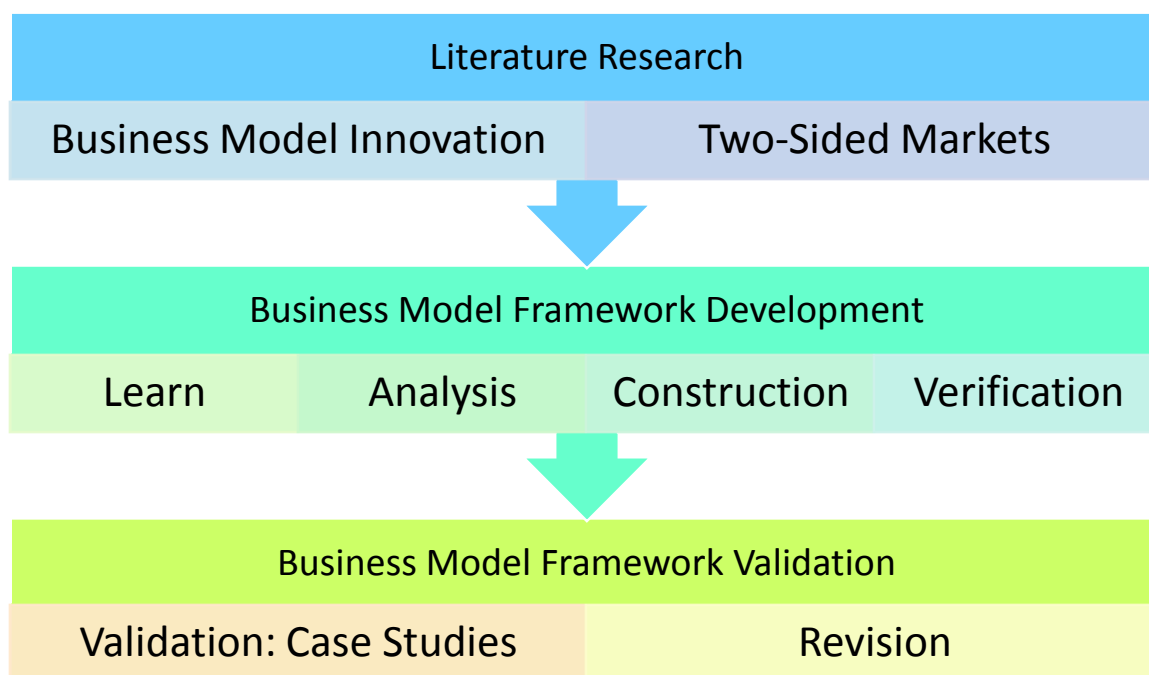
### 1.5.4 Research Structure

To ensure that the Business Model Framework will be developed in a structured and planned way a research structure will be developed and followed throughout the course of this thesis. The research structure is there to bring a logical flow to the thesis and also to assist in developing the Business Model Framework thoroughly and systematically.

The thesis will consist of three main parts:

- 1) Literature Research
- 2) Business Model Framework Development
- 3) Business Model Framework Validation

Figure 4 depicts the three main parts of the research structure as well as the sub-sections that are grouped with the respective three main parts of this thesis.



*Figure 4 - The Three Main Parts of the Research Structure*

The three sub-sections that follow will explain each of these three main parts that comprises this thesis.

#### 1.5.4.1 Literature Research

The existing literature that is available in the academic knowledge domain will be used as a basis to study business models and Two-Sided Markets – the two fundamental facets of this thesis. This will serve to better understand business models and Two-Sided Markets.

The knowledge gathered and learned from the research study will ultimately help to develop the Two-Sided Market Business Model Framework. Design requirements will be identified throughout the course of the literature study from the knowledge learned in the respective chapters. These design requirements will be identified at the end of each individual literature study chapter. These design requirements will serve as building blocks that will ultimately help to develop the Business Model Framework.

Although Two-Sided Markets is still a relatively new research field with a limited knowledge base Cusumano (2010) have found that the academic literature focusing on Two-Sided Markets have been relatively well established and that key concepts have already been identified. As stated preceding this section, the research field of Two-Sided Markets is still relatively new, a section will therefore be dedicated to potential future research at the end of the thesis that will contribute to this novel research field.

#### 1.5.4.2 Business Model Framework Development

The design requirements that will be identified at the end of each individual literature study chapter will assist when developing the Business Model Framework. The list of all the design requirements that will be identified at the end of each literature research chapter will make up the design specifications of the Two-Sided Market Business Model Framework.

### Learn

Before going on to develop the Business Model Framework a section will first be devoted to **learning** from another business model framework that are considered successful. The *Business Model Canvas* that was developed by Osterwalder & Pigneur and published in 2010 in their book *The Business*

*Model Generation*<sup>9</sup> will be studied to learn how they managed to successfully execute the challenge of developing a business model framework that assists with defining and understanding a business model.

### **Analysis**

After learning from the Business Model Canvas the list of design requirements that accumulated throughout the literature study will be **analysed** by making use of engineering management tools. This will be done to ensure that the design requirements are well understood before going on to construct the Business Model Framework.

### **Construction**

The analysed design requirements will be used to **construct** the Two-Sided Market Business Model Framework. How the Business Model Framework practically works will only be explained through applying it to case studies in the validation chapter. The validation chapter will follow after the Business Model Framework development chapter.

### **Verification**

The Two-Sided Market Business Model Framework will be **verified** after the Business Model Framework construction. The list of design requirements will be verified against the constructed Business Model Framework to ensure that all the design requirements were included and that all of the design specifications were met.

#### *1.5.4.3 Business Model Framework Validation*

The constructed and verified Business Model Framework will be validated in the third part of the thesis.

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<sup>9</sup> Full name: *The Business Model Generation: A Handbook for Visionaries, Game Changers and Challengers*

### **Validation: Case Studies**

Case studies will be used to validate the Business Model Framework. Case studies will consider successful Multi-Sided Platform Businesses and applying the Business Model Framework to them. The Business Model Framework will aim to analyse and better understand the business model of the business under inspection.

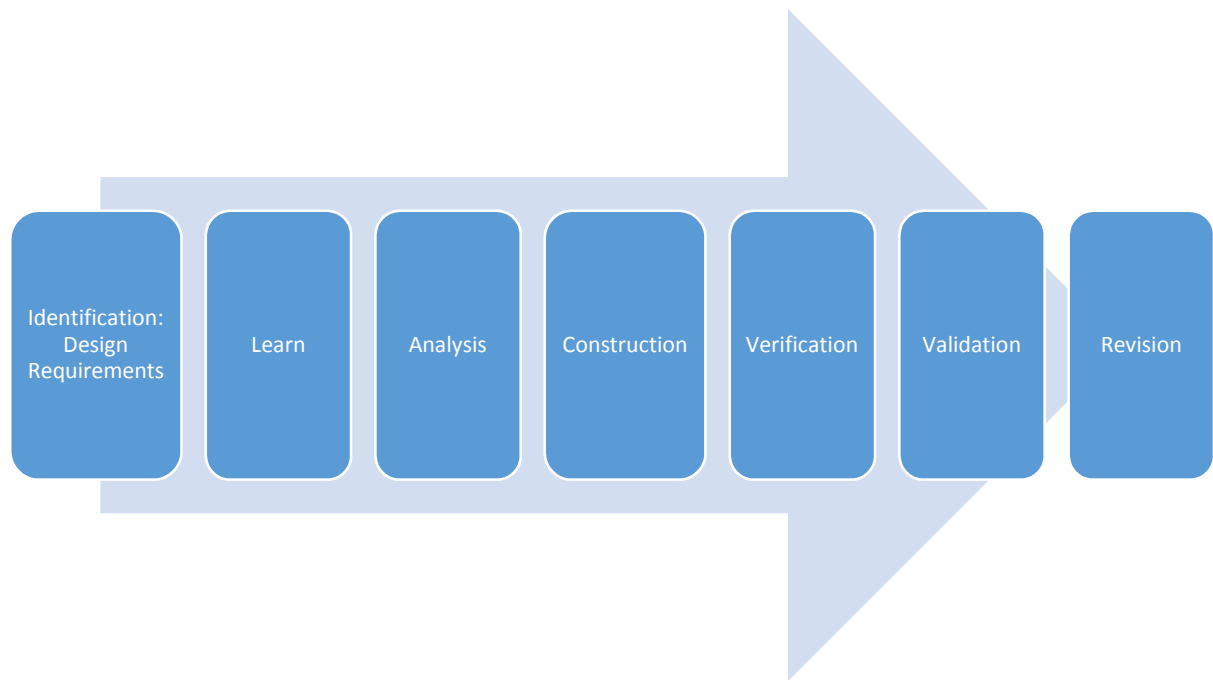
The case studies that will be done will also serve as a means to explain how the Business Model Framework works.

### **Revision**

After all the case studies a section will be dedicated to Business Model Framework revisions. Shortcomings and defects that surfaced throughout the course of the case studies will be addressed in this part of the Business Model Framework development process.

#### 1.5.5 The Business Model Framework Development Process

The process that will be followed systematically to ensure that the Business Model Framework is developed methodically is depicted in Figure 5.



*Figure 5 - The Business Model Framework Development Process*

Each one of the blocks in Figure 5 represents a facet of the Business Model Framework development process. Before undertaking any one of the process steps it will be introduced and explained in the respective chapters.

In order to successfully develop the Business Model Framework the research and development that will be done will be reliant on specific research and development methods.

#### 1.5.6 Research Methodology

The research methodology of this thesis is presented in Table 1. Each row represents a part of the thesis as depicted in Figure 1 on page 4. The research methodology that will be used to compose each part of this thesis will be explained below, following Table 1.

*Table 1 - Research Methodology for Each Part of the Thesis*

<b>Part</b>	<b>Methodology</b>
Literature research	Literature study: Journal articles, theses, textbooks Identifying design requirements: Deductive reasoning
Business Model Framework development	Learning from the Business Model Canvas: Journal articles, theses, textbooks Analysis, construction and verification: Engineering and Engineering Management tools
Business Model Framework validation	Validation: Case studies Revision: Engineering and Engineering Management tools

*1.5.6.1 Research Methodology: Literature Research (Part 1)*

Journal articles, theses and textbooks will be used to do the literature research.

Deductive reasoning will also be used to identify the design requirements throughout the course of the literature study. The design requirements will be the starting point to develop the Two-Sided Market Business Model Framework.

*1.5.6.2 Research Methodology: Business Model Framework Development (Part 2)*

The section that will learn from the Business Model Canvas will use journal articles, theses and textbooks from which lessons will be learned.

Engineering and engineering management tools will be utilised to analyse, construct and verify the development of the Business Model Framework.

*1.5.6.3 Research Methodology: Business Model Framework Validation (Part 3)*

Case studies will be relied on to validate the Two-Sided Market Business Model Framework.

The shortcomings and defects will be revised by making use of engineering and engineering management tools.

## 1.6 Conclusion

Two-Sided Markets is a relatively new business phenomenon and has gone largely unexplored as an academic knowledge field. Because of Network Effects Intermediaries are able to offer value propositions to two distinct markets from a single Platform.

Developing and establishing their business model are one of the greatest challenges that Multi-Sided Platform Businesses face. This thesis will develop a Two-Sided Market Business Model Framework that will assist Intermediaries confront this challenge.

The thesis will comprise of three main parts:

- 1) Literature Research
- 2) Business Model Framework Development
- 3) Business Model Framework Validation

Throughout these three parts of the thesis the Business Model Framework will be developed by:

- Identifying design requirements,
- Learning from the Business Model Canvas,
- Analysing the design requirements,
- Constructing the Business Model Framework,
- Verifying the design requirements,
- Validating the Business Model Framework, and lastly
- Revising the Business Model Framework.

The next chapter will go on to look at business models and more specifically business model innovation.

# Chapter 2

## Business Model Innovation

*Why is it so difficult to pull off the new growth that business model innovation can bring? Our research suggests two problems. The first is a lack of definition: Very little formal study has been done into the dynamics and processes of business model development. Second, few companies understand their existing business model well enough – the premise behind its development, its natural interdependencies, and its strengths and limitations. So they don't know when they can leverage their core business and when success requires a new business model.*

– Johnson, Christensen & Kagermann, Reinventing your Business Model,

Harvard Business Review, December 2008

### 2. Business Model Innovation

Business model innovation as a study field is one of the fundamental and underlying themes of this thesis alongside Two-Sided Markets. Business models and business model innovation will be investigated first before going on to look at Two-Sided Markets. This chapter will aim to fully investigate and explore business models as well as business model innovation.

The **research objective** of this chapter is to understand business model innovation and to derive design requirements from what was learned. Not only business model innovation as a field of



thought solely, but also in the light of Two-Sided Markets. Business models will first be considered before going on to discover business model innovation, and ultimately this chapter will be used to identify design requirements from what was learned throughout the chapter for the Two-Sided Market Business Model Framework that will be developed.

The **research outcome** that this chapter will aim to achieve will be to identify design requirements from what was learned through investigating business models and business model innovation. The chapter will conclude by identifying design requirements.

The **research methodology** that was used to compose this chapter was a combination of literature study as well as deductive reasoning. The literature study relied on journal articles, theses and textbooks available in the academic domain.

## 2.1 What is a Business Model?

A lot of research has been done that focuses on business models (Osterwalder, 2004). However, there are a few academic works that stand out amongst all the others that have not only influenced academia but also business practice (Osterwalder, 2004; Osterwalder & Pigneur, 2010).

Before going on to look at business models it is important that a shared definition of what a business model is first be established to ensure that a shared understanding is established upon which the rest of this thesis will build (Osterwalder, 2004; Johnson, *et al.*, 2008; Osterwalder & Pigneur, 2010).

### 2.1.1 Business Model Definitions

A lot of different, yet fundamentally the same, definitions exist for what a business model is. The two definitions that will be investigated are two of the authors that have significantly influenced the field of thought on business models.

#### 2.1.1.1 Osterwalder & Pigneur – *The Business Model Generation*, 2010

In 2004 Alexander Osterwalder finished his doctorate thesis in fulfilment of his PhD (Doctor of Philosophy). He considered most, if not all, of the most influential literature regarding business models. His thesis title goes: *The Business Model Ontology: A Proposition in a Design Science*

*Approach.* He eventually received his doctorate from the University of Lausanne under the guidance of his study leader, Professor Yves Pigneur.

In his thesis Osterwalder developed a business model framework, called *The Business Model Canvas*. The Business Model Canvas consists of 9 building blocks that explains the value-creation logic of a business.

In 2010 Osterwalder & Pigneur published a textbook called *The Business Model Generation*<sup>10</sup>, which is built on the work done by Osterwalder under the guidance of Pigneur in 2004 at The University of Lausanne whilst writing his doctorate thesis as mentioned above.

Since publishing the handbook in 2010 it went on to become a bestseller. Today it has been used by various world-class multinational companies such as Microsoft<sup>11</sup>, SAP<sup>12</sup>, NASA<sup>13</sup>, Intel<sup>14</sup>, Ernst & Young<sup>15</sup>, PWC<sup>16</sup>, Deloitte<sup>17</sup> and MasterCard<sup>18</sup>, just to name a few.

Osterwalder & Pigneur's (2010) definition of a business model in their widely recognized *Business Model Generation* handbook goes as follows:

*A business model describes the rationale of how an organization creates, delivers, and captures value.*

Bearing this in mind another definition of business models will be considered before going onto develop a business model definition for this thesis.

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<sup>10</sup> Full name: *The Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers* – Osterwalder & Pigneur, 2010

<sup>11</sup> <https://www.microsoft.com>

<sup>12</sup> <http://www.sap.com>

<sup>13</sup> <https://www.nasa.gov>

<sup>14</sup> <http://www.intel.com>

<sup>15</sup> <http://www.ey.com>

<sup>16</sup> <http://www.pwc.com>

<sup>17</sup> <http://www.deloitte.com>

<sup>18</sup> <http://www.mastercard.com>

2.1.1.2 Johnson, Christensen & Kagermann. – *Reinventing Your Business Model*, 2008

In December 2008 Mark W Johnson, Clayton M Christensen & Henning Kagermann published an article in the *Harvard Business Review* titled: *Reinventing Your Business Model*. It is still considered as one of the best *Harvard Business Review* articles and is included in the *Harvard Business Review's 10 Must Reads on Strategy*.

Johnson *et al.* (2008) researched business model innovation case studies and literature. They (Johnson, *et al.*, 2008) concluded that companies are encouraged, almost forced, to innovate not only at value proposition level (product innovation) but rather on business model level, hence it is referred to as *business model innovation*.

Johnson *et al.* (2008) reckons that businesses should innovate at business model level if they want to see radical results. Businesses should not get caught up in product innovation, although it is important. Johnson *et al.* (2008) states that businesses should implement change at business model level if they want change towards success.

Before looking deeper into business model innovation, Johnson *et al.* (2008) defines a business model the following way:

*A business model, from our point of view, consists of four interlocking elements that, taken together, create and deliver value.*

The four interlocking elements that Johnson *et al.* (2008) refers to will be investigated shortly. After considering both the definitions of business models of Osterwalder & Pigneur (2010) and Johnson *et al.* (2008) a definition for a business model can be concluded as:

*A business model is the value-creation logic of a business, it explains how a business creates and delivers value.*

Now that a business model definition has been developed a deeper look will be taken into business models.

### 2.1.2 Business Model Elements & Structure

The work of both Osterwalder & Pigneur (2010) and Johnson *et al.* (2008) correlates with that of Kaplan & Norton (1992). Kaplan & Norton (1992) developed the revolutionary and widely recognized *Balanced Scorecard* strategic management framework and tool.

#### 2.1.2.1 *The Business Model Definition of Johnson et al. (2008)*

The four interlocking elements that comprise the business model definition of Johnson *et al.* (2008) are:

- Customer value proposition,
- Key activities,
- Key resources, and
- Profit formula.

Customer value proposition explains the customer need that the business will satisfy. Key activities are the activities that a business needs to perform in order to successfully deliver the value proposition to customers. Key resources are the assets that a business relies on to perform the key activities. Profit formula is the way that the business intends to be profitable by delivering the value proposition. These four elements make up the business model definition of Johnson *et al.* (2008).

These four business model elements will be considered again shortly.

#### 2.1.2.2 *The Balanced Scorecard*

The Balanced Scorecard relies on four management domains to connect short-term activities to long-term objectives. These four management domains allow executive managers to not only rely on financial metrics but also on other non-financial key performance indicators (KPIs). A key performance indicator (KPI) is a quantifiable metric that a business uses to measure or compare performance in terms of meeting their strategic and operational goals. The Balanced Scorecard is considered a sophisticated instrument panel for coordinating and fine-tuning a business' operations so that all activities are aligned with its strategy.

Each of the four domains asks a question that shifts focus from the Balanced Scorecard domain to the business model. The four management domains and their respective questions are:

1) Financial

To succeed financially, how should we appear to our shareholders?

2) Customer

To achieve our vision, how should we appear to our customers?

3) Internal Business Processes,

To satisfy our shareholders and customers, what business processes must we excel at?

4) Learning and Growth

To achieve our vision, how will we sustain our ability to change and improve?

Figure 6 shows the four strategic management domains of The Balanced Scorecard.

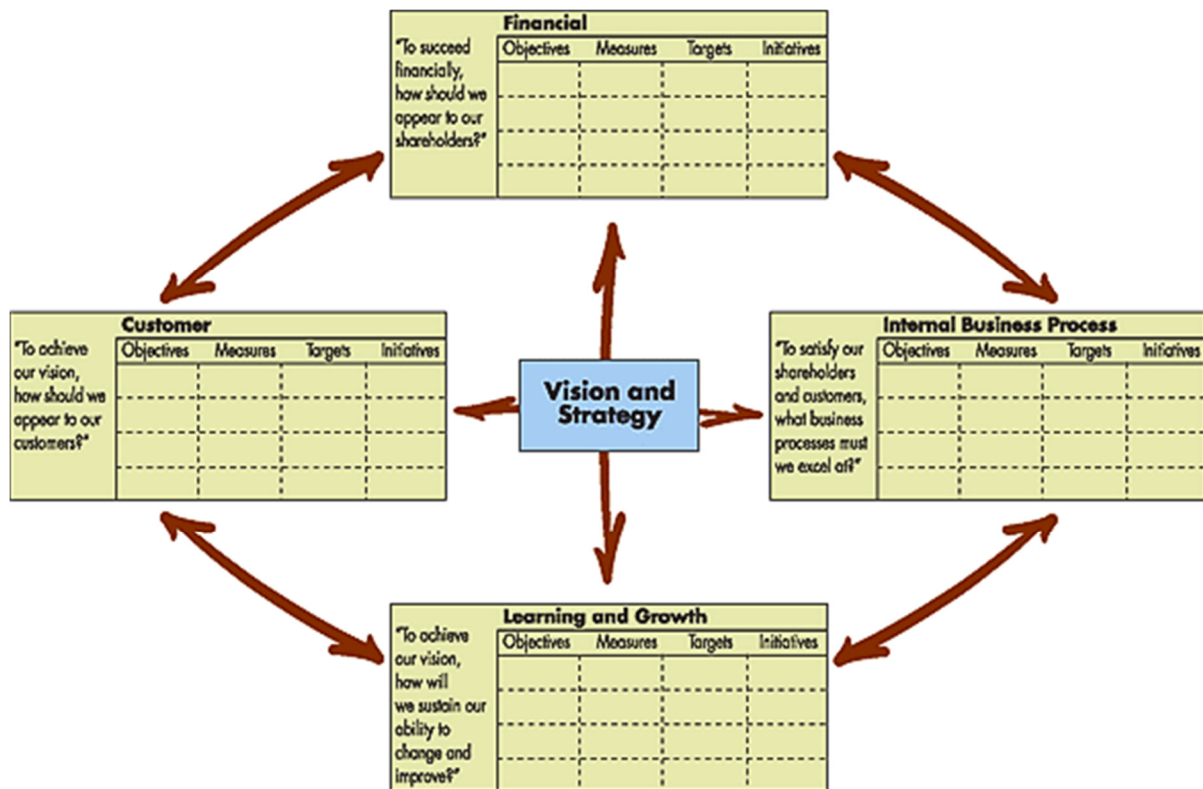


Figure 6 - The Balanced Scorecard Developed by Kaplan and Norton in 1992

(Source: Kaplan & Norton, 2007)

Kaplan & Norton's work (1992) is still deemed relevant even in today's ever-changing and tumultuous business climate where innovation and growth transpires at an incredible rate.

Both the business model frameworks of Osterwalder & Pigneur (2010) and Johnson *et al.* (2008) corresponds with The Balanced Scorecard. See Table 2 that follows below.

Table 2 - Correspondence between The Balanced Scorecard, The Business Model Canvas and Johnson *et al.*'s Business Model Definition

The Balanced Scorecard	Johnson Business Model	The Business Model Canvas
Financial	Profit Formula	Cost Structure
		Revenue Streams
Customer	Customer Value Proposition	Customer Segments
		Channels
		Customer Relationships
Internal Business Processes	Key Resources	Key Resources
	Key Processes	Key Activities
Learning & Growth	Customer Value Proposition	Key Partners
		Value Propositions

Table 2 illustrates the correlation between the four domains of The Balanced Scorecard (developed by Kaplan & Norton, 1992), the 9 building blocks of The Business Model Canvas (developed by Osterwalder & Pigneur, 2010) and the business model elements of the business model definition developed by Johnson *et al.* (2008).

The correlation between the three business model definitions are shown by means of aligning them horizontally in the rows that align.

The Business Model Canvas developed by Osterwalder & Pigneur in 2010 will now be explained because it is one of, if not the most advanced business model frameworks that has been developed. It can be considered as one of, if not the most advanced for three reasons:

- 1) It is one of the most recent business model frameworks that was built on most of the available academic knowledge that focuses on business models,
- 2) It is globally-recognized, both academically and in practice, and
- 3) It has 9 building blocks compared to the other two that has only 4 business model elements each – it is more advanced and detailed.

## 2.2 The Business Model Canvas

Osterwalder’s (2004, 2010) contribution to business models as a field of thought is truly significant – both academically and in practice. The Business Model Canvas that is showcased in their book, *The*

*Business Model Generation*, is widely recognized and utilized all over the world in different organizations – including private, public, government, non-governmental (NGO) and non-profit organizations (NPO). The Business Model Canvas is the differentiating and distinguishing feature of Osterwalder & Pigneur's work (2010). This section will explain how The Business Model Canvas works in order to broaden the understanding of what is meant when referring to business models.

One of the reasons that Osterwalder's Business Model Canvas that he developed in 2004 carries significance is because he looked extensively and intricately at a lot of literature that focuses on business models (Osterwalder, 2004). Table 3 below shows the vast amount of literature sources that Osterwalder researched to ultimately develop The Business Model Canvas.

Table 3 - Osterwalder's (2004) PhD Literature Range

Authors	Definition	Taxonomy	Components	Representation Tool	Ontological Modelling	Change Methodology	Evaluation Measures
Afuah & Tucci, 2001; 2003	X		X				X
Alt & Zimmerman, 2001		X	X				
Amit & Zott, 2001	X						
Applegate, 2001	X	X					
Bagchi & Tulskie, 2000							
Chesbrough & Rosenbloom, 2000			X				
Gordijn, 2002				X	X	X	X
Hamel, 2000			X				X
Hawkins, 2001	X						
Linder & Cantrell, 2000	X	X	X			X	
Magretta, 2002	X		X				
Mahadevan, 2000			X				
Maitand & Van de Kar, 2002			X				
Papakiriakopoulos & Poulymenakou, 2001						X	
Peterovic, <i>et al.</i> , 2001	X		X			X	
Rappas, 2001	X	X					
Stähler, 2002			X				
Tapscott, <i>et al.</i> , 2000	X	X		X		X	
Timmers, 1998	X	X					
Weill & Vitale, 2001	X	X	X	X			



Table 3 above will not be expounded on; it is merely there to show the vast amount of literature that Osterwalder (2004) covered when he developed The Business Model Canvas.

### 2.2.1 The Business Model Canvas

This sub-section will go on to explain more about The Business Model Canvas.

The Business Model Canvas consists of nine building blocks that *“describe the rationale of how an organization creates, delivers, and captures value”*.

The order of the nine building blocks are essential to how The Business Model Canvas functions. The sequence helps with business model design and development. A discussion on a business model starts by looking at the first building block and going on to look at the subsequent ones as well until all of them have been considered in the greater scheme of things. After all the building blocks have been considered to allow a better combined understanding amongst the members of the discussion the building blocks can be revisited to change or discuss them separately or as a whole. The Business Model Canvas encourages discussion which works towards an aligned understanding amongst executive managers, typically. The clear definition that was established throughout the workshop or boardroom meeting allows members of the conversation to better initiate business model innovation.

The first building block needs to be considered first before going on to the other sequentially as the discussion proceeds.

The building blocks are listed below. Note the abbreviation for each building block. The nine building blocks follow:

- |                           |    |
|---------------------------|----|
| 1) Customer Segments      | CS |
| 2) Value Proposition      | VP |
| 3) Channels               | CH |
| 4) Customer Relationships | CR |
| 5) Revenue Streams        | RS |
| 6) Key Resources          | KR |
| 7) Key Activities         | KA |

- 8) Key Partnerships                      KP
- 9) Cost Structure                         CS

A short explanation of each building block follows as described in *The Business Model Generation* handbook:

- 1) Customer Segments                    CS

*The Customer Segments building block defines the different groups of people or organizations an enterprise aims to reach and serve.*

- 2) Value Proposition                    VP

*The Value Propositions building block describes the bundle of products and services that create value for a specific Customer Segment.*

- 3) Channels                                CH

*The Channels building block describes how a company communicates with and reaches its Customer Segments to deliver a Value Proposition.*

- 4) Customer Relationships              CR

*The Customer Relationships building block describes the types of relationships a company establishes with specific Customer Segments.*

- 5) Revenue Streams                      RS

*The Revenue Streams building block represents the cash a company generates from each Customer Segment (costs must be subtracted from revenues to calculate earnings).*

- 6) Key Resources                         KR

*The Key Resources building block describes the most important assets required to make a business model work.*

7) Key Activities KA

*The Key Activities building block describes the most important things a company must do to make its business model work.*

8) Key Partnerships KP

*The Key Partnerships building block describes the network of suppliers and partners that make the business model work.*

9) Cost Structure CS

*The Cost Structure describes all costs incurred to operate a business model.*

All these building blocks assembled forms The Business Model Canvas. This figurative business model framework assists in understanding and developing the logical value-creation method of businesses. Figure 7 clarifies the layout of The Business Model Canvas building blocks when assembled.

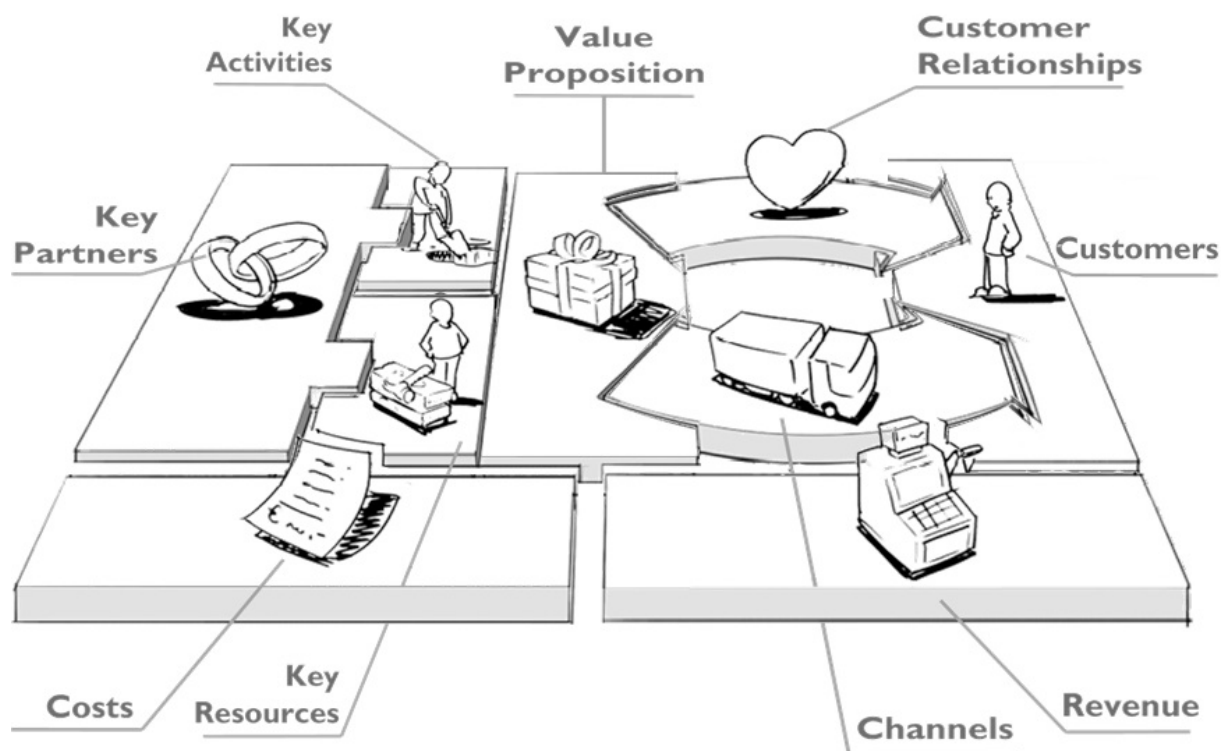


Figure 7 – The Business Model Canvas Layout

It can be seen that there is a flow from left to right. From Key Partners on the left, which include suppliers, all the way through to customers on the right. This value-creation process is referred to as a value chain.

This framework is well designed and looks spectacular but how does it eventually add value to business model innovation?

Figure 8 below shows The Business Model Canvas in its wall poster format. It is a simplified and more functional version of The Business Model Canvas layout found in Figure 7 above.

These wall posters come in high-resolution formats that can be printed on any size paper that makes viewing easier. Sticky notes<sup>19</sup> are then used to explain each building block better. The sticky notes can be removed or edited to direct the discussion towards better definition and eventually successful business model innovation execution.

<sup>19</sup> <http://www.post-it.com>

Color-coding of sticky notes can also be used to convey and group certain ideas and propositions. Sticky notes are easy to remove and edit, which ultimately makes discussions, boardroom meetings and workshops easy and practical when discussing a business model.

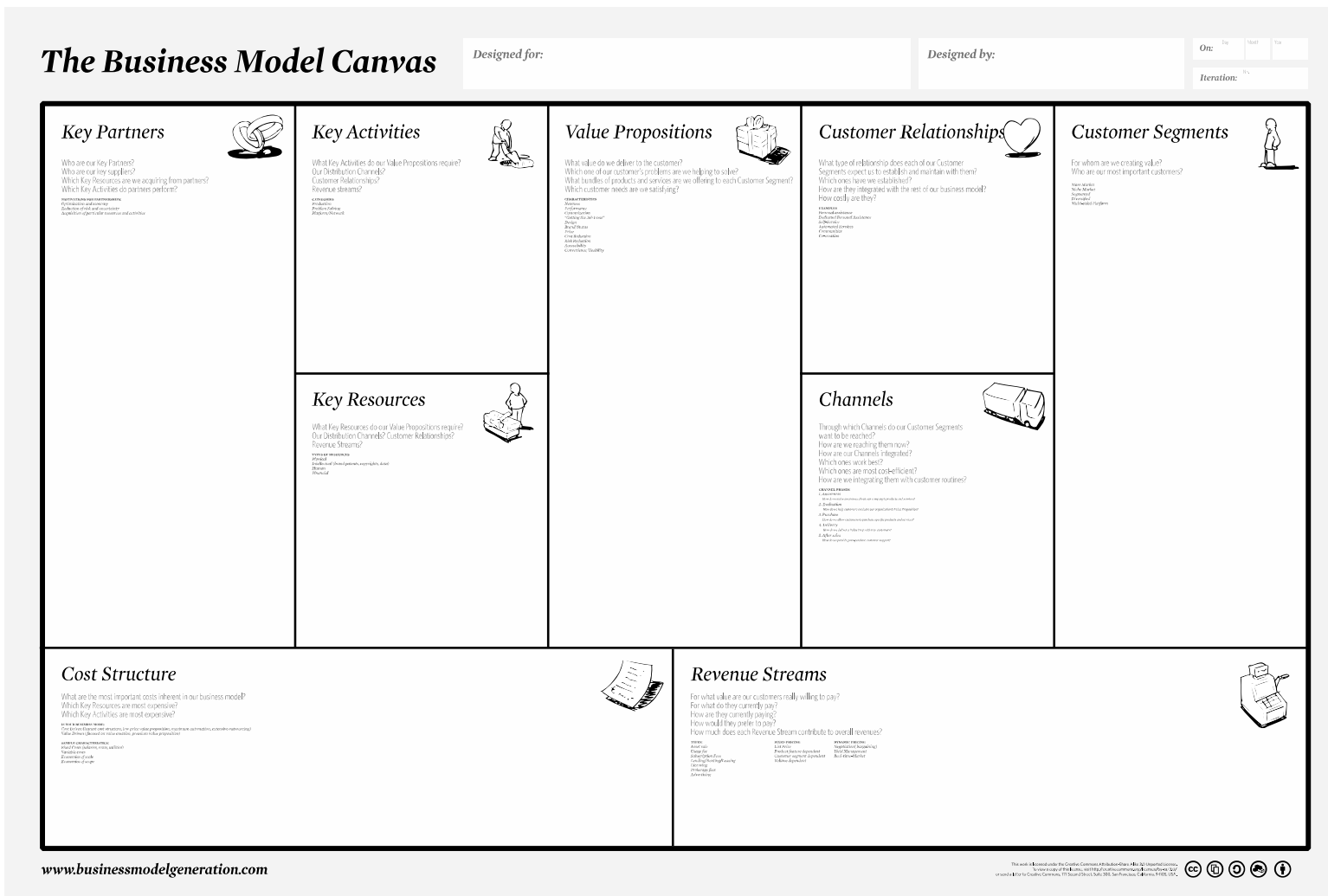


Figure 8 - The Business Model Canvas Wall Poster

## 2.2.2 The Function and Credibility of The Business Model Canvas

It can be agreed that The Business Model Canvas comes across as a very ‘fluffy’ framework that might not have that much credibility. Osterwalder (2004) considered this specific risk before developing the framework and had the following to say about this:

*The reasoning behind business model research is not the understanding of a phenomenon; rather it is a problem-solution finding approach. It is about finding the concepts and relationships that allow expressing the business logic of a firm in order to be able to formally seize this business logic. It means designing and building a model that makes it possible to represent the business model of a firm.*

This thesis will also focus not only on investigating Two-Sided Markets but it will also aim to construct a Two-Sided Market Business Model Framework that will be able to convey the value-creation logic of a business to a point where it is possible to successfully implement it operationally. This Framework will ultimately contribute to the research field of Two-Sided Markets through reforming the way the strategic business & innovation management community, view, think and approach business models in the light of Two-Sided Markets – similar to what Osterwalder did, as stated above.

### 2.2.2.1 Design Science

In his (Osterwalder, 2004) introductory chapter explaining his research design Osterwalder states that developing a business model framework one needs to apply what is known as and what he refers to as *design science*.

Buckminster Fuller (1992) – an architect, engineer, mathematician, poet, cosmologist and forerunner of design science described it in the following way:

*The function of what I call design science is to solve problems by introducing into the environment new artefacts, the availability of which will induce their spontaneous employment by humans and thus, coincidentally, cause humans to abandon their previous problem-producing behaviours and devices. For*

*example, when humans have a vital need to cross the roaring rapids of a river, as a design scientist I would design them a bridge, causing them, I am sure, to abandon spontaneously and forever the risking of their lives by trying to swim to the other shore.*

Translated to this thesis, design science means designing a Two-Sided Market Business Model Framework that will assist executive managers to express the value creation logic of a business, abandoning the former strategic business & innovation management practice that was mostly developed for One-Sided Markets. Moving from their former thinking to the thinking that will be proposed in this thesis – in the form of a Two-Sided Market Business Model Framework.

Eisenmann *et al.* (2011) supports the need for developing a well-researched and a thoroughly developed business model framework for Two-Sided Markets. A business model framework such as this will help executive managers to better understand their business model dynamics. Eisenmann *et al.* (2011) highlights the need for a thought transformation regarding strategic business & innovation management principles of Two-Sided Markets in saying that:

*Executives of multi-sided platform business serving two-sided markets usually had the luxury of formulating strategies for two-sided markets through trial and error. Markets today are less forgiving.*

It can be agreed that a thought transformation of some sort is necessary for strategic business & innovation management in view of Two-Sided Markets. The Business Model Framework that will be developed in this thesis will aim to do just that.

Now that an understanding of business models and The Business Model Canvas has been established business model innovation will be investigated next.

### 2.3 Business Model Innovation

Johnson *et al.* (2008) wrote in their ground-breaking 2008 *Harvard Business Review* article that companies who are truly innovative usually innovate at business model level and not only at product level. A list of interesting statistical phenomenon follows to prove the point in case:



- 11 of the 27 companies born in the last quarter century that grew their way into the *Fortune 500*<sup>20</sup> in the past 10 years did so through business model innovation (Johnson, *et al.*, 2008).
- A recent *American Management Association*<sup>21</sup> study determined that no more than 10% of innovation investment at global companies is focused on developing new business models (Johnson, *et al.*, 2008).
- A 2005 survey by the *Economist Intelligence Unit*<sup>22</sup> reported that over 50% of executive managers believe business model innovation will become even more important for success than product or service innovation (Johnson, *et al.*, 2008).
- A 2008 *IBM*<sup>23</sup> survey of corporate CEOs (Chief Executive Officers) echoed these results. Nearly all of the CEOs polled reported the need to adapt their business models; more than two-thirds said that extensive changes were required. And in these tough economic times, some CEOs are already looking to business model innovation to address permanent shifts in their market landscapes (Johnson, *et al.*, 2008).

Schilling (2013) supports this phenomenon and writes:

*Tech design superiority does not necessarily win; the firms that win are usually the ones that know how to manage the multiple dimensions of value that shape design selection.*

Business model innovation is simply that “*managing the multiple dimensions of value that shape design selection*”.

A clear explanation of business models and the practice of business model innovation have been investigated and explained. Business models in the light of Multi-Sided Platform Businesses aiming to serve Two-Sided Markets will be looked at next.

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<sup>20</sup> <http://fortune.com/fortune500>

<sup>21</sup> <http://www.amanet.org>

<sup>22</sup> <http://www.eiu.com>

<sup>23</sup> <http://www.ibm.com>

## 2.4 Why a Two-Sided Market Business Model Framework?

Seeing that The Business Model Canvas of Osterwalder & Pigneur (2010) is considered a universal tool that is well suited for multiple functions of business model innovation why should a Two-Sided Market Business Model Framework be developed in addition to The Business Model Canvas such as the one that will be developed in this thesis?

It can be agreed that The Business Model Canvas is well suited for business models whose value chain flows from left to right, as can be seen in both Figure 7 and Figure 8 on pages 38 and 40, respectively.

The two fundamental differences between business models serving One-Sided Markets and businesses serving Two-Sided Markets are:

### **Multi-Sided Platform Businesses serve two distinct markets**

Businesses serving Two-Sided Markets obviously have two markets that they need to cater for. This is not the problem. The challenge arises when Network Effects should be exploited in order to create value for all three of the entities in the value-creation ecosystem – namely the:

- 1) The incumbent Multi-Sided Platform Business,
- 2) The one side of the Two-Sided Market, and lastly
- 3) The other side of the Two-Sided Market.

### **Value chain flow direction**

The value chain direction of One-Sided Markets and Two-Sided Markets differ fundamentally. Eisenmann *et al.* (2006) explain this aspect clearly in their revolutionary 2006 *Harvard Business Review* article on Two-Sided Markets:

*Two-sided networks differ from other offerings in a fundamental way. In the traditional value chain, value moves from left to right: to the left of the company is cost; to the right is revenue. In two-sided networks, cost and revenue are both to the left and the right, because the Platform has a distinct group of users on each side.*

*The Platform incurs costs in serving both groups and can collect revenue from each, although one side is often subsidized.*

Although The Business Model Canvas can be adapted to facilitate business model innovation projects for Multi-Sided Platform Businesses that aim to serve Two-Sided Markets this thesis will undertake the challenge of developing a Business Model Framework specifically for Multi-Sided Platform Businesses relying on Network Effects.

A completely new Two-Sided Market Business Model Framework will be developed from scratch. This will be done to capture the unique and complex business model dynamics and principles that Multi-Sided Platform Businesses are subject to. The Business Model Canvas will however be referred to and lessons will be learned from its multiple dimensions of success.

## 2.5 Developing a Two-Sided Market Business Model Framework

The task at hand is a daunting one and can be disastrous if the Business Model Framework development process is not designed and approached correctly.

Before the criteria for identifying design requirements are developed Osterwalder & Pigneur's (2004; 2010) work will be considered to learn how they successfully managed to identify and develop The Business Model Canvas.

### 2.5.1 The Business Model Canvas – Identifying Business Model Design Requirements

Osterwalder & Pigneur's Business Model Canvas (2010) cover the four main areas of a business:

- 1) Customer,
- 2) Offer,
- 3) Infrastructure, and
- 4) Financial Viability.

These four areas of a business model correlate with The Balanced Scorecard (Kaplan & Norton, 1992) as well as the Business Model definition of Johnson *et al.* (developed in 2008) (see Table 2 on page 33).

The Business Model Canvas has nine building blocks and each one of them can be listed under one of these four areas. Table 4 below clarifies.

Table 4 - Correlation between the Four Main Areas of a Business Model and The Business Model Canvas

Four main areas of a business	Nine building blocks
Customer	Customer Segments – CS
	Channels – CH
	Customer Relationships – CR
Offer	Value Proposition – VP
Infrastructure	Key Resources – KR
	Key Activities – KA
	Key Partnerships – KP
Financial Viability	Revenue Streams – RS
	Cost Structure – CS

On the basis of the work of Osterwalder & Pigneur (2004, 2010), Kaplan & Norton (1992) and Johnson *et al.* (2008) it can be concluded that a business model have four main areas that are fundamental to all businesses if they wish to operate successfully.

**Customer** defines the market that has a unique need or problem that needs to be satisfied by the business.

**Offer** is the solution that is offered to the customer by the business.

**Infrastructure** explains the way in which the business will deliver the Offer to the market that creates a demand. It includes both the resources as well as the activities of the business that delivers the Offer.

**Financial Viability** explains the profit logic of the business. It includes the costs as well as the revenues that will eventually generate value for shareholders.

Figure 9 shows these four areas in a simple sketch.



*Figure 9 - The Four Main Areas of Business Models*

Note that throughout the thesis the four main areas of a business model will each have a respective colour:

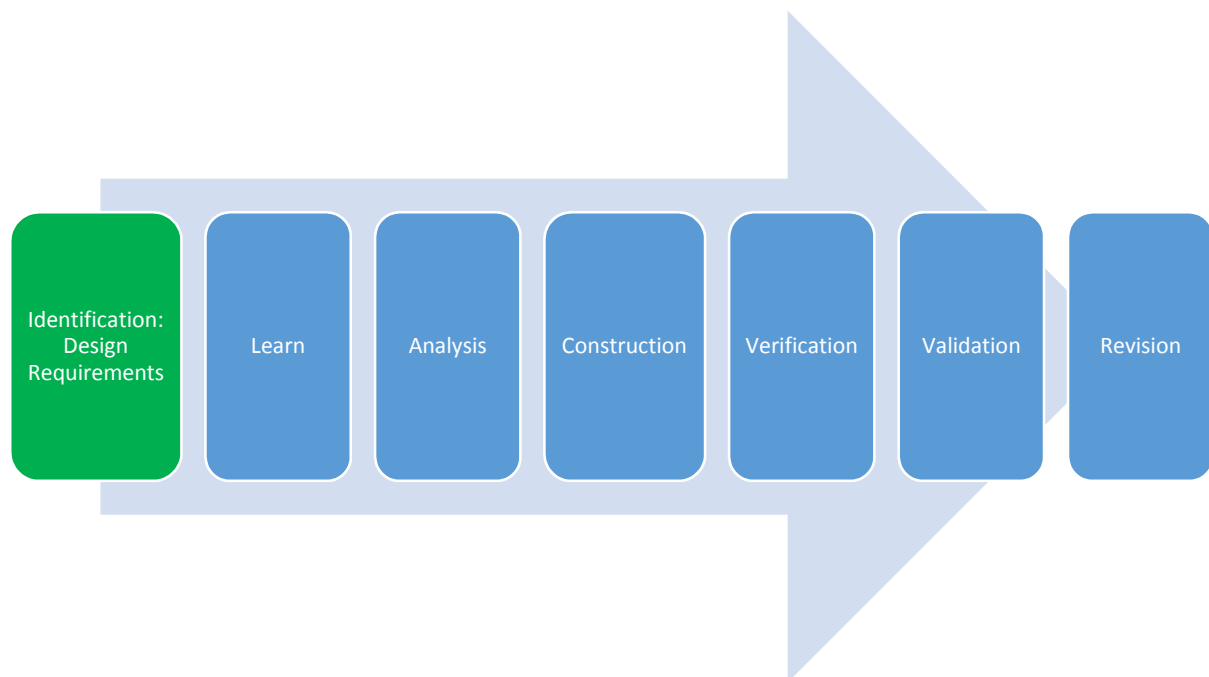
- |                        |        |
|------------------------|--------|
| 1) Customer            | Red    |
| 2) Offer               | Orange |
| 3) Infrastructure      | Green  |
| 4) Financial Viability | Blue   |

Business models and business model innovation have been fully investigated in this chapter. The closing section will list all of the identified design requirements of this chapter and the preceding one.

## 2.6 Conclusion: Identifying Business Model Framework Design Requirements

Design requirements will be identified at the end of each chapter. The design requirements will be used to eventually develop the Two-Sided Market Business Model Framework – the ultimate outcome of this research project. This chapter will also consider the previous chapter – chapter 1: Introduction.

Figure 10 below highlights the design requirements identification step of the Business Model Framework development process. At the end of each chapter that forms part of the literature study design requirements will be identified relevant to the chapter discussed.



*Figure 10 - The Business Model Framework Development Process*

Design requirements will accumulate throughout the literature study, the list of design requirements will serve as the design specifications to ultimately develop the Business Model Framework in the construction step (see the fourth step of the Business Model Framework development process in Figure 10 above).

### 2.6.1 Criteria for Identifying Design Requirements

In this chapter it was found that all business models have four areas, namely:

- 1) Customer,
- 2) Offer,
- 3) Infrastructure, and
- 4) Financial Viability.

Throughout the literature study many insights were and will be discovered. Whether they will be deemed fit to qualify as a design requirement depends on whether they can be listed under one of the four main areas of business models. The insight, principle, dynamic, *etc.* that will be learned throughout the course of this research study will have to be relevant to one of the four main areas of business models.

#### 2.6.2 Cumulative Design Requirements List

The design requirements that will be identified will be listed in tabular format. The design requirements will accumulate over the course of the literature study.

The design requirements lists will look as follow, see Table 5 below.

Table 5 - Design Requirements Identified in Chapter 2

<b>1. Customer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
1.1					<input type="checkbox"/>
1.2					<input type="checkbox"/>
1.3					<input type="checkbox"/>

<b>2. Offer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
2.1					<input type="checkbox"/>
2.2					<input type="checkbox"/>
2.3					<input type="checkbox"/>



<b>3. Infrastructure</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
3.1					<input type="checkbox"/>
3.2					<input type="checkbox"/>
3.3					<input type="checkbox"/>

<b>4. Financial Viability</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
4.1					<input type="checkbox"/>
4.2					<input type="checkbox"/>
4.3					<input type="checkbox"/>

The four tables shown above each presents one of the four main areas of business (Customer, Offer, Infrastructure and Financial Viability). Each one of the four main areas is given a number:

- 1) Customer
- 2) Offer
- 3) Infrastructure
- 4) Financial Viability

Design requirements listed under the four main areas will also be given a number. These numbers will be used when doing the verification step of the Business Model Framework development process (see the fifth step of the Business Model Framework development process in Figure 10 above on page 48). Numbers will simplify the process of verifying whether a specific design requirement was included in the Business Model Framework or not.

Each design requirement will also be given a section and page number to assist with cross—referencing when doing the verification step of the Business Model Framework development process.

If a design requirement has been satisfied in the verification step of the development process it will be ticked off. The column on the right-hand side of the list will serve as the tick boxes. Each area of business models will receive its own number, see the lists above as well as the number in each area's table (see Table 5 above):

- 1) Customer
- 2) Offer
- 3) Infrastructure
- 4) Financial Viability

Design requirements will be listed in the *Design Requirement* column of the table with relevant notes in the *Notes* column to its right if the design requirement requires explanation.

#### 2.6.2.1 Cumulative Design Requirements List for Other Design Requirements

Some design requirements will not necessarily qualify to be listed under one of the four main areas of business models but they might still be relevant to successfully develop the Two-Sided Market

Business Model Framework. These design requirements will have a separate list that will accumulate throughout the literature study.

Two of these *Other* design requirements were identified in this chapter. See these two design requirements listed as 5.1 and 5.2 in Table 6 below. The list of *Other* design requirements will be listed as number 5.

Table 6 - Other Design Requirements Identified in Chapter 2

<b>5. Other</b>					
<b>No.</b>	<b>Sect.</b>	<b>Pg.</b>	<b>Design Requirement</b>	<b>Notes</b>	<input checked="" type="checkbox"/>
5.1	1.2.2	14	Defining and understanding a business model	A business model framework should be able to define a business model clearly so that an understanding can be established amongst a group of people	<input type="checkbox"/>
5.2	1.4	16	Shared understanding of a business model	A business model framework should be able to establish a shared understanding amongst many people	<input type="checkbox"/>
5.3	1.4	16	Description and discussion	A business model framework should be able to facilitate description and discussion about a business model	<input type="checkbox"/>

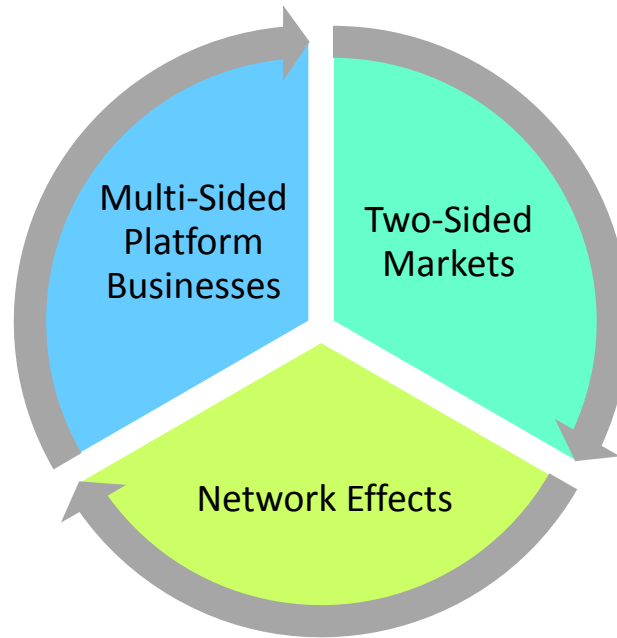
5.4	1.2.2	14	Business model dynamics and processes	A clear business model definition explains the <b>dynamics</b> and <b>processes</b> of a business model	<input type="checkbox"/>
5.5	1.4	16	Simple (not oversimplifying), relevant and intuitively understandable	A clear business model definition is simple (not oversimplifying it), relevant and understandable	<input type="checkbox"/>
5.6	1.4	16	Business model innovation tool	A business model framework tool should serve as a business model innovation tool for boardroom meetings, workshops, discussions, business model innovation projects, <i>etc.</i>	<input type="checkbox"/>

The design requirements listed above will accumulate throughout the course of this thesis. Design requirements will be identified throughout each chapter and listed at the end of the individual chapters. The design requirements will eventually assist in the Business Model Framework development chapter, chapter 9: Business Model Framework Development.

The next chapter will look at literature to explain the fundamental insights of:

- **Multi-Sided Platform Businesses** that rely on
- **Network Effects** to serve
- **Two-Sided Markets.**

Figure 11 depicts these three bullets mentioned. Before looking deeper into these respective parts the next chapter will concentrate on explaining, understanding and defining these three features because everything else that will follow are subject to them.



*Figure 11 - The Three Fundamental Defining Concepts of this Thesis*

# Chapter 3

## Two-Sided Markets, Multi-Sided Platform Businesses & Network Effects

*If I had one hour to save the world I would spend 55 minutes understanding the problem and 5 minutes solving it.*

**– Albert Einstein**

### 3. Two-Sided Markets, Multi-Sided Platform Businesses & Network Effects

An understanding of business models and more specifically business model innovation has been established. This chapter will go on to look at the other part of the foundation upon which this thesis will be built namely Two-Sided Markets, Multi-Sided Platform Businesses and Network Effects.

Although these three terms might seem like they carry a lot of informational weight they are not nearly as complex as they sound – even though it might be a foreign concept. All three of them actually coincide and are mutually inclusive to a great degree. This chapter will investigate them in depth.

The **research objective** of this chapter is to understand Two-Sided Markets, Multi-Sided Platform Businesses and Network Effects. From the knowledge gathered design requirements will be identified throughout.

The **research outcome** of the chapter is to derive design requirements that will assist in developing the Two-Sided Market Business Model Framework.

The **research methodology** that will be used to compose this chapter is a combination of literature study as well as deductive reasoning. The literature study relied on journal articles, theses and textbooks available in the academic domain. The deductive reasoning is the means through which the design requirements are identified.

### 3.1 Two-Sided Markets

A Two-Sided Market is merely what it says – it is a market that has two sides. A Two-Sided Market consists of two distinct markets. Each one of these markets demands a completely different need than the other.

What do these two distinct markets have in common if both of them have unrelated and completely different needs? Why are they grouped together and called a Two-Sided Market?

The example of Google will be considered once again. Google's AdWords business unit was their first core business and this is what put them on the map even though they were not the first Internet web search engine to enter the market (they were an early follower, not a first entrant into the market), these specifics will not be looked at yet – only at a later stage in this thesis will market entry time be considered.

Google's AdWords business model consists of a Two-Sided Market:

- 1) Web searchers and
- 2) Business advertisers.

Both of them are two distinct markets that have very little in common and both of them demand unrelated and completely different needs, but still they coincide in a spectacular manner.

As explained earlier:

Google offers a search engine to web searchers for free,

→

Web searchers contribute readership for business advertisers,

→

And business advertisers pay Google money for the readership of web searchers.

The closed-loop can be seen clearly. Figure 12 sketches this closed-loop value chain in a clear way.

*Readership* is the ability of a group to read something. Readership in the instance mentioned above is the ability of the web searchers to read business advertisers' websites.

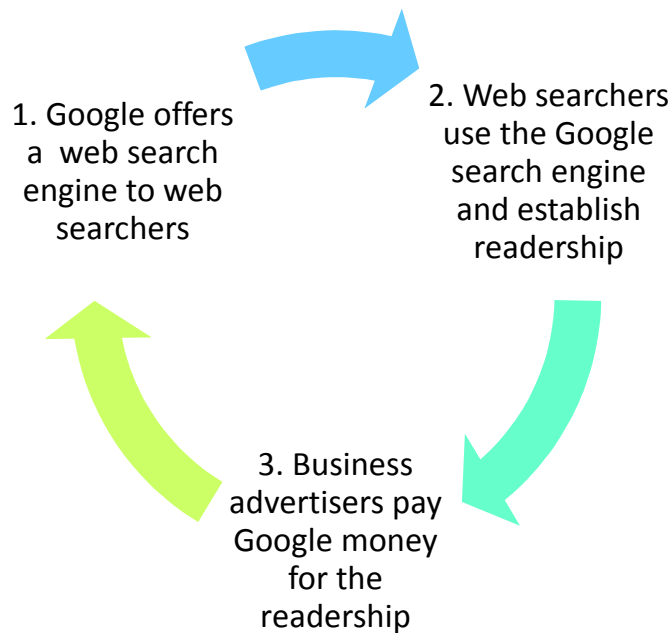


Figure 12 - Google AdWords Closed-Loop Value Chain

Note that the readership of the web searchers that connect with the marketing campaigns of the business advertisers are based on whether they have the opportunity to view it. It is not a function



of how well the marketing campaign is recognized by the readership of the web searchers and to which degree the readership connect with the marketing campaign. Whether web searchers lock eyes with marketing campaigns will not be considered in this thesis, only whether the readership have a realistic opportunity to connect with the marketing campaign. To which degree and how well the readership recognize the marketing campaign is a field that should be researched in the field of marketing and is unrelated to strategic business & innovation management.

If the value chain explained above shown in Figure 12 is examined extensively it will be found that there are three entities and each one brings a specific value to the value chain ecosystem that is valuable to another entity:

	<u>Supplied value</u>	<u>Demanded need</u>
1. Google	Search engine	Money
2. Web searchers	Readership	Search engine
3. Business advertisers	Money	Readership

It can be seen that this three-part value-creation system is unique in the sense that the one entity delivers value to the other to form a closed loop.

Table 7 combines all that was said above in simple tabular format with some additional information. The additional information will be expounded on below.

*Table 7 - Role-Players and Roles of Google AdWords*

<b>Side of the market</b>	<b>Incumbent business</b>	<b>Side one</b>	<b>Side two</b>
Type of side	Platform	Subsidy-Side	Money-Side
Entity	Google	Web searchers	Business advertisers
Value contributed to	Web searchers	Business advertisers	Google
Demanded need	Money	Search engine	Readership
Supplied value	Search engine	Readership	Money

Note that there are usually three entities in the value chain of a Two-Sided Market.

The entity that guides the transaction or interaction is always referred to as the *Intermediary*. The Intermediary offers the Platform from which the transaction or interaction occurs.

Eisenmann *et al.* (2006) defines a Platform as:

*Products and services that bring together groups of users in two-sided markets are platforms. Platforms provide infrastructure and rules that facilitate the two groups' transactions and can take many guises. In some cases, platforms rely on physical products, as with consumers' credit cards and merchants' authorization terminals. In other cases, they are places providing services, like shopping malls or websites.*

These “many guises” that Platforms can take will only be discovered at a later stage and they will be discovered as different case studies of real-life Multi-Sided Platform Business examples will be investigated.

In Google’s AdWords case the Internet and the Google search engine is the Platform and Google acts as the Intermediary that provides the Platform.

Google’s Two-Sided Market consists of:

- 1) Web searchers and
- 2) Business advertisers.

Throughout literature there are a lot of different references made to the respective sides, in this thesis they will however be referred to in the same way that Eisenmann *et al.* (2006) refers to them:

- 1) Subsidy-Side and
- 2) Money-Side (see Table 7 above).

Hence web searchers form the Subsidy-Side and business advertisers make up the Money-Side.

The Subsidy-Side is always the side that pays less than the Money-Side. From real-life practice businesses rely predominantly on the Money-Side as their primary source of revenue. This can be

seen in Google's AdWords Business Model where web searchers (Subsidy-Side) can use the Google search engine for free and the business Advertisers (Money-Side) pay Google for their website link to be listed at the top of the Google search results.

Eisenmann *et al.* (2006) goes on to say that although a Subsidy-Side and a Money-Side exists there are also:

- A User/Consumer side and
- A Supplier/Developer side.

The User/Consumer side is the side that consumes or uses a certain value offering and the Supplier/Developer side is the side that usually creates content, supplies a value offering or develops a consumable.

In Google's AdWords example web searchers (Subsidy-Side) are typically the User/Consumer side and advertisers (Money-Side) are the Supplier/Developer side.

Note that it is not always the case that:

- The Subsidy-Side = User/Consumer side, and
- The Money-Side = Supplier/Developer side.

This phenomenon will be investigated at a later stage.

The pricing of both sides (Subsidy-Side and Money-Side) will not be fully investigated right away but only in the Pricing chapter that follows. Note that Multi-Sided Platform Businesses offer value propositions to the Subsidy-Side either:

- At a loss, or
- For free, or
- For a profit, or
- For some or other agreement that benefits the Platform and ultimately the Intermediary.

In Google's AdWords case the search engine is offered to Web Searchers for free.

### 3.1.1 Prerequisites of a Two-Sided Market

There are a couple of prerequisites that needs to be in place in order for a Two-Sided Market to exist. This section will look at the prerequisites of a Two-Sided Market according to multiple authors and economics literature.

Filistrucchi *et al.* (2012) writes that:

*According to the economics literature, a two-sided market is a market in which a firm acts as a platform and somehow connects distinct but interdependent customer groups (the so-called “sides”) in a way that generates value for at least one of the two customer groups. Typically, these customers cannot obtain such value, or at least not to that extent, without the platform.*

Filistrucchi *et al.* (2012) goes on to write that:

*From the definitions of two-sided markets proposed in the literature it appears that the identifying features are the existence of a firm selling more than one product or service, the presence of two distinct groups of buyers, each buying different products or services, the interdependency between their demands and the lack of a complete pass-through in case of transaction markets.*

Evans (2003) states that the necessary conditions of a Two-Sided Market are:

*Firstly, “a two-sided market requires two or more distinct groups of customers”. For example, a producer of video-game consoles sells consoles to users and both licenses the right to develop software and sells software development kits to video game developers.*

*Secondly, “a two-sided market exhibits externalities which are associated with two or more groups of customers being connected or coordinated in some fashion”. For example, video-game developers value video game consoles more when they have more users; and users value consoles that have more games.*

*Lastly, for a two-sided market to exist, “an intermediary is required in order to internalize the externalities created by one group for the other group(s)”. In our example, this is the producer of video-game consoles.*

When considering all of the citations above a pattern can be seen. Table 8 combines it all. The first column is the identified prerequisite of a Two-Sided Market, and the other three columns are the three cited definitions of Two-Sided Markets. The rows establish and demonstrate the correlation between the three citations and the prerequisites of Two-Sided Markets.

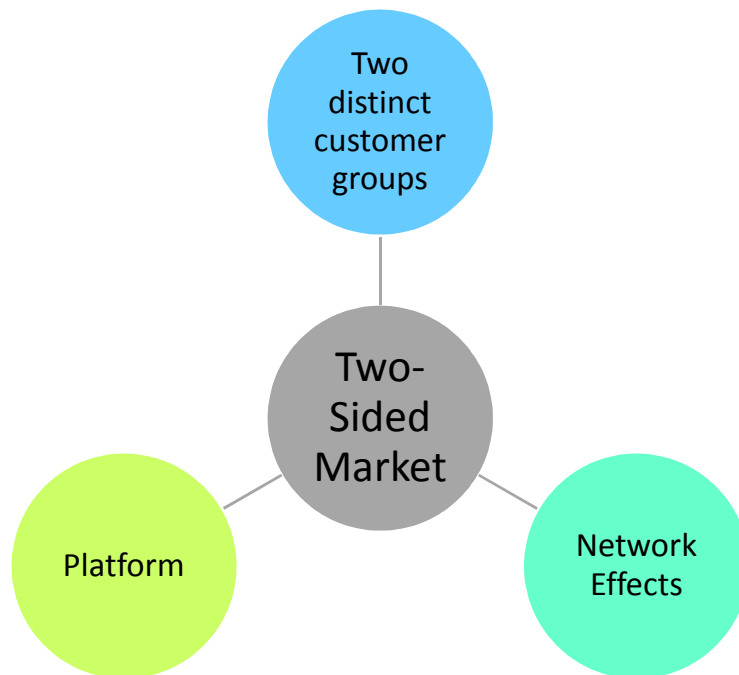
Table 8 - Prerequisites of a Two-Sided Market

Prerequisite	Economics literature, Filistrucchi <i>et al.</i> (2012)	Literature study, Filistrucchi <i>et al.</i> (2012)	Evans (2003)
Distinct customer groups (Two-Sided Market)	<b>Distinct</b> but <b>interdependent</b> customer groups	The presence of two <b>distinct</b> groups of buyers	Two-sided market requires two or more <b>distinct</b> groups of customers
Platform (Multi-Sided Platform Business)	These customers cannot obtain such value, or at least not to that extent, without the <b>Platform</b>	A <b>firm</b> selling more than one product or service; Each group buying different products or services	An <b>Intermediary</b> is required in order to internalize the externalities created by one group for the other group(s)
Network Effects	In a way that <b>generates</b> value for at least one of the two customer groups	The <b>interdependency</b> between their demands	A Two-Sided Market exhibits <b>externalities</b> which are associated with two or more groups of customers being <b>connected</b> or <b>coordinated</b> in some fashion

It can thus be concluded that in order for a Two-Sided Market to exist three elements need to be in place:

- 1) **Two or more distinct customer groups** that
- 2) Transact on a mutual **Platform** (provided by an Intermediary), and in so doing
- 3) Creates value (indirect **Network Effects**) for the other customer group.

Figure 13 shows the three elements that need to be present for a Two-Sided Market to exist.



*Figure 13 - The Three Elements of a Two-Sided Market*

The three elements that form a Two-Sided Market are the three main terms that this chapter focuses on:

- 1) Two distinct customer groups (Two-Sided Markets),
- 2) Platform (provided by an Intermediary *i.e.* Multi-Sided Platform Businesses), and
- 3) Network Effects.

Therefore, after business model innovation was explained in the previous chapter the focus had to be placed on these three elements that form part of the foundation of this thesis, hence this chapter.

Now that the elements that define a Two-Sided Market have been established Multi-Sided Platform Businesses will be considered next.

## 3.2 Multi-Sided Platform Businesses

A Multi-Sided Platform Business is the business that facilitates the transaction of the targeted Two-Sided Market by implementing and offering infrastructure, the Platform, on which the two distinct customer groups can interact.

### 3.2.1 Four Different Types of Multi-Sided Platform Businesses

Evans and Schmalensee (2005) identified “*four different types of Multi-Sided Platform Businesses*” namely:

- 1) Exchanges,
- 2) Advertising-Supported Media,
- 3) Transaction Systems, and
- 4) Software Platforms.

They (Evans & Schmalensee, 2005) go on to say that although these four different types of Multi-Sided Platform Businesses provide a useful classification technique. It is important to note that there is a considerable overlap in the manner which they facilitate interaction among customer groups.

Each one of these four different types of Multi-Sided Platform Businesses will be investigated.

#### 3.2.1.1 Exchanges

Exchanges consist of Users/Consumers and Suppliers/Developers. Exchanges assist Users/Consumers and Suppliers/Developers to search for feasible contracts via the Platform. Feasible contracts involve a transaction where the offerings to both are mutually beneficial. It is typically where the Users/Consumers is paying as little as possible for the Suppliers/Developers to receive as much as possible.

It is focused on ‘matchmaking’. Connecting the one side of the market with the other in the midst of this vast network of users via the Platform.

It can also be where brokerage services are applicable. The broker serves as the Intermediary and guides whatever transaction or interaction there is that needs to be matched. Examples will be looked at shortly.

#### *3.2.1.2 Advertising-Supported Media*

Advertising-Supported Media markets are universal. From newspapers and magazines to television and web portals.

Advertising-Supported Media makes most of their money from advertisers (Money-Side, Suppliers/Developers) and subsidizes readers that contributes the readership (Subsidy-Side, Users/Consumers). Examples will be considered shortly.

#### *3.2.1.3 Transaction Systems*

Although Transaction Systems are exactly what it says many of them exist and many different ones exist. It ranges from money to credit cards and many others.

Examples will be investigated shortly.

#### *3.2.1.4 Software Platforms*

Software Platforms provide services for application developers; these services help developers obtain access to the hardware for the computing device that allows them to develop suitable features for the desired computing devices. Software Platform users can only use certain programs and features with corresponding software packages.

Software Platforms include operating systems, mobile networks, gaming consoles and digital music, amongst many others.

Software Platforms mostly generate a revenue stream on the User/Consumer (Money-Side) side and not on the Supplier/Developer (Subsidy-Side) side, as will be seen shortly.



### 3.2.2 Examples of Multi-Sided Platform Businesses

It is important to note that Two-Sided Markets are not mutually exclusive from One-Sided Markets but that Two-Sided Markets can be found in many industries, sharing the space with traditional product and service offerings *i.e.* One-Sided Markets (Eisenmann, *et al.*, 2006).

Most Two-Sided Market articles and academic literature use real-life examples of Multi-Sided Platform Businesses to explain certain phenomenon found in the Two-Sided Market business space. Parker & Van Alstyne (2005) and Eisenmann *et al.* (2006) provides extensive (but not exhaustive) tables listing real-life Multi-Sided Platform Business examples. Table 9 and Table 10 are the tables from the articles of Parker & Van Alstyne (2005) and Eisenmann *et al.* (2006), respectively. Note that these tables are adapted and incorporate four columns, one for each of the four different types of Two-Sided Markets identified by Evans and Schmalensee (2005) as discussed above in the previous section.

What the tables below aim to do is:

- Validate whether Evans and Schmalensee's (2005) theory of four different types of Platforms proves correct, and at the same time,
- Group each one of the examples listed in the two tables below in one of the four groups of the different types of Two-Sided Markets.

These two lists are not exhaustive in terms of the examples and types of Multi-Sided Platform Businesses because innovation does not have an end to its development. Anything new can spring up in the future. Filistrucchi *et al.* (2012) supports this statement in saying that:

*More generally, while the economic literature can contribute to drawing up a list of two-sided markets, this list is unlikely to be exhaustive and up-to-date in the face of continuous technological progress and product innovation. To see the point, just think of a social network like Facebook. It started catering to people wishing to connect to their friends, but it later started to sell advertising slots. As advertisers clearly attach a positive value to reaching more users (of their target group) on Facebook, the market for social networks has clearly*

*become two-sided. This would probably have been difficult to predict before Facebook appeared.*

The two tables following below are merely there to give an idea of real-life examples of Multi-Sided Platform Businesses, and to explain how the four different types of Multi-Sided Platform Businesses look like in reality.

Note that all the red cells signify the Subsidy-Side of the market. Market 1 and 2 points out the User/Consumer and Producer/Developer in the business model respectively.

Also note that some companies will be unfamiliar. These companies were listed by the authors of these tables (Parker & Van Alstyne, 2005; Eisenmann, *et al.*, 2006).

Table 9 - Multi-Sided Platform Business Examples (Adapted from: Parker & Van Alstyne, 2005 & DS Evans & R Schmalensee, 2005)

Product category	Market 1 (User/Consumer)	Market 2 (Producer/Developer)	Intermediary (Platform)	Exchanges	Advertising-Supported Media	Transaction Systems	Software Platforms
Portable documents	Document reader*	Document writer	Adobe				X
Credit cards	Consumer credit*	Merchant processing	Issuing bank			X	
Operating systems	Complementary applications	System developer toolkits*	Microsoft, Apple				X
Plug-ins	Applications software	System developer toolkits*	Microsoft, Adobe				X
Ladies nights	Men's admission	Women's admission*	Bars	X			
TV format	Colour UHF, VHF, HDTV*	Broadcast equipment	Sony, Phillips	X			
Broadcast & publishing	Content*	Advertisements	Magazine publishers, TV, radio broadcasters		X		
Computer games	Game engine/player	Level editors*	Ubisoft, ID, Valve, Electronic Arts				X
Auctions	Buyers*	Sellers	eBay	X			
Academic journals	Articles	Author submissions*	Management Science	X			
Recruiting	Applicants*	Employers	Monster.com	X			
Reservation systems	Travelers*	Hotels, airlines, rental cars	Expedia, Travelocity	X			
Shopping malls	Shoppers*	Stores	Mall of America	X			
Streaming audio/video	Content*	Servers	Real audio, Microsoft, Apple	X			
Search engines	Searchers*	Marketers	Google.com		X		
Stock exchange	Equity purchasers*	Listed companies	NYSE, NASDAQ	X			
Home real estate	Home buyers*	Home sellers	Real estate agents	X			

Table 10 - Examples of Multi-Sided Platform Businesses (Adapted from: Eisenmann et al., 2006 & DS Evans & R Schmalensee, 2005)

Networked market	Side 1 (User/Consumer)	Side 2 (Producer/developer)	Platform providers (rival providers of proprietary Platforms)	Exchanges	Advertising-Supported Media	Transaction Systems	Software Platforms
PC operating systems	Consumers	Application developers*	Windows, Apple				X
Online recruitment	Job seekers*	Employers	Monster.com, CareerBuilder	X			
Miami Yellow Pages	Consumers*	Advertisers	BellSouth, Verizon		X		
Web search	Searchers*	Advertisers	Google, Yahoo		X		
HMOs (Health Maintenance Organizations)	Patients*	Doctors	Kaiser Wellpoint	X			
Video games	Players*	Developers	PlayStation, Xbox				X
Shopping malls	Shoppers*	Retailers	Mall of America	X			
Linux application servers	Enterprises	Application developers	IBM, HP, Dell	X			
Wi-Fi equipment	Laptop users	Access points	Linksys, Cisco, Dell	X			
DVD	Consumers	Studios	Sony, Toshiba, Samsung	X			
Phoenix Realtors Association	Home buyers*	Home sellers	100+ real estate brokerage firms	X			
Gasoline-powered engines	Auto owners	Fuel stations	GM, Toyota, Exxon, Shell	X			
Universal Product Code	Product suppliers	Retailers	NCR, Symbol Technologies	X			

As mentioned, both tables are not exhaustive and the authors most probably listed the most common, simple and well-known examples that they felt were relevant to explain their point in case. Although it is random and not exhaustive do note that Exchanges is the type of Two-Sided Market that is most common. It might be so for the tables but not necessarily in reality.

From what can be seen above it can be concluded that:

- **Exchanges**

Exchanges are Multi-Sided Platform Businesses that offer matchmaking opportunities via a network of two distinct user groups. All they basically do is to connect two distinct customer groups via a Platform and give them the opportunity to connect – matchmaking.

- **Advertising-Supported Media**

Multi-Sided Platform Businesses that rely on Advertising-Supported Media create a captive audience that offers readership.

- **Transaction Systems**

Transaction System Multi-Sided Platform Businesses create a network of buyers and merchants, and provide the necessary infrastructure in order for the Two-Sided Market to interact and hence transact.

- **Software Platforms**

Software Platform Multi-Sided Platform Businesses owns the Software Platform and can therefore decide to whom they want to give access. The power of Software Platforms is thus exclusive access to the Platform.

This exclusive access applies to both users and developers – this is true for operating systems, gaming consoles and other Business Models that rely on Software Platforms.

Network Effects will be looked at next and the role that they play in Two-Sided Markets.

### 3.3 Network Effects

The element of Network Effects is a non-negotiable part of Two-Sided Markets. Network Effects need to exist between the two distinct markets before a true Two-Sided Market can be established. The one cannot be without the other – it is a typical chicken-egg scenario.

Note that Network Effects is the only element of the three elements of Two-Sided Markets that are nontangible. The other two:

- 1) Two distinct user groups and
- 2) A Platform provided by an Intermediary are both tangible.

It can thus be concluded and will be seen shortly that Network Effects is what ties these two entities together. Without the value created by Network Effects these entities will just ‘float’ around, be irrelevant and carry no meaning. They will have very little, if none, influence on one another if it were not for Network Effects.

Eisenmann *et al.* (2006) clarifies the phenomenon Network Effects in a simple yet explanatory way:

*The two groups (the two-sided market) are attracted to each other – a phenomenon that economists call the network effect. With two-sided network effects, the platform’s value to any given user largely depends on the number of users on the network’s other side. Value grows as the platform matches demand from both sides.*

This fundamentally means that:

- 1) Because of the presence of both sides of the Two-Sided Market they create value for one another across the networked Platform and
- 2) As both sides grow in numbers they create increased value for one another.

This phenomenon can be clearly seen in the magazine industry where the magazine publisher (Intermediary) publishes magazines (Platform) on a regular basis. The magazine publisher generates a revenue stream through advertisement space in the magazine that is sold to advertisers (Money-

Side, Producer/Developer side of the Two-Sided Market). The magazine is then sold to readers (Subsidy-Side, User/Consumer side of the Two-Sided Market) that are interested in the magazine, not necessarily the advertisements that will be published in the magazine.

As the magazine gets a greater following of readers the value of the advertisement space in the magazine increases. The magazine publisher can demand a higher price and the advertiser can expect a greater audience of readership that will have the opportunity to connect with the marketing campaign in the magazine.

Magazine readers might also experience that the quality and relevance of the advertisements published are better when the publishers have a greater pool of advertisers to sell advertising space to. Also, the quality and relevance of marketing campaigns will most probably improve if the magazine publisher request higher prices that will in return draw leading advertisers that wants to publish quality and relevant advertisements.

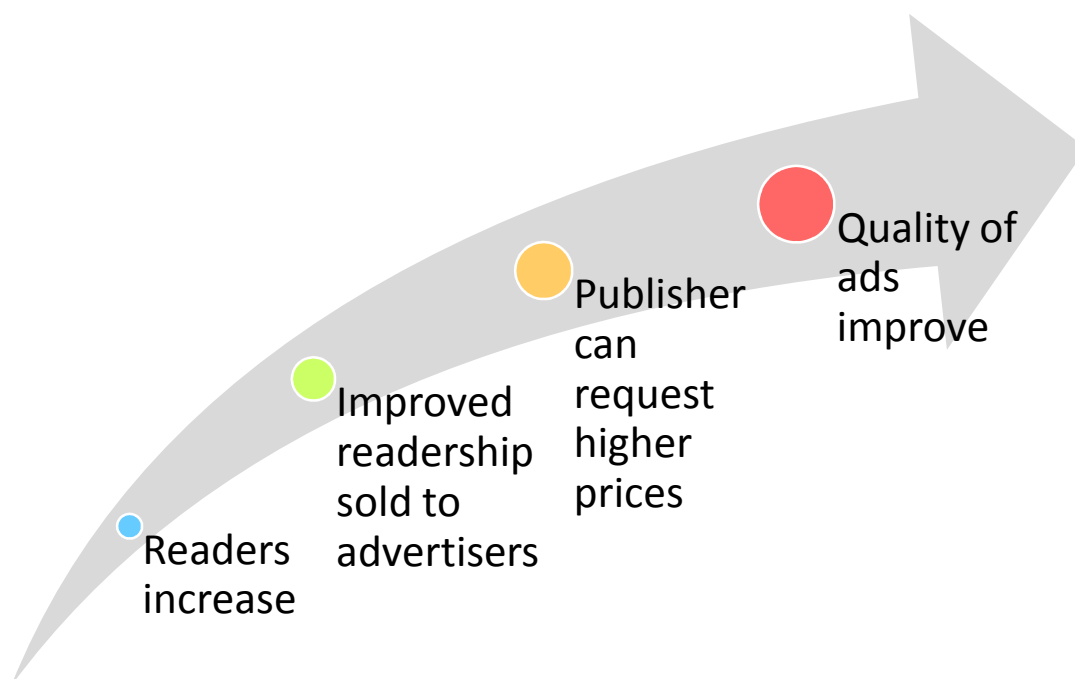


Figure 14 - Network Effects in the Magazine Publishing Industry

Figure 14 takes the Network Effect dynamics together in simple figure. As the readers increase ultimately the quality of advertisements will also increase. The one success leads to the other thanks to Network Effects.

### 3.3.1 The Stand-Alone Value vs. the Network Externality Value

Schilling (2013) reasons that all offerings have a *stand-alone value* and some have what she calls a *network externality value*. The stand-alone value is the value of a value proposition without any other external value contributions. The network externality value is the sum of the stand-alone value, the value contributed by the installed base as well as the availability of complementary goods (Schilling, 2013).

The *installed base*, as referred to by Schilling (2013), is the size of active users either participating or transacting on the Platform that increases the benefit of Network Effects. This means that as the installed base increases the network externality value increases – as explained in the magazine example above.

*Complementary goods* is the infrastructure and technology that allow the two distinct user groups to connect via the Platform (Eisenmann, *et al.*, 2006; Cusumano, 2010). For instance, web searchers will not be able to access Google’s search engine if they do not have a device such as a computer, tablet or phone to connect to the Internet. In this example computers, tablets and phones are considered as complementary goods. Complementary goods will be discussed in full at a later stage in this thesis (this section will however give a vague idea of the different value aspects of complementary goods). Figure 15 takes all of this together in a simple sketch.

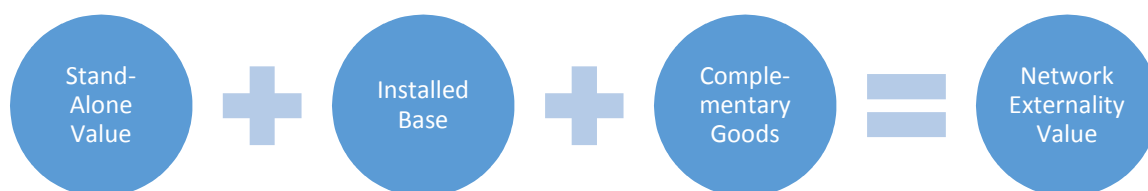


Figure 15 – The Stand-Alone Value vs. the Network Externality Value

Figure 15 shows the difference between the stand-alone value and the network externality value. The network externality value is the sum of:



1) The stand-alone value

The stand-alone value is the value that a certain technology or value offering offers in isolation. For instance, a cellular phone without anybody to call or message allows you to play games, make notes, use the calculator, *etc.* This is thus the stand-alone value of the phone.

2) The installed base

The cellular phone is also designed in such a way to offer value when connected to other users that form part of the installed base. This is the same with Two-Sided Markets. The more users that form part of the installed base *i.e.* both sides of the Two-Sided Market the more valuable the value offering becomes. Note that if only one side of the Two-Sided Market grows and the other stays relatively small there are other complications that arise. These complications will be looked at in another chapter but assume that both sides of the market grow relatively at the same rate.

3) Complementary goods

Complementary goods are technology that is needed to connect to the Platform to gain value from the value proposition. A television is a typical complementary good for owners of gaming consoles. If someone buys a gaming console such as a Sony PlayStation<sup>24</sup>, Microsoft Xbox<sup>25</sup> or Nintendo Wii<sup>26</sup> they need a television in addition to the gaming console to be able to derive the minimum value offered.

This means that the gaming console market is limited to people that have a television or who is willing to buy a television in addition to the relatively expensive gaming console.

The network externality value thus increases if any of the three elements mentioned above improves:

- |                      |  |
|----------------------|--|
| 1) Stand-alone value | Technological utility improves             |
| 2) Installed base    | Both distinct user groups grows in numbers |

---

<sup>24</sup> <https://www.playstation.com>

<sup>25</sup> <http://www.xbox.com>

<sup>26</sup> <http://wii.com>

- 3) Complementary goods                      The access, availability and affordability of complementary goods must be realistic

### 3.3.2 Different Network Effects

A Two-Sided Market consists of a Money-Side and a Subsidy-Side. The Money-Side always pays more than the Subsidy-Side. The Subsidy-Side sometimes pay nothing or even get something at a discounted value, meaning that the Intermediary offers it and in so doing incurs a loss and takes the cost of offering the value proposition upon themselves. Sometimes both sides of the market pay relatively high, sometimes even premium, prices, in these instances it does not matter that much which side is which when referring to the Money-Side and Subsidy-Side.

The Two-Sided Market also always have a User/Consumer side as well as a Supplier/Developer side. It usually happens, not always, that the Subsidy-Side makes up the Users/Consumers side and the Money-Side is the Supplier/Developer side (see Table 9 and Table 10 on page 69 and 70, respectively).

Now that the difference between

- 1) The Money-Side                                      vs.                                      the Subsidy-Side

and

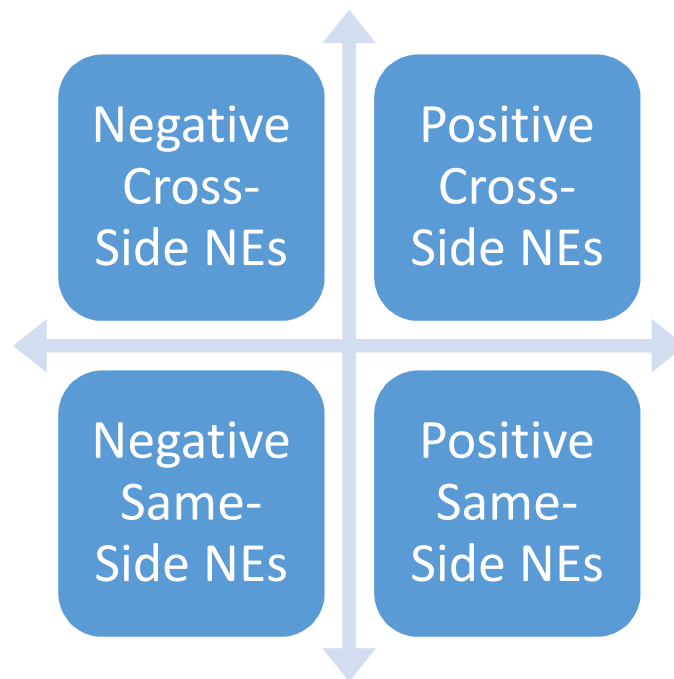
- 2) The User/Consumer side                                      vs.                                      the Supplier/Developer side

Has been established the different Network Effects that can exist on a Platform will be looked at.

First of all it is important to understand that just as there are positive Network Effects that was spoken about there are negative ones also (Filistrucchi, *et al.*, 2012). In addition to positive and negative Network Effects, Network Effects can either be Cross-Side or Same-Side Network Effects (Eisenmann, *et al.*, 2006).

The Network Effects that was spoken about up until this point were Positive Cross-Side Network Effects. Note that there are four different types of Network Effects but that Positive Cross-Side Network Effects are the most common and when only referred to Network Effects it is usually

Positive Cross-Side Network Effects that authors refer to. Figure 16 shows the four different types of Network Effects.



*Figure 16 - The Four Different Types of Network Effects*

Note that there are two dimensions discussed above in Figure 16:

- 1) Network Effect direction:      Cross-Side      vs.      Same-Side
- 2) Network Effect benefit:      Positive      vs.      Negative

Cross-Side Network Effects can either be Positive or Negative; the same with Same-Side Network Effects, they can either be Positive or Negative as well – hence 4 different combinations.

To better explain the four different types of Network Effects real-life examples will be looked at.

### 3.3.3 Examples of the Four Different Types of Network Effects

Real-life examples of each one of the four different types of Network Effects will be looked at.

#### *3.3.3.1 Positive Cross-Side Network Effects*

Positive Cross-Side Network Effects are the most common type of Network Effects that exist and Two-Sided Market success are governed by these (Eisenmann, *et al.*, 2006).

The Network Effects that exist in advertising-supported media such as magazines incorporate Positive Cross-Side Network Effects in their business models.

As explained earlier in the magazine example – the more readers present in the installed base the more valuable the readership becomes for the advertisers and the more willing advertisers are to pay premium prices. It can be agreed that the more readers there are the better it is for advertisers, hence Positive Network Effects. And because of the fact that readers are the one side of the market and they create value for advertisers who are on the other side of the market it is called Cross-Side Network Effects (across the network, from one side to the other).

#### *3.3.3.2 Positive Same-Side Network Effects*

Positive Same-Side Network Effects exist in the gaming console industry. For instance, if someone owns a Sony PlayStation gaming console and he has friends that also have Sony PlayStations he can borrow games from them – this is a Positive Same-Side Network Effect. It is a Positive value created for users on the same side of the Two-Sided Market.

#### *3.3.3.3 Negative Cross-Side Network Effects*

A great example of Negative Cross-Side Network Effects is that of television ads. Some viewers do not value television ads and see it as a negative aspect of television. The same can be said for some magazine readers that prefer magazines without advertisements. This is a typical example of Negative Cross-Side Network Effects because advertisers are on the one side of the Platform and television viewers are on the other side being negatively influenced – hence a Negative Cross-Side Network Effect (Filistrucchi, *et al.*, 2012).

#### *3.3.3.4 Negative Same-Side Network Effects*

Negative Same-Side Network Effects can occur on the advertiser side of advertising-supported media. If the advertiser side of the market grows the price requested by the Intermediary might

increase due to a higher demand by advertisers. Advertisers might consider this as a Negative Same-Side Network Effect.

Negative Same-Side Network Effects can also be the case if a competitor of a specific business joins on the same side of the market. Due to growth of the market side Negative Same-Side Network Effects were incurred.

The lists of possible Network Effects that can exist are endless and there is not necessarily only one of each of the different types of Network Effects present in a single Two-Sided Market business model. There can sometimes be multiple Network Effects of one type and none of the other – every business is a unique case.

The basis of understanding Network Effects has been established. One-Sided Markets vs. Two-Sided Markets will be considered next.

#### 3.3.4 One-Sided Markets vs. Two-Sided Markets

As discussed in the Introduction of this thesis is that there are both similarities and differences between One-Sided Markets and Two-Sided Markets.

Although literature is very limited on speaking about these similarities and differences there are a couple of basic aspects that will be looked at. Note that this is not an exhaustive list because literature is limited and innovation arises continually on a daily basis.

##### 3.3.4.1 Network Effects

The fundamental difference between One-Sided Markets and Two-Sided Markets are that Two-Sided Markets rely on Network Effects to add to the stand-alone value of the value offering by incorporating these Network Effects (see Figure 15) (Eisenmann, *et al.*, 2006; Parker & Van Alstyne, 2008; Filistrucchi, *et al.*, 2012).

Eisenmann *et al.* (2006) paints a perfect picture to explain the difference between the value chains of One-Sided Markets and Two-Sided Markets:

*Two-sided networks differ from other offerings in a fundamental way. In the traditional value chain (one-sided markets) value moves from left to right: to the left of the company is cost; to the right is revenue. In the two-sided network value chain (two-sided markets) cost and revenue are both to the left and the right, because the platform has a distinct group of users on each side. The platform incurs costs in serving both groups and can collect revenue from each, although one side is often subsidized.*

Figure 17 and Figure 18 shows perfectly what Eisenmann *et al.* (2006) refers to.

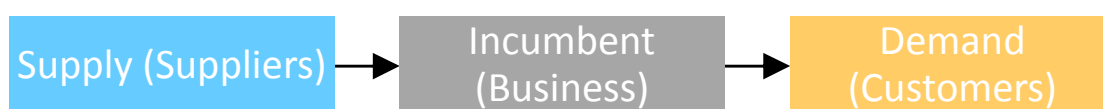


Figure 17 - The Value Chain of One-Sided Markets

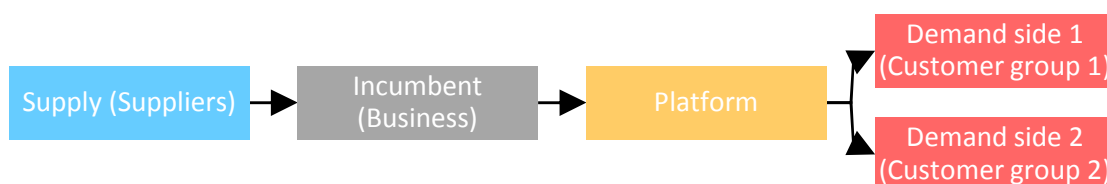


Figure 18 - The Value Chain of Two-Sided Markets

Figure 17 shows the value chain of One-Sided Markets. It has supply on the left and demand on the right. According to Eisenmann *et al.* (2006):

*In the traditional value chain (one-sided markets), value moves from left to right: to the left of the company is cost (supply); to the right is revenue (demand).*

Figure 18 illustrates the value chain of Two-Sided Markets. Note that Two-Sided Markets have supply on the left and two demands created by the two distinct market segments. According to Eisenmann *et al.* (2006):

*In two-sided networks (two-sided markets), cost (supply of network effects) and revenue (demand) are both to the left and the right, because the platform has a distinct group of users on each side. The platform incurs costs in serving both groups and can collect revenue from each, although one side is often subsidized, as we'll see.*

This elucidates what Eisenmann *et al.* (2006) means. It is important to understand that the deciding factor whether a market is two-sided or not is whether Network Effects can be incorporated between two distinct user groups.

#### *3.3.4.2 Competition amongst One-Sided Markets and Two-Sided Markets*

Just as Multi-Sided Platform Businesses are competing for two distinct market segments so does traditional and conventional businesses also target market segments – even though it might only be one. Often One-Sided Markets and Two-Sided Markets overlap; both traditional and conventional businesses as well as Multi-Sided Platform Businesses compete for the same market segment.

Billboards (a typical One-Sided Market) typically compete with magazines (a typical Two-Sided Market) because both of them target advertisers. This is only one of the many examples that exist in the vast world of market competition (Filistrucchi, *et al.*, 2012).

It is important to realize that just because a business is serving a Two-Sided Market does not make them superior to others that do not. They do however have the benefit of internalizing Network Effects that can lead to market leadership (competition will be looked at only later on in this thesis).

#### *3.3.4.3 Reconceiving One-Sided Markets as Two-Sided Markets*

Many businesses have taken the risk to reconceive their One-Sided Market and transforming it as a Two-Sided Market in hopes of capturing the Network Effect benefits that it offers.

Filistrucchi *et al.* (2012) gives an excellent example of a business that has tried to do just that:

*To see the point, just think of a social network like Facebook<sup>27</sup>. It started catering to people wishing to connect to their friends, but it later started to sell advertising slots. As advertisers clearly attach a positive value to reaching more users (of their target group) on Facebook, the market for social networks has clearly become two-sided.*

Johnson *et al.* (2008) also makes reference to a similar example of a business that went from serving a One-Sided Market to implementing and establishing Network Effects. This company is none other than Apple<sup>28</sup>.

First of all it is important to remember that Apple were not the first to launch digital music players (Johnson, *et al.*, 2008). What they did however do right after launching their digital music player, the notorious iPod<sup>29</sup>, they “plugged-in” their iTunes Store<sup>30</sup> business unit. Although they only did this at a later stage their iTunes Store business unit complemented that of their iPod business unit. The music that was available to buy from the iTunes Store was playable on iPods.

As soon as Apple did this they immediately reconfigured their One-Sided Market of targeting a market segment that is interested in digital music players to a Two-Sided Market where iPod owners (User/Consumer side of the Two-Sided Market) have access to affordable music provided by music publishers (Supplier/Developer side of the market). Apple, as the Intermediary, reconfigured the music publishing industry when they created a Platform, the iTunes Store, where iPod owners could network with music publishers to gain easy access to their desired music.

Johnson *et al.* (2008) had this to say about Apple’s outstanding business model innovation that they executed superbly:

*Apple did something far smarter than take a good technology and wrap it in a snazzy design. It took a good technology and wrapped it in a great business model. Apple’s true innovation was to make downloading digital music easy and convenient. To do that, the company built a ground-breaking business*

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<sup>27</sup> <https://www.facebook.com>

<sup>28</sup> <http://www.apple.com>

<sup>29</sup> <http://www.apple.com/ipod>

<sup>30</sup> <http://www.apple.com/itunes>



*model that combined hardware (iPod – user/consumer side), software (iTunes store – platform), and service (music publishers – supplier/developer side).*

This business case will not be explored right away, only at a later stage in this thesis. Do however take note that businesses can reconfigure their value offerings to one that incorporates Network Effects. Transition opportunities are hard to spot and even harder to execute successfully.

Business model innovation such as that of Apple is exactly what this thesis looks to promote. The Business Model Framework that will be developed will assist in executing business model innovation such as the cases of Facebook and Apple mentioned above.

### 3.4 Conclusion: Identifying Business Model Framework Design Requirements

Two-Sided Markets, Multi-Sided Platform Businesses and Network Effects offer many insights as study subjects. The concluding section of this chapter will list all the design requirements that were identified throughout the literature study of this chapter.

Table 11 - Design Requirements Identified in Chapter 3

<b>1. Customer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
1.1	3.1.1	62	Two distinct user groups	The business model framework should accommodate two distinct user groups	<input type="checkbox"/>
1.2	3.1	57	Needs	Both sides of the Two-Sided Market has a distinct need that they demand	<input type="checkbox"/>
1.3	3.1	57	Subsidy-Side vs. Money-Side	A Two-Sided Market has at least one Money-Side. The other side can either be a Subsidy-Side or a Money-Side	<input type="checkbox"/>
1.4	3.1	57	User/Consumer side vs. Supplier/Developer side	A Two-Sided Market has a User/Consumer side and a Supplier/Developer side	<input type="checkbox"/>

<b>2. Offer</b>					
<b>No.</b>	<b>Sect.</b>	<b>Pg.</b>	<b>Design Requirement</b>	<b>Notes</b>	<input checked="" type="checkbox"/>
2.1	3.1	57	Value propositions	Both sides of the Two-Sided Market demands a value proposition	<input type="checkbox"/>
2.2	3.3	72	Network Effects	Network Effects are present between the two distinct user groups	<input type="checkbox"/>
2.3	3.3.2	76	Cross-Side vs. Same-Side Network Effects	Network Effects are either Cross-Sided or Same-Sided	<input type="checkbox"/>
2.4	3.3.2	76	Positive vs. negative Network Effects	Network Effects are either Positive or Negative	<input type="checkbox"/>

<b>3. Infrastructure</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
3.1	3.1.1	62	Platform	Every Multi-Sided Platform Business model includes a Platform	<input type="checkbox"/>
3.2	3.2.1	65	Four different Platforms	Every Multi-Sided Platform Business is either an Exchange, Advertising-Supported Media, Transaction System or Software Platform.	<input type="checkbox"/>

<b>4. Financial Viability</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Financial Viability design requirements were identified in this chapter.

<b>5.</b>	<b>Other</b>				
<b>No.</b>	<b>Sect.</b>	<b>Pg.</b>	<b>Design Requirement</b>	<b>Notes</b>	<input checked="" type="checkbox"/>

Also, no *Other* design requirements were identified in addition to the design requirements identified in the previous chapter that are relevant.

Two-Sided Markets have two distinct user groups that need to be served, consequently two respective prices should be offered to the two markets. Many challenges arise when establishing prices. The next chapter will go on to look at pricing.

# Chapter 4

## Pricing

*In general, the optimal price pair for two-sided markets linked by network externalities is not obvious. Failing to recognize that two-sided market pricing follows different rules than conventional businesses can sink even the most attractive platforms.*

– Parker & Van Alstyne,

**Two-Sided Network Effects: A Theory of Information Product Design, 2005**

### 4. Pricing

Pricing in Two-Sided Markets can be an extremely complex matter because of the fact that a Multi-Sided Platform Business aims to do two important yet contradicting and challenging tasks at the same time:

- Grow their markets through → Pricing-minimization, and
- Generate a revenue stream through → Pricing-maximization

In order to grow their markets it needs to offer low prices (pricing minimization) to incentivize people to get on board but on the other side it needs to grow its value as well as generate value for shareholders by generating a revenue stream (pricing maximization).

The **research objective** of this chapter is to discover pricing in the light of Two-Sided Markets. Also, design requirements will be identified throughout the literature study that will be done on pricing.

The **research outcome** of the chapter is the design requirements that will be identified. These design requirements will be used to ultimately develop the Two-Sided Market Business Model Framework.

The **research methodology** that was used to write this chapter and research pricing with regards to Two-Sided Markets was a combination of literature research as well as deductive reasoning. The literature study relied on journal articles, theses and textbooks available in the academic domain. An empirical observations method was also relied on to identify some elements from real-life cases.

First of all it is important to realize that One-Sided Market pricing formulas do not apply to Two-Sided Market pricing (Evans & Schmalensee, 2005). Evans & Schmalensee (2005) goes on to explain Two-Sided Market pricing formulation as a “complex” task.

Eisenmann *et al.* (2006) further exclaim this point in saying that:

*Failing to recognize that two-sided network pricing follows different rules than conventional businesses can sink even the most attractive platforms.*

Intermediaries do not rely on conventional pricing models. Intermediaries demand two different prices from the two distinct user groups, hence *asymmetric pricing*. Asymmetric pricing is the pricing structure that Intermediaries rely on.

#### 4.1 Pricing Models

The fact that Two-Sided Markets have two distinct user groups that they need to request a price from is what makes Two-Sided Market pricing a complex element in establishing a Multi-Sided Platform Business Model. Evans and Schmalensee (2005) refer to this as asymmetric pricing.

Two-Sided Market pricing is not nearly as simple as One-Sided Market pricing in the sense that One-Sided Market pricing has three basic pricing strategies that ultimately fall into three different pricing tiers – from high premium prices to low economic prices (Richards, 2015).

### 1) Premium pricing

Premium pricing establishes a price higher than competitors. This can typically be done if a business wants to position themselves in a different market space than competitors to attract different customers (typically a niche market) or because they have design superiority.

A *niche market* is a “*specific, specialized customer segment*” that requires “*tailored*” value propositions (Osterwalder & Pigneur, 2010).

*Design superiority* is whenever a business has a competitive advantage due to its value offering that has a superior design relative to competition (Schilling, 2013).

### 2) Penetration pricing

The aim of penetration pricing is to capture market share by pricing lower than competitors. It can mean that businesses do this even though it might incur a loss, but not necessarily. This can potentially result in a price war amongst competitors.

A price war is a period of fierce competition in which businesses cut prices in an attempt to increase their share of the market.

### 3) Economy pricing

Economy pricing is a familiar pricing strategy that takes a very basic, low-cost approach to pricing. It includes taking the minimum to keep prices low and attract a specific market segment that might be very price-sensitive.

These three pricing strategies apply primarily to One-Sided Markets. They are already a challenge in establishing a pricing strategy it is even more so with Two-Sided Markets. As this thesis will go on it will be seen that all three of these One-Sided Market pricing strategies can be found in either sides of the Two-Sided Market.



## 4.2 Asymmetric Pricing

This section will look at the different ways in which Two-Sided Markets can be priced as well as the reasons for that. Eisenmann *et al.* (2006) states that pricing is the single most important element for a Multi-Sided Platform Business Model to be successful, they refer to it as the “*key decision*”:

*The key decision is pricing. As we’ve noted, providers of platforms for two-sided networks are able to draw revenue from both sides. In most cases, though, it makes sense to subsidize certain users. The crucial strategy question is, which side should you subsidize, and for how long?*

As can be seen above with the three pricing strategies of One-Sided Markets is that it can be complex, imagine having to do that for Two-Sided Markets. Two-Sided Market pricing is not nearly a one-size-fits-all model.

The following sub-section will aim to expound on the pricing strategy of Two-Sided Markets as good as possible.

### 4.2.1 Market Growth through Asymmetric Pricing

As discussed in the previous chapter, in order for Two-Sided Markets to successfully exist Network Effects need to be incorporated. Also, the greater the Network Effects the greater the value proposition that the business can offer. Enhanced Network Effects can only be established through bigger markets on both sides of the Two-Sided Market.

Many authors (Schilling, 2013; Teece, *et al.*, 1997) describe Network Effects as a phenomenon where the following is true:

*Increasing returns to adoption*

This basically means that the more users that get added to the installed base (on either sides of the market) the greater the return for both the incumbent business (by means of revenue streams) and the market (by means of the value offering). Thus, in order to increase Network Effects at least one side of the market should grow. What better way to do this than to subsidize one side of the market as an incentive to get on board?

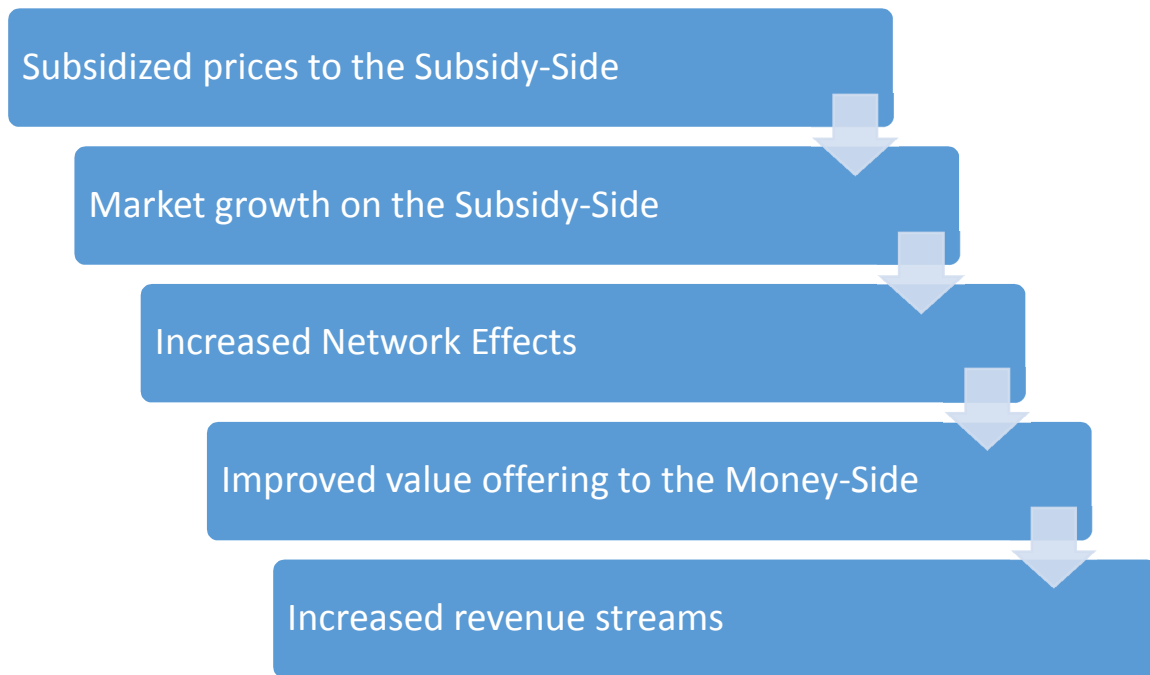


Figure 19 - The Effect of Asymmetric Pricing

Figure 19 explains the successive impact of asymmetric pricing. Because of subsidized prices offered to the Subsidy-Side it effectively produces increased Network Effects. The increased Network Effects (typically Positive Cross-Side Network Effects) improves the value offering presented to the Money-Side. The price requested to the Money-Side can be increased or due to the increased Network Effects more Money-Side users will join that will ultimately result in improved revenue streams and hence increased value created for shareholders.

This phenomenon is clear in the advertising-supported media industry. The reason that magazine publishers subsidize magazines by either giving it away for free or selling it at a subsidized price and still incurring a loss is because they know that by growing the audience of readers (readership) the Money-Side of advertisers will either grow because of the increased Network Effects, or the magazine publisher can request higher prices due to a bigger audience, or even initiate both, hence generating greater revenue streams and ultimately increased value for shareholders.

Eisenmann *et al.* (2006) supports this phenomenon in stating:

*Because the number of subsidy-side users is crucial to developing strong network effects, the platform provider sets prices for that side below the level it would*

*charge if it viewed the subsidy-side as an independent market. Conversely, the money-side pays more than it would if it were viewed as an independent market.*

Rochet & Tirole (2005) supports this and writes that:

*A market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other side by an equal amount; in other words, the price structure matters, and Platforms must design it so as to bring both sides on board.*

It has been confirmed that it is an excellent strategy to subsidize one side of the markets to grow it in order to get the other side on board. The next question that needs to be asked is which side should be subsidized? This might seem like a simple question but many (Parker & Van Alstyne, 2005; Eisenmann, *et al.*, 2006; Rochet & Tirole, 2005) think otherwise. Subsidizing the wrong side can end catastrophically.

#### 4.2.2 Identifying the Subsidy-Side and Money-Side in Asymmetric Pricing

Eisenmann *et al.* (2006) make a great point with regards to which side should be subsidized:

*The challenge for the platform provider with pricing power on both sides is to determine the degree to which one group should be encouraged to swell through subsidization and how much of a premium the other side will pay for the privilege of gaining access to it.*

It comes down to a pricing strategy – having a plan of how to grow markets through pricing as well as generating a revenue stream.

Literature offers two aspects that should be borne in mind whenever doing asymmetric pricing for Two-Sided Markets:

- 1) Price-sensitivity
- 2) Quality vs. Quantity

These two aspects might not make complete sense right away but will be explained in the following sub-sections.

#### 4.2.2.1 Price-Sensitivity

Due to the fact that Multi-Sided Platform Businesses target two completely distinct markets they are bound to face two markets with different price appetites. Price-sensitivity plays a major role when structuring the pricing model. Also, deciding which side's price should be subsidized and whether it should be done at all.

Eisenmann *et al.* (2006) suggest that:

*Generally, it makes sense to subsidize the network's more price-sensitive side and to charge the side that increases its demand more strongly in response to the other side's growth.*

Filistrucchi *et al.* (2012) goes on and says the same for the Money-Side – the side that might be more willing to pay, who are less price-sensitive:

*The side that attaches a higher positive value to the other one is going to pay more. One could argue for instance that this is the reason behind heterosexual nightclubs charging a higher price to men than to women or behind the observation that in most countries merchants pay for card transactions whereas cardholders do not.*

Price-sensitivity is therefore an element when structuring asymmetric pricing models for Two-Sided Markets. It can thus be concluded that the Subsidy-Side should typically be the more price-sensitive side and the Money-Side the less price-sensitive side as shown in Figure 20 below.

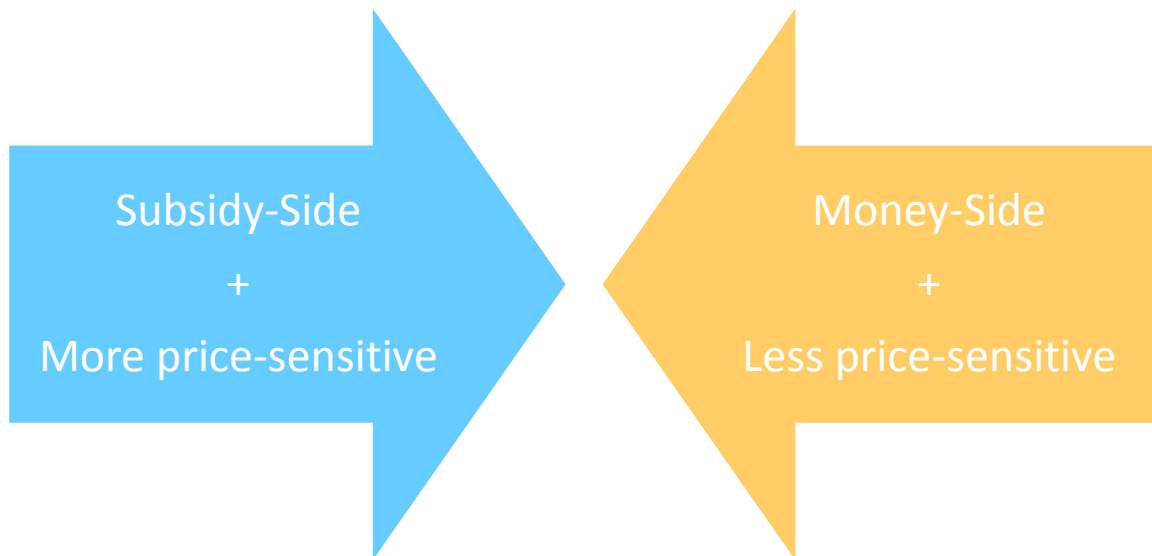


Figure 20 - Money-Side vs. Subsidy-Side Price-Sensitivity

Note that this is only an observation and one strategy that is used to do asymmetric pricing. The less price-sensitive side can be targeted as the side from which revenue will be drawn and the more price-sensitive side can be subsidized and targeted for growth.

The next sub-section will look at another pricing strategy.

#### 4.2.2.2 Quality vs. Quantity

Eisenmann *et al.* (2006) suggest that the side that is “sensitive to quality” should be subsidized (Subsidy-Side). This means that the market side that demands a quality value offering – usually the User/Consumer side. It might seem contradicting because a high demand for excellent quality would typically not be subsidized but Eisenmann *et al.* (2006) suggest otherwise. Eisenmann *et al.* (2006) goes on to say that the side from which the quality is demanded should be charged; hence the Money-Side should supply the quality.

The Money-Side that supplies the quality and that needs to pay will only do so if there is an installed base worth doing it for. This installed base, for example the installed reader base of a magazine publisher, needs to be big (contributing increased Network Effects) in order for advertisers to even

consider paying a premium price and delivering quality advertisement campaigns. The Subsidy-Side typically needs to be big – hence *quantity*.

This will be referred to as the *Quality vs. Quantity principle*. Figure 21 shows the two sides – Subsidy-Side and Money-Side that needs to provide Quantity and Quality, respectively.

This points back to the previous chapter. Eisenmann *et al.* (2006) suggest that the Money-Side is typically the Supplier/Developer side and that the Subsidy-Side is typically the User/Consumer side.

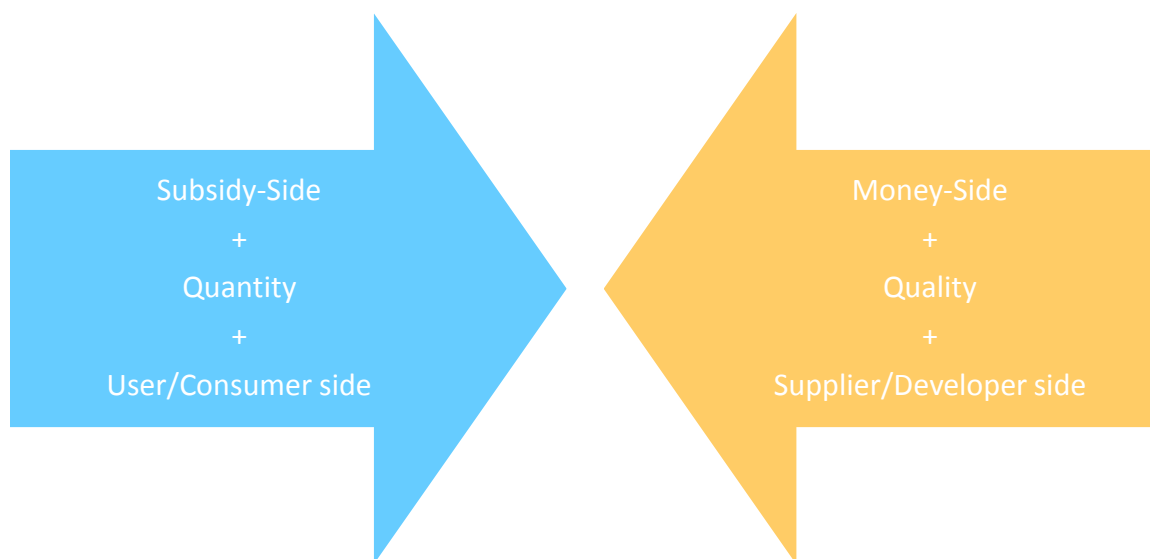


Figure 21 - The Quality vs. Quantity Principle in Two-Sided Markets

Combining these two principles, note that they are not absolute but merely observations of what some authors (Eisenmann, *et al.*, 2006; Filistrucchi, *et al.*, 2012) have empirically observed.

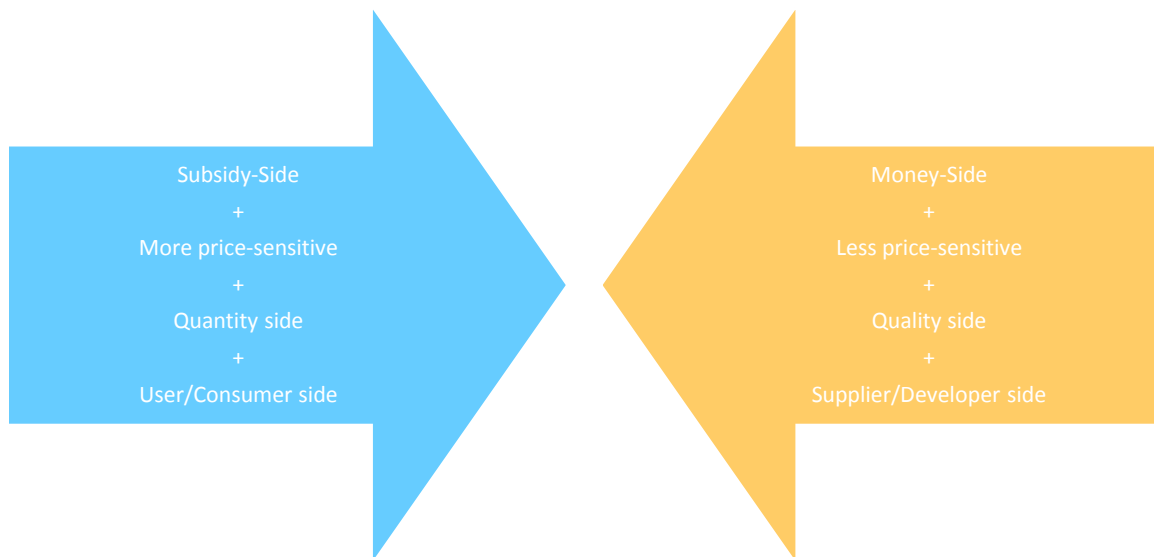
The Subsidy-Side is typically:

- More price-sensitive,
- The Quantity side – the size of the market is more important than the quality contributed, and
- The User/Consumer side.

The Money-Side is typically:

- Less price-sensitive,
- The Quality side – the quality of the market matters more than the quantity (size) contributed, and
- The Supplier/Developer side.

Figure 22 below combines what was mentioned above and shows figuratively the characteristics of both sides of the Two-Sided Market.



*Figure 22 – The Subsidy-Side vs. Money-Side of Asymmetric Pricing*

Although the two principles of price-sensitivity and Quality vs. Quantity might seem generic they are not completely. Note that the two previous sub-sections, price-sensitivity and Quantity vs. Quality, are only observations made by authors and it cannot be said that it is entirely true.

Real-life examples will be considered next to better prove this statement.

#### 4.2.2.3 Real-Life Examples of Asymmetric Pricing

The two principles explained above (price-sensitivity and Quality vs. Quantity) are observed phenomenon but, as mentioned, not absolute. They can be present in some businesses of a specific industry and absent in businesses competing for the same market space of that same industry, once again it is not a generic rule that suits all Multi-Sided Platform Businesses.

An example can be seen in the advertising-supported media industry of magazines. Some magazine publishers choose to give magazines away for free incurring a loss, others choose to break even on the reader side of the market and others even choose to request premium prices for their magazine even though all of these magazine publishers are targeting the same market of advertisers (the User/Consumer side of the market). They all take a completely different pricing strategy approach to targeting their markets.

Parker & Van Alstyne (2005) also highlights other examples:

*A key contribution of a two-sided network model is determining which side receives a discount. Different firms choose different beneficiaries. In streaming video, portable documents, and advertising, for example, the industry norm is to subsidize content consumers and charge content developers. The opposite, however, holds true for operating systems and multiplayer games in which content developers receive subsidies and consumers pay to join the network.*

Examples where the Subsidy-Side is the User/Consumer and the Money-Side is the Supplier/Developer are highlighted in blue in Table 12 below.

Then, to prove the point that not all principles mentioned above (price-sensitivity and Quality vs. Quantity) are true for all industries and businesses, other examples exist where the Subsidy-Side is the Supplier/Developer and the Money-Side is the User/Consumer. Examples of these are highlighted in orange in Table 12 below.



Table 12 - Real-life Examples of Subsidy-Side & Money-Side vs. User/Consumer Side & Supplier/Developer Side

(Adapted from Parker & Van Alstyne, 2005)

Industry	Two-Sided Market	Subsidy-Side	Money-Side
Video streaming	User/Consumer	X	
	Supplier/Developer		X
Portable documents	User/Consumer	X	
	Supplier/Developer		X
Advertising	User/Consumer	X	
	Supplier/Developer		X
Operating systems	User/Consumer		X
	Supplier/Developer	X	
Multiplayer games	User/Consumer		X
	Supplier/Developer	X	

### 4.3 Pricing Model Elements

It has been proved that there is not one generic pricing model that fits all Multi-Sided Platform Business Models. This section will look at the different elements that can make up pricing models for Two-Sided Markets.

This is a complex aspect to research and explain because such a vast field of knowledge and practice exists. It is ever-growing and innovating – in both One-Sided as well as Two-Sided Markets. The discussions that will follow is not fully exhaustive, it consists of what was gathered from the studied literature as well as empirical observations from real-life cases.

#### 4.3.1 Joining Fees (e.g. Permits)

Intermediaries can charge a once-off joining fee for any side or both of the two customer groups.

Gaming consoles typically do this in the form of permits. They sell permits to game developers that wants exclusive access to develop games for their gaming console. Permits thus allows exclusive access to the Platform.

#### 4.3.2 Fixed Recurring Fees (Rochet & Tirole, 2005)

Intermediaries can charge fixed recurring fees to either one or both sides of the market. This is typically done on a monthly or annual basis.

Netflix<sup>31</sup> typically does this. Netflix has a database of movies (Platform) that all subscribers (User/Consumer side) can access if they pay a monthly or annual fee. The movies are supplied by film publishers (Supplier/Developer side).

#### 4.3.3 Usage Fees

Usage fees are only charged whenever a user of the installed base makes use of the services or buys a product via the Platform.

Google's AdWords business works like this. An advertiser (Money-Side, Supplier/Developer side) loads money on to his account and buys credit. Only when web searchers click on the website link of the advertiser does money get debited from their account and credited to Google's account. Thus, it is only when a user makes use of the service or buys a product that fees are charged.

#### 4.3.4 Freemium, Trial Accounts and Free Credit

Some Intermediaries give the option to users to either be a *free* or a *premium* user, hence it is called a *freemium* pricing model (combination between *free* and *premium*). The free user has limited access to the Platform but does usually not have to pay anything and receives whatever value offering he gets offered for free or at a subsidized rate. Premium users have full access to the Platform but this comes at a premium price.

Another example that is similar is that of *trial accounts*. This is where users have the option of joining the Platform but only for a limited time period. After this period they have the opportunity to join the Platform at a premium or they can leave the Platform.

Some Platforms give users free credit to spend on the Platform as an incentive to join the installed base and to see exactly how the Platform works. Some users might be unsure whether they want to sign-up and join for a set period, this is an excellent way to draw these kinds of users and let them get an idea of how the Platform operates by giving them free credit that they can spend. This is an excellent strategy aimed towards markets that need to grow one side (or both sides) of the market to ensure increased Network Effects.

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<sup>31</sup> <https://www.netflix.com>

#### 4.3.5 Royalties

Royalties are common amongst Two-Sided Markets. A *royalty* is a cut of a price paid that was split from the full price. The cut, the royalty, then gets paid to another party that has also made the transaction possible. The royalty serves as the compensation for the entity that has enabled the transaction.

Apple uses it in their iTunes Store business unit when music publishers pay royalties to them for every song or album sold. For every song that is bought on the Apple iTunes Store the majority of the money goes to the music publishers that owns the rights on the music and Apple takes the other share of the price paid – a royalty.

Gaming console Intermediaries utilize it by receiving royalties from game developers for every game sold to gaming console owners (*i.e.* gamers or players). For every game sold the game developers give a cut of the profit to the gaming console business – a royalty.

#### 4.3.6 Subsidy-Pricing

Last and definitely not the least is *subsidy-pricing* – the most common amongst Two-Sided Markets. The other pricing elements named above might take a form or be some format of subsidy-pricing. It can be altered to have a subsidy-pricing element associated to it.

Many, but not all, Intermediaries offer value propositions at a subsidy to one side of the market, the Subsidy-Side, to get them on board and ultimately increase the Network Effects, as explained above.

This pricing strategy is easier if each additional user added to the installed base of the Subsidy-Side has none or very little incremental costs (Parker & Van Alstyne, 2005).

Google has executed this excellently. For each additional web searcher using the Google search engine there are no significant incremental costs.

Subsidy-pricing might seem like an irrational strategy and profit-minimizing at first but many businesses have proved that it is indeed profit-maximizing. The loss that is incurred on the Subsidy-Side is more than made up for on the Money-Side. This can be done thanks to Network Effects.

It can be seen that there are multiple pricing elements that can be included in a pricing model of Two-Sided Markets.

Table 13 highlights different pricing models. Note that MC stands for Marginal Costs – the cost added by producing one additional unit of a product or service to a user.

Table 13 - Examples of Two-Sided Platform Pricing Structures

(Source: Evans & Schmalensee, 2005)

\*MC = Marginal Costs

Industry	Two-Sided Market	Access	Usage
Heterosexual dating clubs	Men	Yes	Yes
	Women	No	No
Real estate brokers	Seller	Yes	No
	Buyer	No	No
Magazines	Reader	Yes (= MC*)	No
	Advertiser	No	Yes
Shopping malls	Shopper	No	No
	Store	Yes	No
PC operating systems	User	Yes	No
	Developer	Yes (< MC*)	No
Gaming consoles	Player	Yes (= MC*)	No
	Game developer	Yes (< MC*)	Yes
Payment card systems	Merchant	No	Yes
	Cardholder	Yes (< MC*)	No

#### 4.4 The Mathematics behind Asymmetric Pricing

To conclude the topic of asymmetric pricing a mathematic explanation will be done regarding asymmetric pricing.

In order for a Multi-Sided Platform Business to be profitable the following should be true:

$$Net\ Revenue_{Two-Sided\ Market} > 0$$

Where:

$$Net\ Revenue_{Two-Sided\ Market} = Revenue_{Money-Side} + Revenue_{Subsidy-Side} \quad \dots\ Equation\ 1$$

And:

$$Revenue_{Money-Side} > 0$$

And:

$$Revenue_{Subsidy-Side} \in (-\infty; +\infty)$$

Hence, for *Equation 1* to be true the following needs to be true:

$$Revenue_{Money-Side} > Revenue_{Subsidy-Side}$$

The Cartesian plane in Figure 23 compiles the above-mentioned equations and shows that in order for an Intermediary to be profitable the price requested to the Money-Side (represented on the y-axis of the Cartesian plane in Figure 23) should always be greater than the revenue generated (or cost incurred) on the Subsidy-Side (represented on the x-axis of the Cartesian plane in Figure 23).

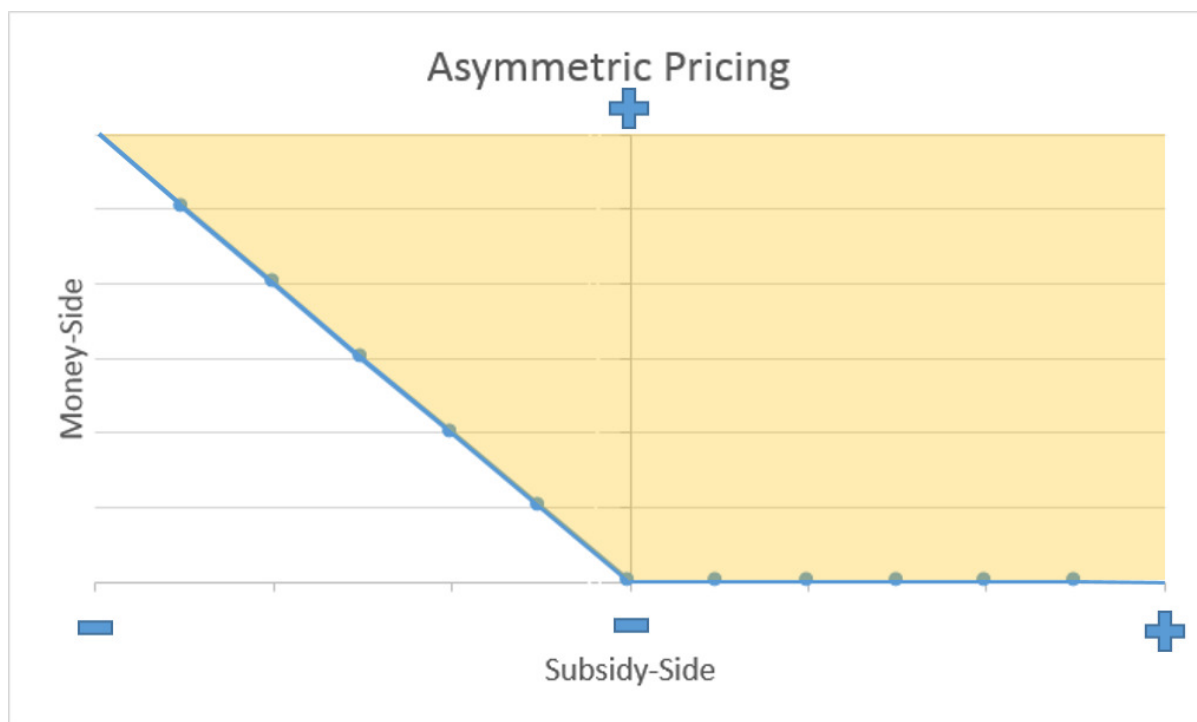


Figure 23 - Asymmetric Pricing Mathematics

Hence, the area indicated by the orange is the possible pricing models that Multi-Sided Platforms can implement in order to be profitable. Note that the graph in Figure 23 accounts for Intermediaries that makes use of subsidy-pricing (taking the costs upon themselves), hence the negative x-axis.

#### 4.5 Transaction and Non-Transaction Two-Sided Markets

Some Platforms require transactions between the two distinct user groups for them to interact successfully. These Two-Sided Markets are called Transaction Two-Sided Markets.

Examples of these are credit card payment systems, the iTunes Store and online bidding and buying Platforms like Amazon<sup>32</sup> and eBay<sup>33</sup>. They require a transaction between the two sides of the market.

Other Two-Sided Markets that do not rely on transactions for interaction between the two sides are called Non-Transaction Two-Sided Markets. Google's AdWords business unit, amongst many others

<sup>32</sup> <http://www.amazon.com>

<sup>33</sup> <http://www.ebay.com>

works like this. Web searchers do not need to transact with advertisers, they merely engage with the website links when it is suggested through a web search.

#### 4.6 Conclusion: Identifying Business Model Framework Design Requirements

Two-Sided Market pricing offer many insights. The concluding section of this chapter will list all the design requirements that were identified throughout the course of this chapter.

Table 14 - Design Requirements Identified in Chapter 4

<b>1. Customer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
1.5	4.2.2.1	94	Price-sensitivity	The one side of the Two-Sided Market is usually more price-sensitive and the other side less price-sensitive	<input type="checkbox"/>
1.6	4.2.2.2	95	Quality vs. Quantity	Each side of the Two-Sided Market can either be a Quality side (contribute quality) or a Quantity side (contribute quantity, show up in high volumes)	<input type="checkbox"/>

<b>2.</b>	<b>Offer</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Offer design requirements were identified in this chapter.

<b>3.</b>	<b>Infrastructure</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
3.3	4.5	104	Transaction or Non-Transaction Platform	A Platform can either be a Transaction or a Non-Transaction Platform	<input type="checkbox"/>



<b>4. Financial Viability</b>					
<b>No.</b>	<b>Sect.</b>	<b>Pg.</b>	<b>Design Requirement</b>	<b>Notes</b>	<input checked="" type="checkbox"/>
4.1	4.2	91	Two pricing models	Each side of the Two-Sided Market requires their own pricing model	<input type="checkbox"/>
4.2	4.3	99	Pricing model elements	<p>A pricing model consists of the following pricing model elements or a combination thereof:</p> <ul style="list-style-type: none"> <li>• Joining fees,</li> <li>• Fixed recurring fees,</li> <li>• Usage fees,</li> <li>• Freemium,</li> <li>• Trial Accounts,</li> <li>• Free Credit,</li> <li>• Royalties, and</li> <li>• Subsidy-pricing</li> </ul>	<input type="checkbox"/>
4.3	4	88	Profit-minimization vs. profit-maximization	A pricing model can either follow a profit-minimization or a profit-maximization strategy	<input type="checkbox"/>
4.4	4	88	Initial vs. future pricing model	Some Intermediaries start out with an initial pricing model and takes on an eventual pricing model at a later	<input type="checkbox"/>

				stage of their business model life cycle	
4.5	4.3.6	101	Incremental costs per user	The incremental costs per user is the additional cost that an Intermediary has to incur in order to take another user on board.	<input type="checkbox"/>

<b>5.</b>	<b>Other</b>				
<b>No.</b>	<b>Sect.</b>	<b>Pg.</b>	<b>Design Requirement</b>	<b>Notes</b>	<input checked="" type="checkbox"/>

No *Other* design requirements were identified in this chapter.

Pricing is used as a mechanism to grow the two distinct user groups of the Two-Sided Market. Other ways to grow the Two-Sided Market will be looked at in the following chapter.

# Chapter 5

## Market Growth

*In a two-sided market the platform typically recognizes this interdependency between the demands it faces from the two groups of customers and has a strong incentive to “internalize” these network externalities. Owing to the interdependency of the sides of a two-sided market, the platform knows that it needs to “get both sides on board” in order to operate. Without one side of the platform, the other side won’t join, and conversely.*

– Lapo Filistrucchi, Damien Geradin & Eric van Damme,

**Identifying Two-Sided Markets, 2012**

### 5. Market Growth

The previous chapter showed that pricing models poses a unique challenge that can either be utilized to a business’s success or demise. Pricing plays a significant role in establishing an Intermediary’s business model and accelerating market growth.

Multi-Sided Platform Businesses can grow their Two-Sided Market via asymmetric pricing – offering a subsidy-price to the one side and requesting a revenue-generating price to the other. This is not the only way that Intermediaries can grow their markets. This chapter will investigate other strategies to accelerate market growth of Two-Sided Markets.

As with advertising-supported media Platforms, such as magazine publishers, businesses need to first grow one side of the market and create a readership that will be able to interact with the advertisements of the advertisers. Without these advertisements that will be sold to advertisers the Intermediary will not be able to generate a revenue stream. But first of all, before the advertisers would be willing to buy advertisement slots they need to know that there is an audience of readers waiting to interact with their marketing campaigns (*i.e.* readership). This brings about a catch-22. The incumbent business needs to bring both sides on board at the same time but they usually tend to only get on board as soon as the other side has joined. This means that businesses need to grow both sides at the same time in a relatively similar ratio – this is an extremely tough challenge, as businesses do not have complete control over market growth. This chapter will look at different ways as well as certain principles regarding market growth. Once again, this is not an exhaustive list but only those that were taken from the literature studied.

The **research objective** of this chapter is to research market growth focused on Two-Sided Markets. Also, design requirements will be identified throughout the market growth research that will be done.

The **research outcome** of the chapter is to identify design requirements. The design requirements will assist the Two-Sided Market Business Model Framework development process.

This chapter relied on literature research and deductive reasoning **research methodology** techniques.

## 5.1 Market Growth Balance

As mentioned above Intermediaries need to grow both sides of the Two-Sided Market. Because of Network Effects it is not as simple as it sounds because at least one side of the market relies on the value added by the other, particularly the size of the installed base of the other side. This is one of the major, if not the greatest reason for asymmetric pricing.

By subsidizing the one side of the market they will be more willing to participate on the Platform which will lead to market growth on that side (usually the Subsidy-Side) and ultimately draw the other side to get on board as well (usually the Money-Side). This is a chicken-and-egg scenario. The

one side needs to get on board before the other side will, and vice-versa. All successful Multi-Sided Platform Businesses faced this challenge and had to grow both markets at the same time.

The market growth needed to happen with the correct ratio and balance with regards to the two sides of the Two-Sided Market.

Filistrucchi *et al.* (2012) explains this excellently:

*In a two-sided market the platform typically recognizes this interdependency between the demands it faces from the two groups of customers and has a strong incentive to “internalize” these externalities. Indeed, owing to the interdependency of the sides of a two-sided market, the platform knows that it needs to “get both sides on board” in order to operate. Without one side of the platform, the other side won’t join, and conversely.*

*If one takes the example of a heterosexual dating club, no man will join unless women do and vice versa. It is also fundamental for the platform to attract the different sides in the right proportion. For example, a heterosexual dating club with too many men and too few women will not be successful and vice versa.*

*Similarly, a video game console without enough interesting games will not attract players and one without enough players will not attract game developers.*

*One way for the platform to get the balance right is by setting the right prices on the two sides.*

It can be seen above that asymmetric pricing is the most widely recognized and utilized strategy for getting both sides of the Two-Sided Market on board, other strategies do however exist and will be investigated shortly.

Parker & Van Alstyne (2005) agrees with the statement of Filistrucchi *et al.* (2012) mentioned above:

*For intermediaries, the chicken-and-egg profit-maximization problem is how to grow matched markets. A straightforward and widely observed solution is to discount one*

*market in order to grow both, and to profit more from the other. This model favours an intermediary who, straddling both markets, can set prices more efficiently by internalizing these two-sided externalities. Independent firms serving either market separately lose this advantage.*

Network Effects can be a significant competitive advantage to Intermediaries but it obviously needs to be implemented and managed correctly.

Two lessons can be learned from this section:

- 1) The most widely recognized market growth strategy is asymmetric pricing, and
- 2) Market growth on both sides of the market needs to happen in a relatively well-distributed proportion and correct ratio. This is a hard task seeing that Intermediaries have little control over market growth.

The following sections will look at different ways in which Two-Sided Markets can be grown. Some of these strategies focus on one side of the market and others on both sides. Once again, this is not an extensive list. New strategies can also be derived from these, new market growth opportunities awaits; businesses should strategize and innovate in whatever way possible to get the market growth balance right.

## 5.2 Market Growth Threshold

Schilling (2013) writes that markets have a *market growth threshold*. She (Schilling, 2013) explains:

*When an industry has Network Effects, the value of a good to a user increases with the number of other users of the same or similar good. However, it is rare that the value goes up linearly – instead, the value is likely to increase in an s-shape as shown in Figure 24 (below). Initially, the benefits may increase slowly. However, beyond some threshold level, the Network Effect returns begin to increase rapidly, until at some point, most of the benefits have been obtained and the rate of return decreases.*

Figure 24 below shows the three main Network Effect vs. market growth phases.

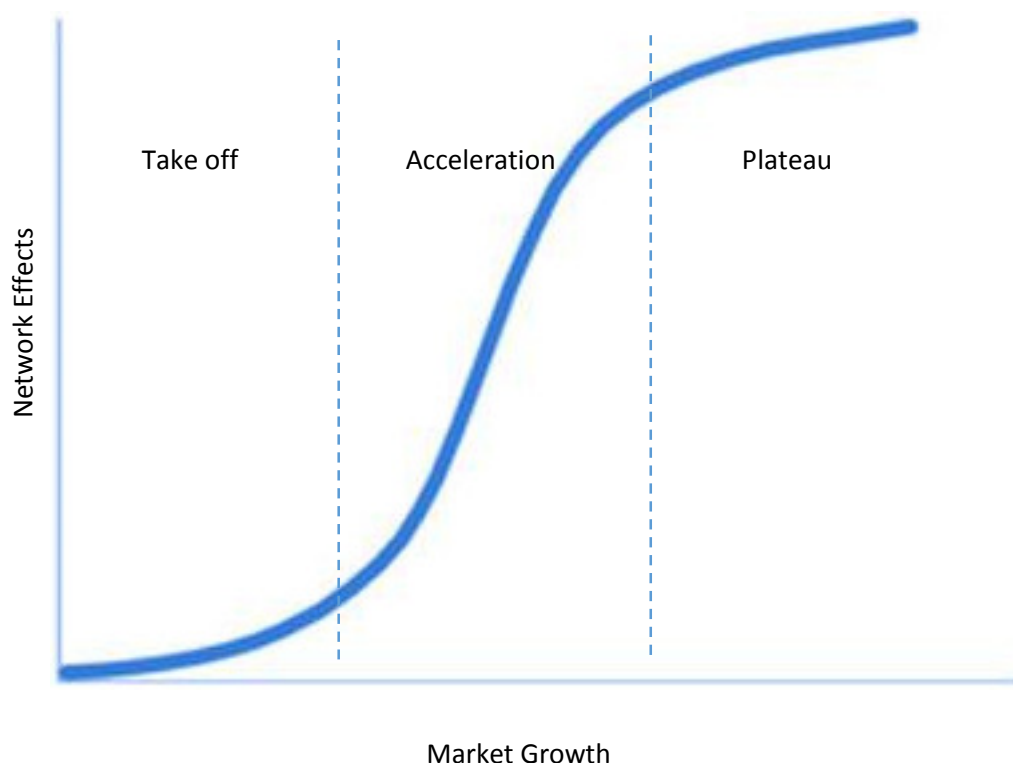


Figure 24 - Network Effects vs. Market Growth (Adapted from Schilling, 2013)

Initially, there is a slow take-off when the market is still relatively small and the rate of return, the Network Effects, are not that significant until at some point the market growth threshold is overcome and the market growth takes off rapidly after the first phase. Accelerated growth occurs in this second phase and the Network Effects are truly significant until at some point the accelerated growth dies out and the rate of return plateaus in the third phase. This does not mean that the Network Effects loses its significance, only that the Network Effects growth is not that great anymore – it can be said that the Network Effects have been well-established and that the growth have reached a 'roof' in a sense.

The challenge that most, if not all, Intermediaries face is that of getting to the accelerated market growth phase as soon as possible, overcoming the market growth threshold as quickly as possible to ensure that a consistent revenue stream is generated to stabilize risk.

If not, businesses might face massive initial capital costs and they will need to maintain the Platform financially before generating a consistent revenue stream. This will most likely only come from the Money-Side that usually gets on board only after the Subsidy-Side is has joined the installed base.

Intermediaries should pursue the market growth threshold to get in to the second phase of market growth as soon as possible to stabilize risk and establish a consistent revenue stream.

### 5.3 Marquee Users

Eisenmann *et al.* (2006) write that Intermediaries should target what they refer to as “*marquee users*”. They (Eisenmann, *et al.*, 2006) define marquee users as:

*All users of two-sided networks are not created equal. The participation of “marquee users” can be especially important for attracting participants to the other side of the network. Marquee users may be exceptionally big buyers, like the U.S. government. Or they may be high profile suppliers, like anchor stores in malls.*

*A platform provider can accelerate its growth if it can secure the exclusive participation of marquee users in the form of a commitment from them not to join rival Platforms.*

Intermediaries can target and approach marquee users that can make a big contribution towards market growth. Marquee users can contribute and lead to massive growth in Two-Sided Markets. Small businesses enjoy identifying with marquee users and using the same services that are used by bigger well-established businesses, it brings peace of mind to these smaller businesses. Smaller businesses might even be willing to pay premium prices that will ensure lower risk compared to using other Platforms. Getting these smaller users on board is important for market growth, but they will follow if marquee users get on board first.

Getting smaller businesses as well as marquee users on board is important for market growth on both sides of the market.



### 5.4 Sign-Up, Switching, Multi-Homing and Exit Costs

In order to encourage and allow market growth the Intermediary should minimize the time and effort that it takes for a user to get on board and join the installed base of existing users. They should also make the operation of the Platform simple. Lastly, they should ring-fence existing users and establish incentives so that installed base users will not exit the Platform and join another Platform.

Figure 25 below shows the different costs that users need to overcome and incur if they want to affiliate or end their affiliation with the Platform.

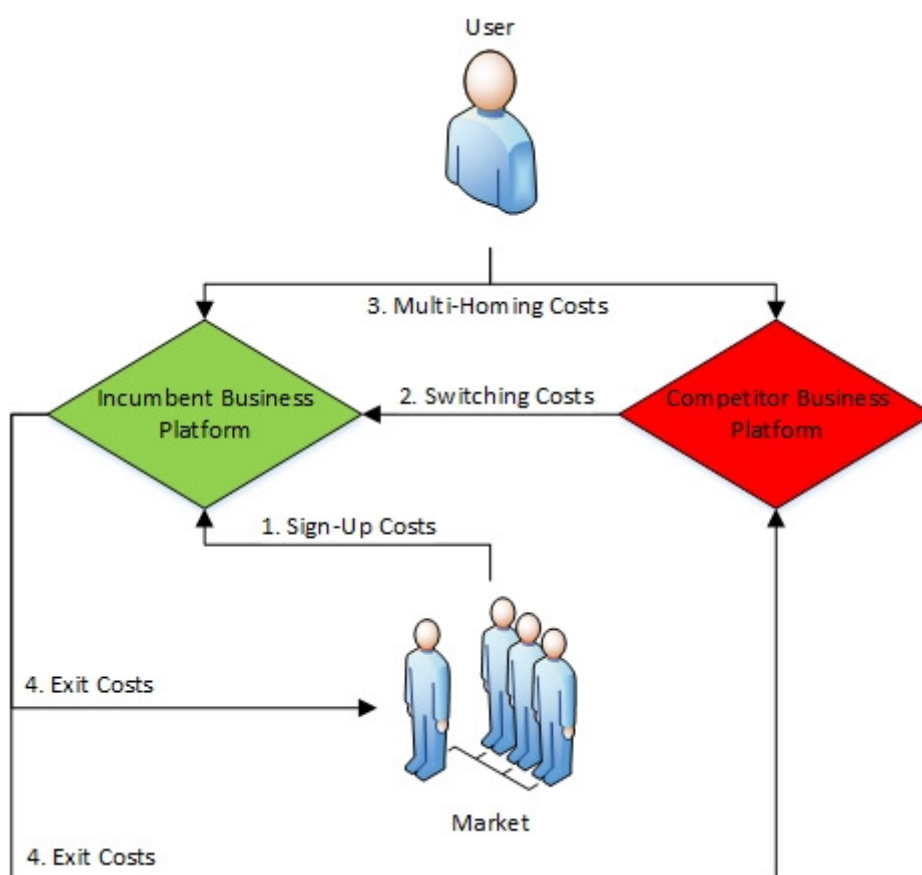


Figure 25 - Sign-Up, Switching, Multi-Homing and Exit Costs

The four different costs follow and are explained (note that the costs are numbered on Figure 25 and below):

- 1) Sign-up costs are the costs that a user should overcome in order to join a Platform. A user comes from the market consisting of users that are not affiliated with any other Platforms and joins the Intermediary's Platform.
- 2) Switching costs are the costs that a user should overcome in order to switch from another Platform, typically a competitor's Platform to the Intermediary's Platform.
- 3) Multi-homing costs are the costs that a user should undergo if he wants to be affiliated with two or more Platforms, typically the Intermediary's Platform as well as the Intermediary's competitor's Platform.
- 4) Exit costs are the costs that a user need to incur if he wants to exit the Intermediary's Platform and end his affiliation with the Platform. The user either ends his affiliation and joins a competitor or he just ends his affiliation and does not affiliate with any other Platform.

The different forms of cost that users need to incur can take different forms, they are:

- Time,
- Money,
- Learning, and
- Effort.

Intermediaries want to keep these costs as low as possible for sign-up, switching and multi-homing costs so that users will join the Platform, and as high as possible for exit costs so that users will not leave the installed base. Users should be incentivized to stay on board the Platform once they have joined. Once an Intermediary loses a user it can be hard getting that user back on board.

## 5.5 Bundling

*Bundling*, as referred to by Parker & Van Alstyne (2008), Cusumano (2010) and Rochet & Tirole (2008) amongst many other authors is also known as *envelopment* (as referred to by Eisenmann *et al.* (2006) and Evans & Schmalensee (2011) amongst others).

Bundling, or envelopment, will only be referred to as *bundling* from here on further. Bundling is whenever an Intermediary offers a set of products or services in addition to their primary value offering to maintain or win over market share. These additional value offerings are often the same

as what other competitors offer – both competitors serving One-Sided Markets and Two-Sided Markets.

Bundling is exactly what Google does. Google offers a value proposition that coincides and overlaps with other businesses' value offerings.

Google does exactly this, they offer, what Eisenmann *et al.* (2006) refer to as a “*multiplatform bundle*”. Google ring-fences their installed base by offering (many times for free) what other competitors offer solely as their primary value propositions. Table 15 shows Google's bundling strategy. Google offers multiple value offerings, a multiproduct bundle, from one single Platform – the Internet.

Table 15 - Google's Bundling Strategy

Value offering	Competitors	Google	Free	Revenue stream
Search engine	Yahoo	Google Search	X	
Email	Multiple other value offerings	Gmail	X	
Cloud storage	Dropbox	Google Drive	X	
Web browser	Firefox, Internet Explorer	Google Chrome	X	
GPS	Garmin, TomTom	Google Maps, Google Earth	X	X
AdWords	Advertising-Supported Media	Google AdWords		X
Social media	Facebook	Google+	X	

Google takes on massive multinational companies from all over the world, both One-Sided and Two-Sided businesses with their bundling strategy to ultimately win over and maintain market share.

In closing, Cusumano (2010) explains the importance of bundling in an excellent way:

*Switching costs and bundling have become strategically important because companies often can attract users to their platforms by offering many different features for one low price, and can retain users by making it technically difficult to move to another platform. This is why, for example, cable and telephone companies now compete to offer bundled voice, data, and video services to the home.*

Multi-homing should be avoided at all costs and can be confronted with bundling strategies.

## 5.6 Multi-Homing vs. Single-Homing

Rysman (2009) reckons that it is prevalent amongst Two-Sided Markets that at least one side of the Two-Sided Market affiliates with more than one Platform – *i.e.* multi-homing. The other side tends to affiliate with only one Platform – *i.e.* single-homing.

It can be observed in the advertising-supported media, payment card and gaming console industry. Table 16 shows the single-homing and multi-homing sides, of the respective industries mentioned above.

*Table 16 - Multi-Homing vs. Single-Homing in Different Industries*

Industry	Single-homing side	Multi-homing side
<b>Advertising-Supported Media</b>	Magazine readers	Advertisers
<b>Payment card</b>	Merchants	Cardholders
<b>Gaming consoles</b>	Gaming console owners	Game developers

In the advertising-supported media industry of magazines and newspapers readers (the single-homing side) typically buy only one magazine or newspaper but advertisers advertise in multiple magazines and newspapers – the multi-homing side.

In the payment card industry merchants readers (the single-homing side) work with one payment card facility provider but cardholders own multiple cards from various payment card facility providers – the multi-homing side.

In the gaming console industry gamers (gaming console owners, the single-homing side) typically own one gaming console (Platform), and game developers develop games for multiple gaming console Intermediaries – the multi-homing side.

It cannot be said that this observation is absolute but Rysman (2009) states that it is observed more often than not.

The single-homing side should be looked after well because as soon as that side exits it can take incredible hard work to get them back on board.

## 5.7 Transition from One-Sided Market to Two-Sided Market

Rysman (2009) points out that many businesses have gone from serving One-Sided Markets to eventually serving Two-Sided Markets. They applied innovated their business model focusing on the market segment element specifically. The obvious benefit of this is that these businesses could first focus on growing one side of the Two-Sided Market and get them on board before focusing on growing the other side of the market to successfully execute Network Effects to their benefit.

Businesses that have gone on to do that are the likes of Facebook, Amazon<sup>34</sup> and Apple with the iTunes Store.

Facebook started out as a social network that later realized that they can sell advertising slots to advertisers (Filistrucchi, *et al.*, 2012). They went on to do that successfully. Facebook was able to first build an installed base of users. The readership could later on be sold to advertisers.

Amazon started out as a plain online book trader. They later on decided to innovate their business model and transition to a Multi-Sided Platform Business. They became an online trading Platform. Amazon connects buyers with sellers and take monetary royalties for each sale made (Amazon, 2015). Today they are one of the fastest growing retailers in the world.

Apple innovated their business model as well. Although Apple started out selling iPods and they were extremely successful with this business unit they eventually went on to incorporate the iTunes Store business unit as well that led to exponential growth that was off the charts.

What Apple did revolutionized the music industry forever. Their iPod owner market used to be a One-Sided Market buying MP3-players before becoming the one side of their ever so successful Platform. iPod owners is the one side of the market and music publishers the other side. Apple connects these two markets with one another via the iTunes Store (the Platform) and takes monetary royalties from music publishers for every song or album sold via the iTunes Store. Apple went from serving a single-sided market to drawing two distinct user groups to the same Platform and establishing Network Effects and utilizing it in order to generate an irreplaceable revenue stream.

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<sup>34</sup> <http://www.amazon.com>

Johnson *et al.* (2008) suggests that significant innovations happen at business model level such as the ones mentioned above. Design differentiation and dominance helps to some extent but it is less often that superb technology innovation has a greater effect than business model innovation (Johnson, *et al.*, 2008). It goes without saying that business model innovation is more risky than value proposition innovation, hence it is high-risk-high-reward projects that businesses can undertake.

## 5.8 Platform Limitations

Platforms are often tangible infrastructure that has various design aspects which can be limited in some ways.

### 5.8.1 Platform Size Limitations

Evans & Schmalensee (2005) writes that Platform design issues tend to limit the size of Platforms and subsequently market growth of Two-Sided Markets. They (Evans & Schmalensee, 2005) give examples:

- Trading floors,
- Singles clubs,
- Auction houses, and
- Shopping malls.

Platforms such as these can be limiting and keep one or both sides from joining the installed base. These design aspects ultimately limits scalability. Businesses should bear scalability in mind when designing Platforms.

### 5.8.2 Congestion

Evans & Schmalensee (2005) also points out that the installed base of one or both sides of the market that becomes too big can lead to:

- Congestion,
- Increased transaction costs, or
- Other unexpected costs.

Congestion can typically occur in a shopping mall. If too many shoppers come the parking might become a problem. Also, shops might be full and lead to congested checkout till-lines.

Another good example of congestion that can occur is when too many ads are published in a magazine. Readers will experience this as overwhelming and might not buy the magazine again. Also, too many advertisements might lead to readers not connecting with the marketing campaigns because there are just too many ads.

There is a fine line where Intermediaries should ensure that they get as many users on both sides of the market but that it does not lead to congestion.

Increased transaction costs can occur with transaction system Platforms like payment card Intermediaries such as Visa<sup>35</sup> or MasterCard<sup>36</sup>. Businesses such as these, or any other business that allow transactions should be prepared for increased transaction costs and traffic that needs to be processed, especially if the installed base grows at an unexpected rate. Scalability is once again the determining factor that will determine the outcome.

### 5.8.3 Scalability

Scalability is what it ultimately comes down to. Businesses should be ready to scale at some or other stage. The most important business model element that needs to be scalable is the Platform. The two sides of the market will grow at their own rate, and cannot be controlled to such a big extent as the Platform. The Platform should be scalable to allow growth and not limit it in any way.

## 5.9 Conclusion: Identifying Business Model Framework Design Requirements

Market growth is a challenging task that Multi-Sided Platform Businesses should undertake if they wish to be successful. The design requirements that were identified will be listed below.

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<sup>35</sup> <http://visa.com>

<sup>36</sup> <https://www.mastercard.com>

Table 17 - Design Requirements Identified in Chapter 5

<b>1. Customer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
1.7	5.3	114	Marquee users	Marquee users should be targeted because they can contribute to market growth	<input type="checkbox"/>
1.8	5.6	118	Multi-homing vs. single-homing	Each one of the markets that make up the Two-Sided Market can either be a Multi-Homing or Single-Homing side	<input type="checkbox"/>
1.9	5.4	115	Sign-up, switching, multi-homing and exit costs	<p>Users have various costs that they need to overcome to affiliate with the Platform, they can take many forms:</p> <ul style="list-style-type: none"> <li>• Time</li> <li>• Money</li> <li>• Learning</li> <li>• Effort</li> </ul>	<input type="checkbox"/>

<b>2. Offer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
2.5	5.5	116	Bundling	Bundling opportunities that exist should be pursued by the Intermediary to promote market growth and an improved value offering	<input type="checkbox"/>



<b>3. Infrastructure</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
3.4	5.8	120	Platform limitations	<ul style="list-style-type: none"> <li>• Platform limitations               <ul style="list-style-type: none"> <li>○ Size</li> <li>○ Maintenance</li> <li>○ Congestion</li> <li>○ Scalability</li> </ul> </li> </ul>	<input type="checkbox"/>

<b>4. Financial Viability</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Financial Viability design requirements were identified in this chapter.

<b>5. Other</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No *Other* design requirements were identified in this chapter.

Market growth in the light of Two-Sided Markets have been explored, the next chapter will go on to look at the value proposition element of business models. Both pricing, the previous chapter, and market growth focused on the customer aspect of Multi-Sided Platform Businesses. The next chapter will go on to look at value propositions offered by Multi-Sided Platform Businesses to Two-Sided Markets.

# Chapter 6

## The Value Proposition

*The fact that buyers do not take into account the indirect network effect when deciding to join or use the platform distinguishes a two-sided platform from a firm selling complementary goods. Indeed, a firm selling two complementary goods faces two demands but from only one group of potential customers. However, as these customers need to buy both goods, they internalize the link between the two demands and base their buying decision on the prices of both goods.*

– Lapo Filistrucchi, Damien Geradin & Eric van Damme,

**Identifying Two-Sided Markets, 2012**

### 6. The Value Propositions

Intermediaries serve two distinct user groups from the same Platform. The value propositions offered to Two-Sided Markets are more than often quite unconventional and many a time unheard of. Not only do value offerings rely on Network Effects but also on complementary goods. Another question that needs asking is how big of a roll does design superiority play seeing that Intermediaries not only offer a single product or service.

Design superiority is whenever a business is superior to another because of its value proposition design that it offers (Schilling, 2013).

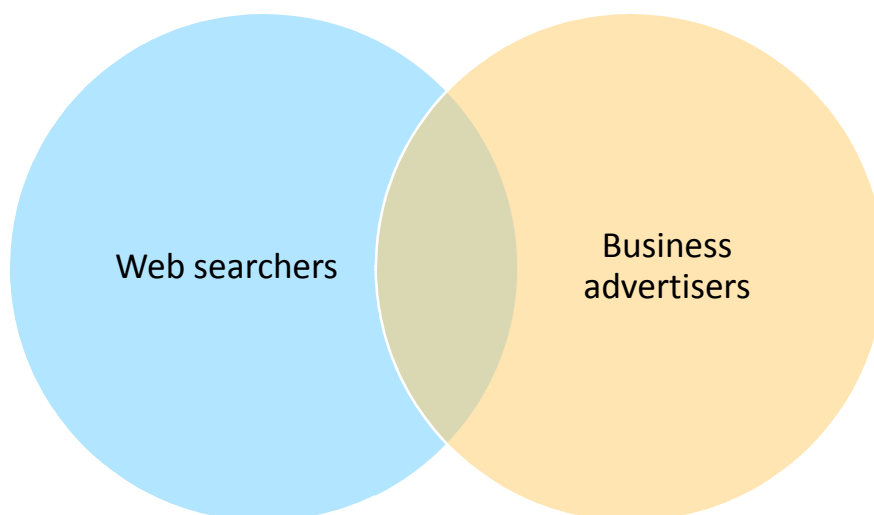
The **research objective** of this chapter is to look at value propositions offered to Two-Sided Markets. Design requirements will be identified throughout the value proposition literature study that will be done.

The **research outcome** of the chapter is to identify design requirements in this chapter. The design requirements will be used to develop the Two-Sided Market Business Model Framework – the ultimate outcome that will be delivered in this thesis.

The **research methodology** that was utilised was a combination of literature research and deductive reasoning. The literature study relied on journal articles, theses and textbooks available in the academic domain.

## 6.1 Introduction

Consider Google's unique AdWords (and web search engine) value offering. Google helps one group to search for websites and another group to advertise. These two needs that Google satisfy are so far removed and have very little in common with one another, yet Google found a way to generate a superb revenue stream.



*Figure 26 - The Two Needs that Google Satisfies and the Demand Overlap*

It can be reasoned that the overlapping demand (see Figure 26) that web searchers and advertisers have in common is very small – yet Google found a way to utilize Network Effects to create a phenomenal value offering.

This chapter will not look at Network Effects, the single greatest defining aspect of Two-Sided Markets, but will only highlight the fact that designing and developing a value proposition for Two-Sided Markets that is accessible via the Platform is not nearly as simple as it looks and that it is a challenging task. Note that the possibilities of innovations await to be discovered.

Many other complex value propositions that are offered by other Multi-Sided Platform Businesses are present that can be investigated and learned from. They are the likes of:

- Payment card Intermediaries

Payment card Intermediaries incorporate more than six parties in their complex business model. An example follows.

McDonalds (the merchant) might be banking with Absa (the merchant's bank) and they have a point-of-sale merchant card machine from MasterCard (the merchant's payment card facilities provider). A buyer (referred to as the buyer) might be banking with Standard Bank (the buyer's bank) and have a payment card from Visa (the buyer's payment card facilities provider).

There are thus six parties that will participate in a transaction whenever the buyer chooses to purchase something at McDonalds with his payment card. See Table 18 below for the list of participating parties and their roles.

*Table 18 - The Six Parties Present in a Payment Card Transaction*

<b>Element</b>	<b>Buyer</b>	<b>Merchant</b>
Entity	Buyer	McDonalds
Bank	Standard Bank	Absa
Payment card facilities provider	Visa	MasterCard

Note that the complete transaction process will not be explained at this stage of the thesis, only at a later point.

- Apple iTunes Store

Apple develops devices, iPods, which are necessary to fully utilize the iTunes Store value offering. They also have different contracts with all of their separate content providers: app developers,

music publishers, film publishers, music publishers, book publishers, podcast developers, *etc.* They have different pricing models for each of these markets as well.

It can be agreed that their business model is complex and well executed, hence the reason for their immense success. Only at a later stage will a full case study investigation be done that will focus on Apple's business model.

Multi-Sided Platform Businesses that are successful offer more than just cutting-edge technology. When learning from these hyper-successful Multi-Sided Platform Businesses it is important to realize that it is more than just their innovative value offering that contributes to their immeasurable success and that their business model innovation and execution is fundamentally what it all comes down to (Johnson, *et al.*, 2008).

The value offering is the sum of the stand-alone value, the Network Effects that are incorporated and the complementary goods. Figure 27 shows the three elements that make up the complete value of the value offering.

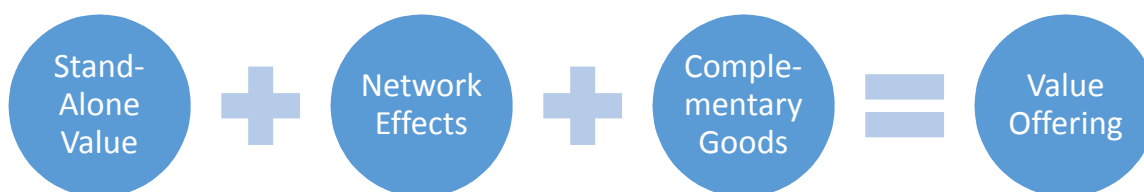


Figure 27 - Stand-Alone Value vs. Value Offering Value

This chapter aims to discover the stand-alone value and complementary goods. Note that Network Effects will not be investigated again because it has been fully explained in a preceding chapter.

## 6.2 Stand-Alone Value

One of the major advantages that Intermediaries have is that they do not merely offer a product or service alone but Network Effects accompany the stand-alone value of the value proposition.

Schilling (2013) and Johnson *et al.* (2008) write that it is not necessarily the dominant design solely that leads to market leadership.

Schilling (2013) goes on to say that some markets coalesce around a dominant design while others support a variety of value offering options. The reason for this is multi-fold and will not be fully investigated. Businesses should however realize that just because there are Intermediaries that have gone on to be market leaders, monopolists in many ways, it does not necessarily mean that it is the standard. Because of Network Effects businesses can go on to own significant market shares but that it is a bet-the-company decision if they do decide to pursue that avenue.

### 6.2.1 Product Research & Development

Intermediaries offer value propositions that are more than often very complex because of Network Effects and the fact that it is not merely one market that requests attention. Intermediaries do not only rely on the stand-alone value of the value offering but they need to develop the stand-alone value of the product continuously – the technology needs to be cutting-edge and state-of-the-art if it wants to continue to be competitive.

Intermediaries can further research & develop new products and services by analysing knowledge gained from users' experience of using the value offering (Schilling, 2013).

Also, when value offerings are successful the greater the returns of the value proposition the more money can be invested into further developing new possibilities (Schilling, 2013). The more a value offering is adopted; not only does the Network Effects grow, but also greater knowledge and understanding accrue about the value offering and can eventually be used to improve the offering.

Whenever value offerings are utilized it creates a market and demand complementary goods.

### 6.3 Complementary Goods

Complementary goods are tangible objects and infrastructure that allow access to the Platform and utilization of the value offering. A simple example is that of web searchers. If web searchers do not have computers and Internet they will not be able to access Google's search engine. Google's potential market is thus the whole world that has access to a computer and Internet (assuming

Google offer their value proposition in all languages globally). Computers and the Internet are thus complementary goods to Google's AdWords business model.

Fundamentally complementary goods are infrastructure and technology that allow Platform access and value offering utilization.

### 6.3.1 Value-Enabling vs. Value-Exceeding Complementary Goods

Complementary goods can either be value-enabling or value-exceeding (Cusumano, 2010; Filistrucchi, *et al.*, 2012).

Complementary goods need to be, at a minimum, value-enabling. Value-enabling complementary goods give users minimum (basic) access to utilize a value offering while value-exceeding complementary goods allow users to utilize above and beyond the minimum (basic) value that is offered.

A basic example of a value-enabling complementary good is a television in the gaming console industry. Gaming console owners (gamers) need a television (that is not necessarily supplied by the developer of the gaming console) to be able to play games on their gaming consoles. A television is therefore one of the minimum requirements to be able to access and utilize the minimum value of the gaming console.

A value-exceeding complementary good is the Internet in the case of gaming consoles. Internet is not one of the minimum requirements to be able to access the basic fundamental value that is offered by the gaming console – to play games. If gaming console owners have Internet they can play games online and access other value offerings that can be accessed from the gaming console (the Platform). Playing games online and accessing other value offerings than playing games does not typically form part of the minimum value offering – to play games offline. Internet is thus a value-exceeding complementary good in the gaming console industry because it allows gamers to access above and beyond the basic value offering of gaming consoles – to play games offline. With Internet they can play games online against friends, buy from the online store and even watch movies online from their gaming console – they can exceed the minimum value offering of playing games offline.

### 6.3.2 Self-Providing vs. Strategic Partners vs. Basic Providers

Complementary goods can be developed either by the incumbent business (*i.e.* self-providing) or by external businesses. The external businesses that can supply the complementary goods can either be strategic partners or basic providers (Cusumano, 2010; Filistrucchi, *et al.*, 2012).

#### **Self-Providing: Providing Complementary Goods Self**

Apple is an example of a business providing their own complementary goods – self-providing. Apple develops iPods, iPhones and iPads (complementary goods) that allow access to Apple’s iTunes Store (the Platform).

#### **Strategic Partners Providing Complementary Goods**

Microsoft<sup>37</sup> and Dell<sup>38</sup> can be considered strategic complementary goods partners. Microsoft is the leading Intermediary in the computer operating system industry. Computers are one of the value-enabling complementary goods to access Microsoft’s Windows computer operating system. Microsoft and Dell have agreements that Dell sells their computers with Microsoft’s operating system installed on it. Both these businesses, whether Two-Sided or not, strategically enforces and helps one another, hence they are strategic partners to one another.

#### **Basic Providers of Complementary Goods**

Basic providers of complementary goods, whether value-enabling or value-exceeding, are typically television suppliers in the gaming console industry. They allow gaming console owners to buy televisions and ultimately access the value offered by their gaming console.

Providers of complementary goods can therefore be:

- Intermediaries themselves (self-providing),
- Strategic partners of Intermediaries themselves (strategic partners), or

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<sup>37</sup> <http://www.microsoft.com>

<sup>38</sup> <http://www.dell.com>



- Basic providers of complementary goods (basic providers).

Complementary goods play a significant role when offering a value proposition to a Two-Sided Market. Multi-Sided Platform businesses should realise that their target market is only as big as the group that has access to the necessary complementary goods. The complementary goods need to be:

- Available,
- Accessible, and
- Affordable.

Schilling (2013) writes that:

*Products with a large installed base are likely to attract more developers of complementary goods.*

This fundamentally means that the bigger the installed base the greater the demand for complementary goods, ultimately resulting in more complementary goods developers also getting on board and supporting the industry.

Schilling (2013) writes that the availability of complementary goods not only enables access to Platforms but also influences users' choice among competing Platforms. Multi-Sided Platform Businesses should thus be vigilant and aware of the current state of complementary goods in their industry as well as the willingness of strategic partners and basic providers as well as suppliers of complementary goods to develop and supply complementary goods. This will enable access for the targeted Two-Sided Market to the Incumbent's Platform and encourage markets to choose the incumbent's Platform above that of competitors' Platforms.

#### 6.4 Conclusion: Identifying Business Model Framework Design Requirements

Value propositions of Two-Sided Markets are often unconventional and many times incomparable. Other challenges also arise when establishing the value proposition element in Multi-Sided Platform Business Models. The design requirements that were identified in this chapter are listed below.

Table 19 - Design Requirements Identified in Chapter 6

<b>1.</b>	<b>Customer</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Customer design requirements were identified in this chapter.

<b>2.</b>	<b>Offer</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
2.6	6.1	125	Two distinct value propositions	Two distinct value propositions are offered to the two respective sides of the Two-Sided Market	<input type="checkbox"/>

<b>3. Infrastructure</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
3.5	6.3	128	Complementary goods	Complementary goods are necessary to access the Platform and ultimately the value propositions	<input type="checkbox"/>
3.6	6.3	128	Complementary goods: Availability, accessibility, affordability	How available, accessible and affordable is a complementary good?	<input type="checkbox"/>
3.7	6.3.1	129	Value-enabling vs. value-exceeding complementary goods	Complementary goods can either be value-enabling or value-exceeding	<input type="checkbox"/>
3.8	6.3.2	130	Self-providing vs. strategic partners vs. basic providers	Complementary goods can be provided by: <ul style="list-style-type: none"> <li>• The Intermediary (self-providing), or</li> <li>• Strategic partners, or</li> <li>• Basic providers</li> </ul>	<input type="checkbox"/>
3.9	6.3.2	130	Strategic partners providing complementary goods	Strategic partners that provide complementary goods are considered business partners	<input type="checkbox"/>

<b>4. Financial Viability</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Financial Viability design requirements were identified in this chapter.

<b>5.</b>	<b>Other</b>				
<b>No.</b>	<b>Sect.</b>	<b>Pg.</b>	<b>Design Requirement</b>	<b>Notes</b>	<input checked="" type="checkbox"/>

No *Other* design requirements were identified in this chapter.

Value propositions that are successfully offered to Two-Sided Markets draws attention from competitors. The next chapter will look at competition in amongst Intermediaries that target Two-Sided Markets.

# Chapter 7

## Competition

*Fuelled by the promise of increasing returns, competition in two-sided network industries can be fierce. As a result, mature two-sided network industries are usually dominated by a handful of large platforms, as is the case in the credit card industry.*

*Many two-sided network industries are served almost entirely by a single platform. In some cases, just one company controls that platform. In other cases, multiple companies share the dominant platform. When a network industry is likely to be served by a single platform, aspiring providers must make a “bet the company” decision. Should they fight to gain proprietary control over the platform or share the spoils with rivals?*

*In this environment, if you draw attention to a platform opportunity and don't get it right the first time, someone else will.*

**– Eisenmann, Parker & Van Alstyne, Strategies for Two-Sided Markets,**

**Harvard Business Review, October 2006**

## 7. Competition

Competition amongst Intermediaries and in Two-Sided Market industries are dominated by completely different dynamics and principles compared to competition in One-Sided Market industries. This chapter will investigate competition in view of Two-Sided Markets.

Note that chapter 7 will conclude the literature study.

The **research objective** of this chapter is to look at competition amongst Intermediaries and in Two-Sided Market industries. Design requirements will also be identified in this chapter.

The **research outcome** of this chapter is to identify design requirements. The design requirements that will be identified in this chapter will assist the Two-Sided Market Business Model Framework development process.

The **research methodology** that this chapter relied on was one of literature research and deductive reasoning. The literature study that was done relied on journal articles, theses and textbooks that are available in the academic domain.

### 7.1 Winner-Takes-All Dynamics and Monopolies

*Winner-takes-all dynamics* means that there is one or only a handful of businesses that dominate an industry or owns a significant majority of the market share. It is typically a case of monopoly.

Although not all markets that rely on Network Effects result in winner-takes-all scenarios it is often the case (Eisenmann, *et al.*, 2006; Filistrucchi, *et al.*, 2012).

There are thus, in decreasing levels of significance, three degrees of winner-takes-all (or monopoly scenario) dynamics:

- 1) Only one business steps out as the victor in the market
  - Extreme winner-takes-all scenario
- 2) Only a handful of businesses are able to co-exist in the respective market
  - Moderate winner-takes-all scenario

- 3) Many businesses are able to co-exist and share the market relatively evenly amongst the few of them
  - No winner-takes-all dynamics present

An excellent example of a winner-takes-all scenario is that of Facebook. Many other companies amongst who the likes of Friendster<sup>39</sup>, MySpace<sup>40</sup> and Google+<sup>41</sup> are found attempted offering a social network Platform but did not step out as the victor of the industry to be nearly as successful as Facebook.

Other social networks such as Twitter<sup>42</sup> and Instagram<sup>43</sup> have stepped out to be successful as well but it can be reasoned that they are differentiated in various ways compared to Facebook; they are social *media* Platforms rather than social *network* Platforms.

Social media platforms publish media to create value while social networks also publishes media but they serve as a networking Platform where users can connect with one another. This aspect refers to differentiation and will be looked at later on in this chapter.

Eisenmann *et al.* (2006) suggests that Intermediaries have two options:

- 1) Share the market with competitors, or
- 2) Fight to death to obtain winner-takes-all benefits.

Eisenmann *et al.* (2006) goes on and writes:

*Coping with platform competition is a two-step process.*

*First, executives must determine whether their networked market is destined to be served by a single platform.*

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<sup>39</sup> <http://www.friendster.com>

<sup>40</sup> <https://myspace.com>

<sup>41</sup> <https://plus.google.com>

<sup>42</sup> <https://twitter.com>

<sup>43</sup> <https://instagram.com>

*When this is the case, the second step – deciding whether to fight or share the platform – is a bet-the-company decision. The stakes are much higher when a networked market has room for fewer rival platforms.*

*The next step is to figure out how to manage winner-takes-all dynamics. Many two-sided network industries are served almost entirely by a single platform. In some cases, just one company controls that platform, as with eBay’s auctions or Microsoft’s windows. In other cases, multiple companies share the dominant platform, as with DVD and fax standards or, in real estate, a regional multiple listing service. When a network industry is likely to be served by a single platform, aspiring providers must make a “bet-the-company” decision. Should they fight to gain proprietary control over the platform or share the spoils with rivals?*

Competition in networked markets can be considered to be fiercer than One-Sided Markets in many ways. Executive managers are often faced with bet-the-company decisions – it is a typical high-risk-high-reward scenario that they are faced with. Network Effects is the reason why this is the case. It will be discussed shortly.

#### 7.1.1 Winner-Takes-All Dynamics Requirements

Eisenmann *et al.* (2006) writes that there are three conditions that need to apply in order for winner-takes-all dynamics to exist. They are the following:

- Multi-homing costs and/or switching costs are high for at least one user side,
- Network Effects are positive and strong at least for the side with high multi-homing costs and
- Neither sides have a strong preference for special features.

##### *7.1.1.1 Multi-Homing Costs and/or Switching Costs Are High For At Least One User Side*

Eisenmann *et al.* (2006) writes that in order for a winner-takes-all market to exist multi-homing costs and/or switching costs for at least one user side needs to be high.

Multi-homing costs are the costs that a user should overcome and undergo if he wants to be affiliated with more than one Platform. Switching costs are the costs that a user should overcome in



order to switch from another Platform, typically a competitor's Platform to the incumbent's Platform.

A good example of this scenario is that of the gaming console industry. For a gaming console owner to purchase another gaming console would:

- 1) First of all be expensive (high multi-homing costs) and
- 2) Secondly, the gaming console owner would need to incur all the costs of time, money and effort of having to buy new games (high switching costs).

Because of the Network Effects that are present and utilized in the gaming console industry both the multi-homing costs and the switching costs are high. Because of this it is possible that the industry can be controlled by one monopolist that enjoys winner-takes-all benefits. The following two requirements also need to be in place.

*7.1.1.2 Network Effects Are Positive and Strong At Least for the Side with High Multi-Homing Costs*

This is the case for Microsoft – most people use the Microsoft Windows computer operating system. For Microsoft Windows computer operating system users it was worth staying with Microsoft because:

- 1) Firstly, the multi-homing costs for users are relatively high. For users to switch Platforms and learn another computer operating system language they need to learn another type of software (requiring time, energy and effort) and other operating systems were relatively expensive compared to the Microsoft Windows computer operating system (requiring costs). For users to switch to another operating system is relatively 'expensive' when considering the multi-homing and switching costs.
- 2) Secondly, computer operating system users enjoy strong Positive Network Effects. Probably one of the greatest reasons for Microsoft's success is that users relying on the Microsoft Windows computer operating system have a specific file format that was recognizable across all computers that uses Microsoft. This standardised file sharing across a vast network of computer users. For instance, if someone wrote a document in Microsoft Word and a

friend also had Microsoft Word the friend could also access and edit the same document. Had the friend been a user of another operating system it would have been another story.

This means that a winner-takes-all scenario can potentially exist if Network Effects are positive and strong for at least the side of the market with high multi-homing costs (Eisenmann, *et al.*, 2006).

#### *7.1.1.3 Neither Sides Have a Strong Preference for Special Features*

One side of the market can sometimes request very specific and special features that makes place for other contenders in the market that satisfies these specialized needs. If this is not the case users will flood to where the strongest Network Effects exist (see prerequisite number 2 above) and also where users signed up first to prevent high switching costs (see prerequisite number 1 above).

This is the case for web searchers using Google's search engine. These users do not have a very specific demand for a special feature other than that of having adequate search results for their search query. This is the reason why Google enjoys winner-takes-all benefits – they own more than half of the global web search market.

A demand for special features creates space in the market as well as smaller niches amongst the greater market (Eisenmann, *et al.*, 2006).

Eisenmann *et al.* (2006) writes that the DVD industry is an example of where all three conditions are met:

*The DVD industry meets these three conditions. First, multi-homing costs are high for consumers because it would be expensive to buy multiple players. Likewise, multi-homing costs are high for studios: having to provide the same content in multiple incompatible formats would increase inventories and distribution costs.*

*Second, cross-side network effects are strong for both sides of the network. Most consumers value access to a wide variety of titles, and studios realize scale economies when they can sell to more consumers.*

*Third, opportunities for technical differentiation are modest, because DVD players connect to TV sets, which are standardized in ways that intrinsically limit DVD picture and sound quality. For these reasons, the DVD market was bound to be served by a single platform. Potential platform providers anticipated this outcome and faced a choice: they could fight for proprietary control of the platform or pool their technologies. Industry participants chose the latter approach, jointly creating the DVD format in 1995 and avoiding a replay of the VHS-Betamax standards battle.*

Winner-takes-all scenarios exist and will be investigated at a later stage in this thesis when doing case studies.

## 7.2 Timing of Entry

Schilling (2013) suggests that there are three groups of market entrants:

- 1) First entrants,
- 2) Early followers, and
- 3) Late followers.

It is not always the first entrant that necessarily dominates a market and enjoys winner-takes-all benefits. Intermediaries can benefit from early market entry when approached correctly (Schilling, 2013).

The following sub-sections will look at the advantages and disadvantages of the different market entry groups that enter a market.

### 7.2.1 First Entrant Advantages and Disadvantages

First entrants are usually consist of one or a handful of Intermediaries that enter a market.

#### 7.2.1.1 Advantage: Capture Early Market Share

Early entrants can capture early market share and utilize sign-up, switching, multi-homing and exit costs to capture and maintain market share.

### 7.2.1.2 Advantage: Set Industry Standards and Define Customer Expectation

Intermediaries entering the market first have the opportunity to set market standards. Like a credit card Intermediary that develops and standardizes the margins for the industry. Before that was done there was no frame of reference of what the margins were, Diner's Club<sup>44</sup> that launched the first format of a credit card did so in 1950 and cardholders were only allowed to use it at restaurants. Diner's Club set the industry standards and defined customer expectation because before they launched the first credit card there were no frame of reference for credit cards.

### 7.2.1.3 Disadvantage: Get It Right the First Time

Eisenmann *et al.* (2006) writes:

*In this environment, if you draw attention to a platform opportunity and do not get it right the first time, someone else will.*

This has been the case many times as will be seen in the next section that speaks about early followers and all the advantages that they can utilize and the disadvantages that they face. If an Intermediary does not get it right the first time they will give their idea away and allow other Intermediaries to have a go at serving the Two-Sided Market that they hoped to serve.

## 7.2.2 Early Follower Advantages and Disadvantages

Early followers face different advantages and disadvantages when not entering the market first, but soon after the first entrant. Many might think that early followers do not stand a chance against first entrants – this is not necessarily the case and has been showed that it is never too late to enter Two-Sided Markets (Schilling, 2013). Multiple advantages and disadvantages await these Intermediaries.

### 7.2.2.1 Advantage: Learn From Preceding Entrants

Early followers can better position themselves after learning from preceding entrants' successes and failures. They have the opportunity to learn from preceding entrants and because they are usually

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<sup>44</sup> <http://www.dinersclub.com>

smaller they are more flexible and can position themselves correctly. Early followers may avoid the market pioneer's positioning errors.

#### *7.2.2.2 Advantage: Cost Advantage*

Intermediaries that are early followers have the opportunity to beat competitors on prices by reverse engineering it correctly. They can then position themselves wherever they desire and attain a part of the preceding entrants' market as well as a part of another uncontested market space.

#### *7.2.2.3 Advantage: Improved Value Proposition*

As mentioned above, Intermediaries can learn from the successes and failures of competitors. The biggest advantage that they probably have is the opportunity of designing and developing an improved value offering.

This is exactly what Google did. They were not amongst the first entrants into the search engine market. This gave them the opportunity to design and develop a superior value offering that owns the majority of the market.

### 7.2.3 Late Follower Advantages and Disadvantages

Late followers that want to enter the market face a daunting task. At this point many competitors have established themselves, they have found their place in the market and the contention has settled. It is hard entering the market at this stage.

#### *7.2.3.1 Beware of Being Overambitious*

New Platform providers that enter the market late thinking that they are going to conquer existing market leaders by taking them head on should be very careful to not be over-ambitious. Unless they have history-defining technology and a world-class value offering they should be careful to do so.

#### *7.2.3.2 Target Niche Markets and Differentiate*

All hope is not lost for late followers. They have the opportunity to target smaller niche markets that demand special features. If they can position themselves correctly with a suitable strategy they

should go for it. They should however notice that taking on the big competitors (*i.e.* market leaders) head on could be risky.

Twitter launched in 2006 and gained market leadership in the social media industry. Many would argue that they compete with Facebook but users tend to have Facebook and Twitter profiles – hence some users find that multi-homing costs and switching costs are not too high for them. Four years later, in 2010, Instagram was launched. In December 2014 the number of active Instagram users surpassed the number of active Twitter users. Many would have said that this would have been impossible yet Instagram proved otherwise. Instagram differentiated their value offering and positioned themselves correctly not taking Twitter completely head on (Tweedie, 2014).

### 7.3 Honour-All-Cards Rule

The honour-all-cards rule comes from the payment card industry and states that merchants, banks, cardholders and payment card companies should accommodate and honour one another by accepting all entities that participate in the greater industry ecosystem even though they might be considered competitors.

McDonalds (the merchant) might be banking with Absa (the merchant’s bank) and they have a point-of-sale merchant card machine from MasterCard (the merchant’s payment card facilities provider). A buyer (referred to as the buyer) might be banking with Standard Bank (the buyer’s bank) and have a payment card from Visa (the buyer’s payment card facilities provider).

There are thus six parties that will participate in a transaction whenever the buyer chooses to purchase something at McDonalds with his payment card. See Table 20 below for the list of participating parties and their roles.

*Table 20 - The Six Parties Present in a Payment Card Transaction*

<b>Element</b>	<b>Buyer</b>	<b>Merchant</b>
Entity	Buyer	McDonalds
Bank	Standard Bank	Absa
Payment card facilities provider	Visa	MasterCard

Note that the complete transaction process will not be explained at this stage of the thesis, only at a later point.

The honour-all-cards rule implies that if the buyer makes a purchase with his Visa payment card from McDonalds and McDonalds uses a point-of-sale merchant payment card processing machine from MasterCard McDonalds are not allowed to show the buyer away even though he is purchasing with a card from MasterCard's competitor – Visa. The buyer's bank, Standard Bank, needs to pay the according amount to McDonalds' bank, Absa. The way that commission and transaction fees in the payment card industry works will not be discussed now. The point of this section is to explain the honour-all-cards rule, not the payment card industry.

The honour-all-cards rule implies that even though competition exists amongst participating entities in the transaction process they need to honour one another and play according to the governing rules. These rules are set in such a way so that the buyer can be protected first and foremost.

Although it is not explicitly said the honour-all-cards rule does not only exist in the payment card industry. All operating systems accept and can read and edit many, if not most, file formats. This is another example of the honour-all-cards rule because different Intermediaries that contend over the same market segment develop different computer operating systems but yet they honour one another and their file formats which allows users from different computer operating systems to share with each other – this ultimately protects operating system users and ensures that monopolies are not abused.

#### 7.4 Conclusion: Identifying Business Model Framework Design Requirements

Competition amongst Intermediaries in Two-Sided Market industries are fierce but offers winner-takes-all opportunities. These competition dynamics should be approached correctly. The design requirements that were identified in this chapter are listed below.

Table 21 - Design Requirements Identified in Chapter 7

<b>1.</b>	<b>Customer</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Customer design requirements were identified in this chapter.

<b>2.</b>	<b>Offer</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Offer design requirements were identified in this chapter.

<b>3.</b>	<b>Infrastructure</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Infrastructure design requirements were identified in this chapter.

<b>4.</b>	<b>Financial Viability</b>				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Financial Viability design requirements were identified in this chapter.



5. Other					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
5.7	7.1.1	138	Winner-Takes-All Dynamics Requirements	<ul style="list-style-type: none"> <li>• Winner-Takes-All Dynamics Requirements               <ul style="list-style-type: none"> <li>○ Multi-homing costs and/or switching costs are high for at least one user side,</li> <li>○ Network Effects are positive and strong at least for the side with high multi-homing costs, and</li> <li>○ Neither sides have a strong preference for special features</li> </ul> </li> </ul>	<input type="checkbox"/>

# Chapter 8

## Learning from the Business Model Canvas

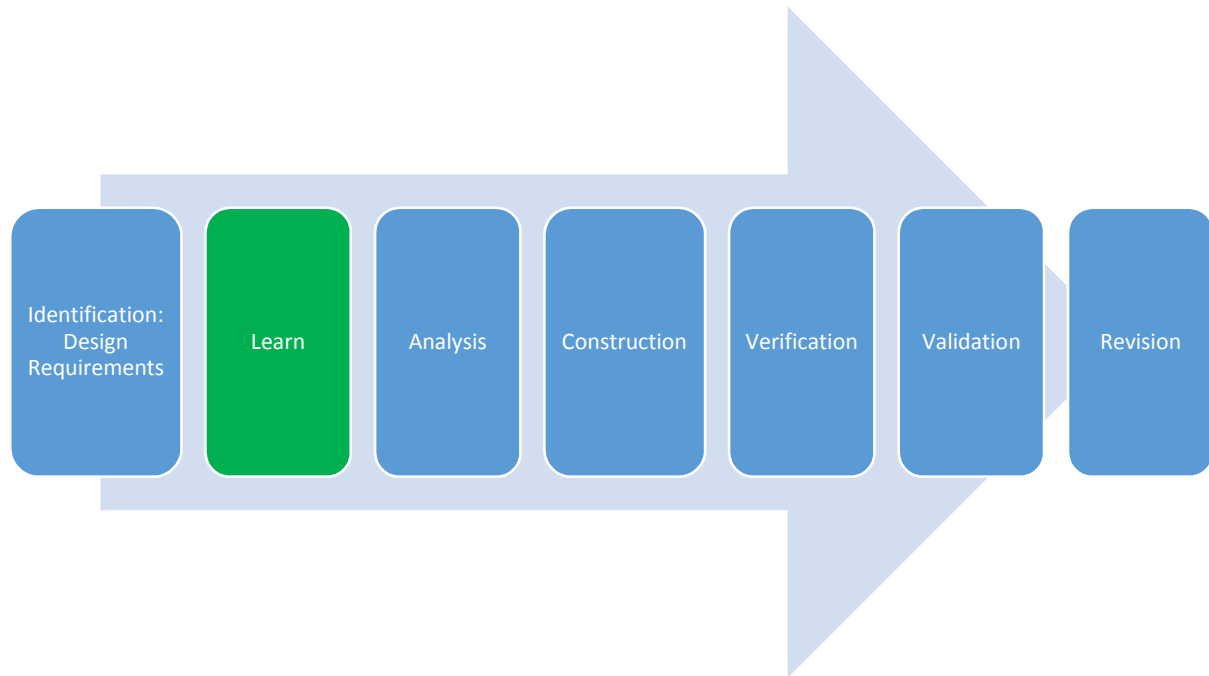
*This concept can become a shared language that allows you to easily describe and manipulate business models to create new strategic alternatives. Without such a shared language it is difficult to systematically challenge assumptions about one's business model and innovate successfully. We believe a business model can best be described through nine basic building blocks that show the logic of how a company intends to make money. The nine blocks cover the four main areas of a business: customers, offer, infrastructure, and financial viability. The business model is like a blueprint for a strategy to be implemented through organizational structures, processes, and systems.*

– Osterwalder & Pigneur, 2010, *The Business Model Generation*

### 8. Learning from the Business Model Canvas

The success of The Business Model Canvas developed by Osterwalder & Pigneur (2004; 2010) is unprecedented. Literally thousands of organizations across the world have integrated The Business Model Canvas into their strategic business & innovation management structures. Many follow this methodology religiously. Because of these reasons this chapter will be dedicated to learning lessons from the Business Model Canvas.

Note that this chapter serves as one of the steps of the Business Model Framework development process as set out in the first chapter of this thesis. This chapter considers the *Learn* step of the Business Model Framework development process as highlighted in Figure 28 below.



*Figure 28 - The Business Model Framework Development Process*

The **research objective** of this chapter is to investigate The Business Model Canvas and learn lessons from the successes of this advanced business model framework. The lessons learned in this chapter will be translated into design requirements.

The **research outcome** of this chapter is to identify design requirements. The design requirements that will be identified in this chapter will assist with the Two-Sided Market Business Model Framework development process.

The **research methodology** that this chapter relied on was one of literature research and deductive reasoning. The literature study that was done relied on journal articles, theses and textbooks that are available in the academic domain.

Because enormous amounts of businesses have introduced and used The Business Model Canvas faithfully over the past five years since it has been launched in 2010 it can be concluded that Osterwalder & Pigneur have done many things right, many lessons can be learned from their successes.

This chapter will investigate and learn lessons from The Business Model Canvas. The lessons learned will be converted into design requirements that will guide the development of the Business Model Framework.

## 8.1 Building Blocks & Internal Dynamics

The Business Model Canvas consists of nine main business model elements referred to as *building blocks*. These building blocks form The Business Model Canvas. These building blocks are fundamental to each business that successfully want to serve One-Sided Markets.

Osterwalder & Pigneur (2010) describes it this way:

*The nine blocks cover the four main areas of a business: customers, offer, infrastructure, and financial viability.*

These four main areas of Business Models were identified in the second chapter of this thesis and serve as the four main areas of a business model. Also, the design requirements identified throughout the literature study were listed under one of them if they were deemed relevant to one of these areas of a business model.

The Two-Sided Market Business Model Framework that is going to be developed will also consist of building blocks. The building blocks will ensure that all the fundamental elements of a Multi-Sided Platform Business Model is captured, and that the four main areas of a business model is represented.

### 8.1.1 Internal Dynamics

Each building block of The Business Model Canvas has its own *internal dynamics*. Internal dynamics are the rules and principles that govern a building block. The internal dynamics of The Business Model Canvas building blocks are shown in Table 22.

Table 22 – The Internal Dynamics Of Each Building Block Of The Business Model Canvas

Nine Building Blocks	Internal Dynamics
Customer Segments	<p><b><u>MARKET TYPE:</u></b></p> <ul style="list-style-type: none"> <li>• Mass Market</li> <li>• Niche Market</li> <li>• Segmented</li> <li>• Diversified</li> </ul>
Channels	<p><b><u>CHANNEL PHASES:</u></b></p> <ul style="list-style-type: none"> <li>• Awareness</li> <li>• Evaluation</li> <li>• Purchase</li> <li>• Delivery</li> <li>• After Sales</li> </ul>
Customer Relationships	<p><b><u>EXAMPLES:</u></b></p> <ul style="list-style-type: none"> <li>• Personal Assistance</li> <li>• Dedicated Personal Assistance</li> <li>• Self-Service</li> <li>• Automated Services Communities</li> <li>• Co-creation</li> </ul>
Value Propositions	<p><b><u>CHARACTERISTICS:</u></b></p> <ul style="list-style-type: none"> <li>• Newness</li> <li>• Performance Customization “Getting the Job Done”</li> <li>• Design</li> <li>• Brand/Status</li> <li>• Price</li> <li>• Cost Reduction</li> <li>• Risk Reduction</li> <li>• Accessibility Convenience/Usability</li> </ul>
Key Resources	<p><b><u>CATEGORIES:</u></b></p> <ul style="list-style-type: none"> <li>• Production</li> <li>• Problem Solving</li> <li>• Platform/Network</li> </ul>
Key Activities	<p><b><u>TYPES OF RESOURCES:</u></b></p> <ul style="list-style-type: none"> <li>• Physical</li> <li>• Intellectual (brand patents, copyrights, data)</li> <li>• Human</li> <li>• Financial</li> </ul>
Key Partners	<p><b><u>MOTIVATIONS FOR PARTNERSHIPS:</u></b></p> <ul style="list-style-type: none"> <li>• Optimization and economy<sup>2</sup></li> <li>• Reduction of risk and uncertainty<sup>2</sup></li> <li>• Acquisition of particular resources and activities</li> </ul>
Revenue Streams	<p><b><u>TYPES:</u></b></p> <ul style="list-style-type: none"> <li>• Asset sales</li> <li>• Usage fees</li> <li>• Subscription Fees</li> <li>• Lending/Renting/Leasing</li> </ul>

	<ul style="list-style-type: none"> <li>• Licensing</li> <li>• Brokerage fees</li> <li>• Advertising</li> </ul> <p><b><u>FIXED PRICING:</u></b></p> <ul style="list-style-type: none"> <li>• List Prices</li> <li>• Product feature dependent</li> <li>• Customer segment dependent</li> <li>• Volume dependent</li> </ul> <p><b><u>DYNAMIC PRICING:</u></b></p> <ul style="list-style-type: none"> <li>• Negotiation (bargaining)</li> <li>• Yield Management</li> <li>• Real-time-Market</li> </ul>
<p>Cost Structure</p>	<p><b><u>IS YOUR BUSINESS MORE:</u></b></p> <ul style="list-style-type: none"> <li>• Cost Driven (leanest cost structure, low price value proposition, maximum automation, extensive outsourcing)</li> <li>• Value Driven (focused on value creation, premium value proposition)</li> </ul> <p><b><u>SAMPLE CHARACTERISTICS:</u></b></p> <ul style="list-style-type: none"> <li>• Fixed Costs (salaries, rents, utilities)</li> <li>• Variable costs</li> <li>• Economies of scale</li> <li>• Economies of scope</li> </ul>

The internal dynamics of each building block will not be expounded upon but it works as follows, when considering the *Customer Segment* building block the *Market Type* can either take the form of a:

- Mass Market,
- Niche Market,
- Segmented Market, or
- Diversified Market.

The Market Type is an internal dynamic of the Customer Segment building block. The Market Type governs the Customer Segment building block – *i.e.* how the business will approach the Customer Segment building block will depend on the Market Type.

Internal dynamics will be developed for the building blocks of the Two-Sided Market Business Model Framework in the same way that it was done for The Business Model Canvas.

The next section will go on to look at the sequential Building Block development of the Business Model Canvas.

## 8.2 Sequential Building Block Development Order

The Business Model Canvas has a sequential building block development order that is used when developing and considering a new business model. For instance, it does not make sense to look at the Financial Viability building blocks when the Key Activities building block (that incurs the most cost) and the Customer Segments building block (that generate the most revenue) have not been identified and understood. Also, before the Value Proposition building block can be designed a clear and in-depth understanding of the Customer Segment building block needs to be established.

For this reason The Business Model Canvas have developed a sequential building block development order to ensure that the Customer is considered first, then the Offer is designed, thereafter the Infrastructure that is necessary to produce the Offer for the Customer is developed and only after all of the first three main areas of a business model have been established is it important for the business model developers to validate the Financial Viability of the proposed Customer, Offer and Infrastructure – the financial implications that it has should result in a profitable equation.

The sequential building block development order of The Business Model Canvas looks as follows:

<b>Sequential Building Block Development Order</b>	<b>Four main areas of Business Models</b>
Customer Segment	Customer
Value Proposition	Offer
Channels	
Customer Relationship	
Key Activities	Infrastructure
Key Resources	
Key Partners	
Cost Structure	Financial Viability
Revenue Streams	

The sequential building block development order allows business model developers a logical flow when doing business model innovation. A sequential building block development order will also be developed for the Two-Sided Market Business Model Framework that is going to be developed in the following chapter.

### 8.3 Key Activities, Key Resources & Key Partners

Many businesses that used to serve One-Sided Markets have gone on to successfully incorporate Two-Sided Markets into their business model. A couple of real-life examples were mentioned in this thesis. This can be extrapolated and assumed that all businesses, whether serving One-Sided Markets, Two-Sided Markets or both, rely on Key Activities, Key Resources and Key Partners.

Key Activities, Key Resources and Key Partners can be listed under the Infrastructure area of business models because it allows businesses to deliver value to customers.

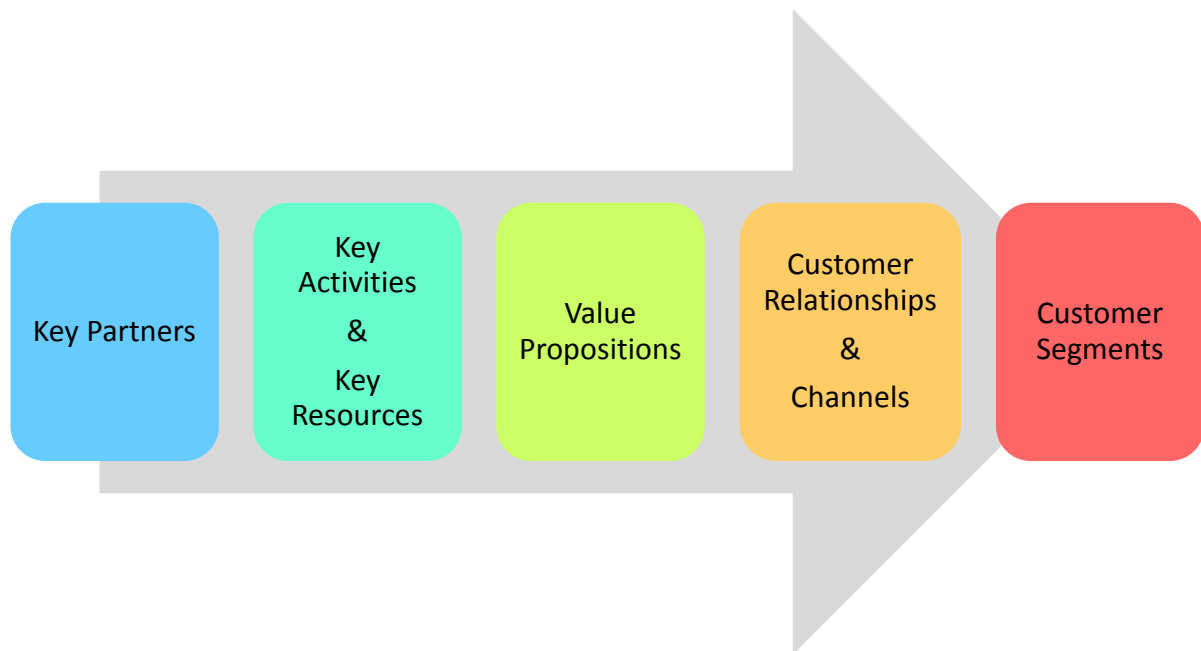
Also, a business can target One-Sided Markets, Two-Sided Markets or both. They will nonetheless rely on Key Activities, Key Resources and Key Partners as building blocks for their business.

Key Activities, Key Resources and Key Partners will be included in the Two-Sided Market Business Model Framework because all businesses rely on these building blocks and incorporate it into their business models regardless of whether they serve One-Sided Markets, Two-Sided Markets or perhaps even both.

### 8.4 Value Chain Direction

The value chain of The Business Model Canvas flows from left to right (see both Figure 7 and Figure 8 on pages 38 and 40, respectively). Note that The Business Model Canvas consists of nine building blocks. On the left-hand side is Key Partners. This includes suppliers and other strategic partners that provide value on the left of The Business Model Canvas. From there the provided value goes to Key Activities and Key Resources that work interdependently to develop and hence deliver a Value Proposition. The Value Proposition is offered to the Customer Segments on the right of the framework via the Channels that relies on a specific Customer Relationship that the incumbent business facilitates.





*Figure 29 - The Business Model Canvas Value Chain*

Figure 29 depicts the value chain flow from left to right in the same way that The Business Model Canvas does. Note that there are only seven building blocks mentioned above, the two financial viability building blocks are not included:

- 1) Cost Structure, and
- 2) Revenue Streams

In the same way that The Business Model Canvas' value chain flows from left to right will the Two-Sided Market Business Model Framework's value chain also flow.

The next section will go on to look at the fundamental roles that the Cost Structure and Revenue Streams Building Blocks play in the Business Model Canvas.

## 8.5 Financial Viability Sides

Cost Structure and Revenue Streams make up the Financial Viability building blocks of The Business Model Canvas. Note that there are four main areas of a business model:

- 1) Customer,

- 2) Offer,
- 3) Infrastructure, and
- 4) Financial Viability.

The order of these four elements is significant.

The single biggest element that is necessary for a successful business to exist is a Customer. A business can have cutting-edge technology, world-class employees and state-of-the-art products but if they do not have Customers to serve they would not be relevant not even to mention profitable. So first and foremost a business needs a Customer with a specific need that needs to be satisfied.

Next, a business needs a solution that it can offer the Customer. The Customer's need demands a solution – the Offer. Once again, a business can have cutting-edge technology and world-class employees but without a value offering it cannot generate value for Customers and ultimately itself.

In order for a business to be able to propose an Offer to Customers they need Infrastructure to enable all these activities of creating and delivering value. Infrastructure includes both the resources and activities necessary to deliver an Offer to Customers.

All three of these business model elements has some or other financial implication that impacts the Financial Viability of a business. A business model element can either incur an expense or generate an income. The ultimate goal of most businesses is to generate monetary value after all.

The hierarchy of the four main areas of business models is omnipotent in all successful profitable businesses.

The Business Model Canvas places expenses (the Cost Structure building block) on the left-hand side of The Business Model Canvas and income (the Revenue Streams building block) on the right-hand side.

It can also be reasoned that most, if not all, of the building blocks on the left-hand side of The Business Model Canvas are typically where costs are incurred and on the right-hand side where revenue is generated, hence the reason for these two building blocks to take a horizontal form lying at the bottom of The Business Model Canvas.

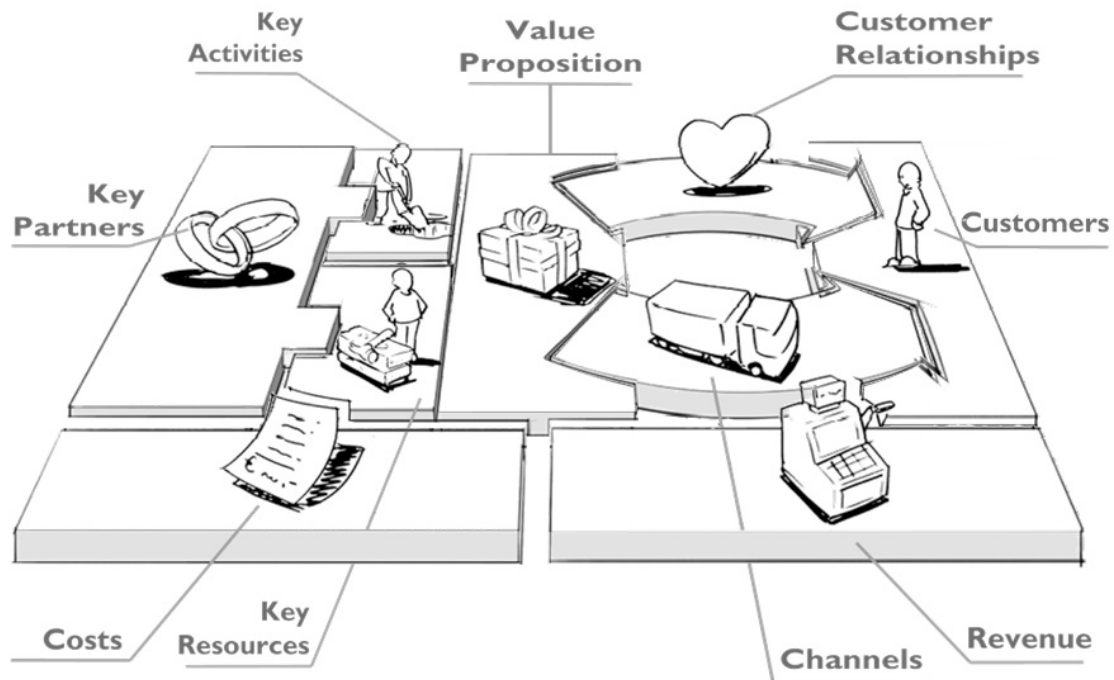


Figure 30 - Building Block layout of the Business Model Canvas

Figure 30 shows the two Financial Viability building blocks (Cost and Revenue) at the bottom of The Business Model Canvas. Note that Cost is on the left and Revenue on the right – suggesting that the monetary value increases from left to right.

The Two-Sided Market Business Model Framework will include the Financial Viability area of business models in the same way that The Business Model Canvas incorporated the Financial Viability building blocks as Cost Structure and Revenue Streams.

## 8.6 Conclusion: Identifying Business Model Framework Design Requirements

The lessons that were learned from investigating the ever so successful Business Model Canvas are listed below.

Table 23 - Design Requirements Identified in Chapter 8

<b>1. Customer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Customer design requirements were identified in this chapter.

<b>2. Offer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>

No Offer design requirements were identified in this chapter.

<b>3. Infrastructure</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
3.10	8.3	154	Key Activities, Key Resources and Key Partners	Key Activities, Key Resources and Key Partners will be included as building blocks	<input type="checkbox"/>

<b>4. Financial Viability</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
4.6	8.5	155	Revenue Streams & Cost Structure	Cost Structure and Revenue Streams building blocks will be included in the Framework	<input type="checkbox"/>

5.	Other				
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
5.8	8.1	150	Building blocks	Building blocks will be used to highlight the most important elements of the Business Model Framework	<input type="checkbox"/>
5.9	8.1.1	150	Internal dynamics	Internal dynamics will be developed for each building block	<input type="checkbox"/>
5.10	8.2	153	Sequential building block development order	A sequential building block development order needs to be developed for the Framework's building blocks	<input type="checkbox"/>
5.11	8.4	154	Value chain direction	The value chain direction of the Framework will flow from left to right	<input type="checkbox"/>
5.12	8.5	155	Financial Viability building blocks	The Cost Structure building block needs to be situated on the left and the Revenue Streams building block on the right	<input type="checkbox"/>

Valuable lessons were learned from The Business Model Canvas and design requirements were successfully identified. The next chapter will go on to develop the Two-Sided Market Business Model Framework by firstly analysing the design requirements. From the knowledge gathered the Two-Sided Market Business Model Framework will be constructed before going on to verify whether all the design requirements that were identified throughout the course of the literature study that was done in the preceding chapters are included in the constructed Business Model Framework.

# Chapter 9

## Business Model Framework Development

*Scientists investigate that which already is. Engineers create that which has never been.*

**– Albert Einstein**

### 9. Business Model Framework Development

This chapter will fulfil three steps of the Business Model Framework development process. The three steps that will be fulfilled are:

- 1) Analysis
- 2) Construction
- 3) Verification

Figure 31 below shows the Business Model Framework development process. The three green highlighted blocks in Figure 31 shows the three steps that will be completed in sequential order in this chapter.

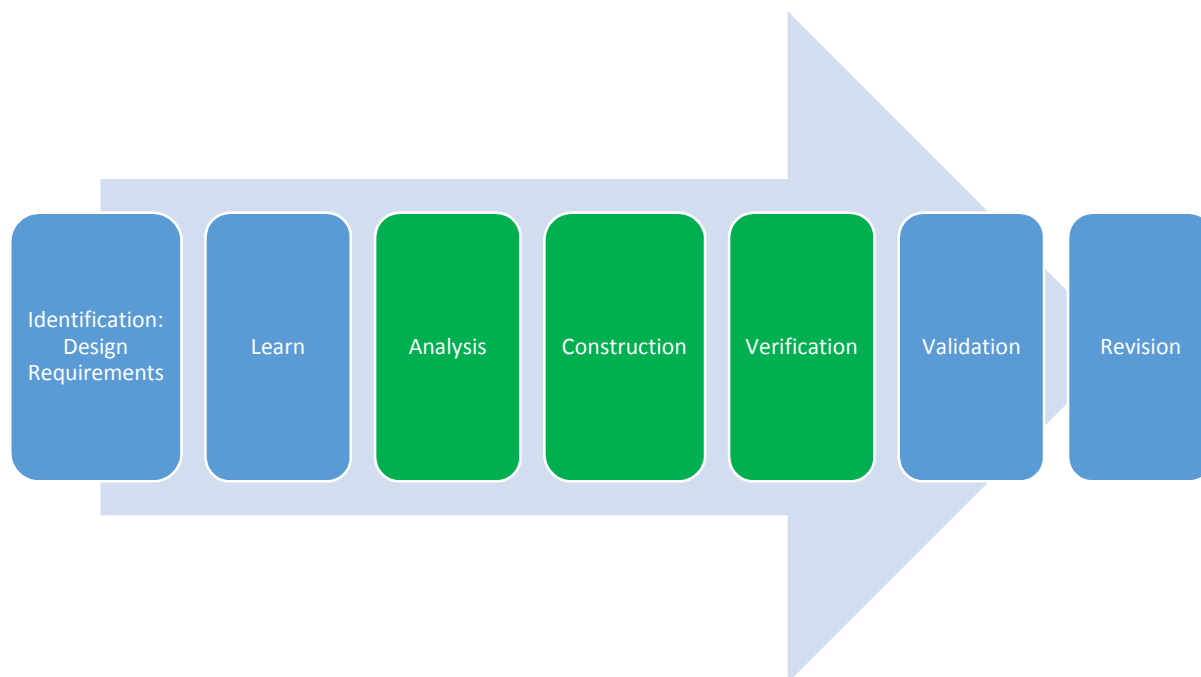


Figure 31 - The Business Model Framework Development Process

Design requirement **analysis** will rely on various engineering and engineering management tools and methods to analyse and ultimately better understand the design requirements that were identified throughout the course of the literature study.

The Two-Sided Market Business Model Framework will be **constructed** after the preceding analysis part.

The design requirement **verification** part will ensure that all the design requirements that were identified were utilised and included during the Two-Sided Market Business Model Framework construction.

### 9.1 Design Requirement Analysis: Building Block & Internal Dynamics Development

At the end of chapters 2 to 8 preceding this chapter design requirements were collected that will guide the development of the Two-Sided Market Business Model Framework – the primary reason for writing this thesis. The accumulated list of design requirements will first be analysed. This will assist with developing the building blocks of the Two-Sided Market Business Model Framework. After the building blocks have been developed the internal dynamics of each respective building block will be developed from the design requirements.

Color-coding will be used to indicate the respective building blocks that were developed from the corresponding design requirements in the relevant lists. The design requirements that are written in **bold** are the design requirements that were used to develop building blocks. Those that are not written in **bold** were only developed as internal dynamics. Internal dynamics are subject to the respective building blocks.

Only the Customer, Offer, Infrastructure and Financial Viability design requirements will be considered in this section. All the *Other* design requirements will be investigated after these in different steps of the Business Model Framework development.

#### 9.1.1 Developing Building Blocks from the Accumulated List of Design Requirements

This section will look at the accumulated list of design requirements. All the design requirements of each main area of a business model will be considered. After considering the design requirements building blocks will be developed for the Business Model Framework.

Design requirements will be grouped if they are considered as being interlinked and interdependent. The grouped design requirements will be color-coded. From the grouped design requirements a building block will be developed from the main design requirement (indicated by being written in **bold**). All the other design requirements that are still left in the group that were not used yet will be included as internal dynamics in the respective building blocks.

Internal dynamics are the rules, principles, dynamics, *etc.* that govern the building blocks. The internal dynamics will be translated from design requirements which means that all the research done preceding this chapter will be included in the Business Model Framework.

##### 9.1.1.1 Customer Building Blocks and Internal Dynamics

This section will consider all the Customer design requirements holistically and in light of the lessons learned from The Business Model Canvas in the previous chapter – chapter 8: Learning from the Business Model Canvas. All the design requirements that are relevant to the Customer area of business model are listed in Table 24 below.



Table 24 - Accumulated List of Customer Design Requirements

<b>1. Customer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
1.1	3.1.1	62	Two distinct user groups	The business model framework should accommodate two distinct user groups	<input checked="" type="checkbox"/>
1.2	3.1	57	Needs	Both sides of the Two-Sided Market has a distinct need that they demand	<input checked="" type="checkbox"/>
1.3	3.1	57	Subsidy-Side vs. Money-Side	A Two-Sided Market has at least one Money-Side. The other side can either be a Subsidy-Side or a Money-Side	<input checked="" type="checkbox"/>
1.4	3.1	57	User/Consumer side vs. Supplier/Developer side	A Two-Sided Market has a User/Consumer side and a Supplier/Developer side	<input checked="" type="checkbox"/>
1.5	4.2.2.1	94	Price-sensitivity	The one side of the Two-Sided Market is usually more price-sensitive and the other side less	<input checked="" type="checkbox"/>

				price-sensitive	
1.6	4.2.2.2	95	Quality vs. Quantity	Each side of the Two-Sided Market can either be a Quality side (contribute quality) or a Quantity side (contribute quantity, show up in high volumes)	<input checked="" type="checkbox"/>
1.7	5.3	114	Marquee users	Marquee users should be targeted because they can contribute to market growth	<input checked="" type="checkbox"/>
1.8	5.6	118	Multi-homing vs. single-homing	Each one of the markets that make up the Two-Sided Market can either be a Multi-Homing or Single-Homing side	<input checked="" type="checkbox"/>
1.9	5.4	115	Sign-up, switching, multi-homing and exit costs	Users have various costs that they need to overcome to affiliate with the Platform, they can take many forms: <ul style="list-style-type: none"> <li>• Time</li> <li>• Money</li> <li>• Learning</li> <li>• Effort</li> </ul>	<input checked="" type="checkbox"/>

### **Market 1 and Market 2**

Bearing the design requirements listed above in mind there are two building blocks that can be identified: *Market 1* and *Market 2*. Design requirement 1.1 states that a Two-Sided Market business model requires two distinct groups of users. All the other design requirements are relevant to the two distinct groups of users. These design requirements are related to the Two-Sided Market – the two distinct groups of users.

Design requirements 1.2 to 1.9 are all applicable to a business model's Two-Sided Market and will therefore be considered as building block internal dynamics of Market 1 and Market 2.

Building blocks Market 1 and Market 2 will look the same although they will be defined differently whenever a business model is discussed. Building blocks Market 1 and Market 2 will look as follow:

## MARKET 1 & 2

**Need**  
What does the market need?

**User/Consumer Side vs. Supplier/Developer Side**  
 User/Consumer                       Supplier/Developer

**Price-Sensitivity**  
 Low     High

**Quality vs. Quantity**  
 Quality     Quantity

**Subsidy-Side vs. Money-Side**  
 Subsidy-Side                                       Money-Side

**Single-Homing vs. Multi-Homing**  
 Single-Homing                                       Multi-Homing

**Sign-up, switching, multi-homing and exit costs**  
 Time     Money  
 Learning     Effort

**Marquee users**  
Which users should especially be targeted?

Design requirements 1.1 to 1.9 were all used in this sub-section to develop Customer building blocks. All the Customer design requirements have been utilized. Some of them were used to develop two building blocks and the other for the building blocks' internal dynamics. All design requirements were highlighted with grey because they are all relevant to the same building block. Design requirement 1.1 has bold letters to indicate that this specific design requirement initiated a building block, while all the other design requirements (not written in bold letters) were only included as internal dynamics.

## 9.1.1.2 Offer Building Blocks and Internal Dynamics

All the Offer design requirements follow in Table 25 below. The building block development follows below.

Table 25 - Accumulated List of Offer Design Requirements

<b>2. Offer</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
2.1	3.1	57	Value propositions	Both sides of the Two-Sided Market demands a value proposition	<input checked="" type="checkbox"/>
2.2	3.3	72	Network Effects	Network Effects are present between the two distinct user groups	<input checked="" type="checkbox"/>
2.3	3.3.2	76	Cross-Side vs. Same-Side Network Effects	Network Effects are either Cross-Sided or Same-Sided	<input checked="" type="checkbox"/>
2.4	3.3.2	76	Positive vs. negative Network Effects	Network Effects are either Positive or Negative	<input checked="" type="checkbox"/>
2.5	5.5	116	Bundling	Bundling opportunities that exist should be pursued by the Intermediary to promote market growth and an improved value offering	<input checked="" type="checkbox"/>

2.6	6.1	125	Two distinct value propositions	Two distinct value propositions are offered to the two respective sides of the Two-Sided Market	<input checked="" type="checkbox"/>
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### Value Proposition 1 and Value Proposition 2

If design requirements 2.1 and 2.6 are considered two building blocks can be developed: Value Proposition 1 and Value Proposition 2. All the other design requirements are irrelevant to these two building blocks except design requirement 2.5: Bundling.

Bundling will be incorporated as an internal dynamic of building blocks Value Proposition 1 and Value Proposition 2.

## VALUE PROPOSITION 1 AND VALUE PROPOSITION 2

### Bundling

What Bundling opportunities exist?

- Offer similar value propositions as competitors.
- Offer similar or extra value propositions in addition to the existing value propositions.

### Network Effects

Design requirement 2.2: Network Effects demands a building block. Design requirements 2.3 and 2.4 will contribute internal dynamics for the Network Effects building block.

The internal dynamics of the Network Effects building block are:

- Cross-Side vs. Same-Side Network Effects, and
- Positive vs. Positive Network Effects.

## NETWORK EFFECTS

### Cross-Side vs. Same-Side Network Effects

Cross-Side

Same-Side

**Positive vs. Negative Network Effects**

Positive

Negative

All the Offer design requirements has been satisfied, from 2.1 all the way through to 2.6. They were included in three different building blocks and as various internal dynamics. Design requirements 2.2 and 2.6 was used to develop building blocks (hence written in bold letters). The other design requirements were merely included as internal dynamics.

All the design requirements that were used for the Value Proposition building and Network Effects building blocks are highlighted in light blue and light green, respectively.

*9.1.1.3 Infrastructure Building Blocks and Internal Dynamics*

The ten Infrastructure design requirements will be scrutinised next to develop building blocks with according internal dynamics.

Table 26 - Accumulated List of Infrastructure Design Requirements

<b>3. Infrastructure</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
3.1	3.1.1	62	Platform	Every Multi-Sided Platform Business model includes a Platform	<input checked="" type="checkbox"/>
3.2	3.2.1	65	Four different Platform types	Every Multi-Sided Platform Business is either an Exchange, Advertising-Supported Media, Transaction System or Software Platform.	<input checked="" type="checkbox"/>
3.3	4.5	104	Transaction or Non-Transaction Platform	A Platform can either be a Transaction or a Non-Transaction Platform	<input checked="" type="checkbox"/>
3.4	5.8	120	Platform limitations	<ul style="list-style-type: none"> <li>• Platform limitations               <ul style="list-style-type: none"> <li>○ Size</li> <li>○ Maintenance</li> <li>○ Congestion</li> <li>○ Scalability</li> </ul> </li> </ul>	<input checked="" type="checkbox"/>
3.5	6.3	128	Complementary goods	Complementary goods are necessary to access the Platform and ultimately the value propositions	<input checked="" type="checkbox"/>

3.6	6.3	128	Complementary goods: Availability, accessibility, affordability	How available, accessible and affordable is a complementary good?	<input checked="" type="checkbox"/>
3.7	6.3.1	129	Value-enabling vs. value- exceeding complementary goods	Complementary goods can either be value-enabling or value-exceeding	<input checked="" type="checkbox"/>
3.8	6.3.2	130	Self-providing vs. strategic partners vs. basic providers	Complementary goods can be provided by: <ul style="list-style-type: none"> <li>• The Intermediary (self- providing), or</li> <li>• Strategic partners, or</li> <li>• Basic providers</li> </ul>	<input checked="" type="checkbox"/>
3.9	6.3.2	130	Strategic partners providing complementary goods	Strategic partners that provide complementary goods are considered business partners	<input checked="" type="checkbox"/>
<b>3.10</b>	<b>8.3</b>	<b>154</b>	<b>Key Activities, Key Resources and Key Partners</b>	<b>Key Activities, Key Resources and Key Partners will be included as building blocks</b>	<input checked="" type="checkbox"/>

### Platform

A Platform building block will be developed triggered by design requirement number 3.1. Design requirements 3.2 to 3.4 will be included in the Platform building block as internal dynamics. The building block will look as follows:



## PLATFORM

### Platform Type

Which Platform opportunities exist that should be exploited?

Exchange

Does any matchmaking opportunities exist? Can the Platform serve as a connecting network?

Advertising-Supported Media

Does any advertising opportunities exist? Does the installed base offer readership?

Transaction System

Does the Platform offer transaction opportunities? Can the Platform serve as a bidding or trading platform?

Software Platform

Does any opportunities exist to offer exclusive access?

### Transaction or Non-Transaction Platform

Transaction

Non-Transaction

### Platform Limitations

- Size
- Maintenance
- Congestion
- Scalability

## **Complementary Goods 1 and Complementary Goods 2**

Design requirement 3.5 calls for two building blocks: Complementary Goods 1 and Complementary Goods 2, because both sides of the market requires their respective complementary goods. Design requirements 3.6 to 3.8 will be developed as internal dynamics because they are relevant to Complementary Goods 1 and Complementary Goods 2. Building blocks Complementary Goods 1 and Complementary Goods 2 will look as follow:

## COMPLEMENTARY GOODS 1 AND COMPLEMENTARY GOODS 2

### Value-Enabling vs. Value-Exceeding

- Value-Enabling (Minimum Requirement)
- Value-Exceeding

### Providers

- Self-Providing
- Strategic Partners
- Basic Providers

### Availability, Accessibility and Affordability

- Availability
- Accessibility
- Affordability

### **Key Activities, Key Resources and Key Partners**

Design requirement 3.10 demands three different building blocks:

- Key Activities,
- Key Resources, and
- Key Partners

These three building blocks are exactly the same as that of The Business Model Canvas. The Business Model Canvas includes all three of these building blocks. It was decided to also include them in the Two-Sided Market Business Model Framework because One-Sided and Two-Sided Market business models are the same in that sense – both of them have Key Activities, Key Resources and Key Partners as building blocks (see section 8.3 on page 154 for an in-depth discussion). One-Sided and Two-Sided Market business models have those three Infrastructure building blocks in common.

Design requirement 3.9 will however contribute an internal dynamic to the Key Partners building block. Design requirement 3.9 states that if complementary goods are provided by strategic partners (not by the Intermediary or basic providers) they will be deemed as a strategic key partner of the Intermediary.

The three building blocks will look as follow.

## **KEY ACTIVITIES**

What Key Activities do we need to perform to deliver the Value Propositions via the Platform to Market 1 and Market 2?

## **KEY RESOURCES**

What Key Resources do we need to perform the Key Activities?

## **KEY PARTNERS**

What Key Partners do we rely on to perform Key Activities or provide Key Resources?

### **Strategic Complementary Goods Providers**

With which Key Partners do we have a strategic agreement to provide Complementary Goods?

All the design requirements were utilized, from 3.1 to 3.10. Design requirements 3.1, 3.5 and 3.10 were used to develop building blocks (they are therefore written in bold letters). All the other design requirements not used for building blocks were included as internal dynamics.

All the design requirements that were used for the Platform building block are highlighted in light yellow, all the Complementary Goods design requirements are highlighted in light orange. The two design requirements that led to the development of the Key Activities, Key Resources and Key Partners building blocks are highlighted in light purple.

### *9.1.1.4 Financial Viability Building Blocks and Internal Dynamics*

This section will consider the Financial Viability design requirements to develop building blocks, each with their respective internal dynamics.

Table 27 - Accumulated List of Financial Viability Design Requirements

<b>4. Financial Viability</b>					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
4.1	4.2	91	Two pricing models	Each side of the Two-Sided Market requires their own pricing model	<input checked="" type="checkbox"/>
4.2	4.3	99	Pricing model elements	<p>A pricing model consists of the following pricing model elements or a combination thereof:</p> <ul style="list-style-type: none"> <li>• Joining fees,</li> <li>• Fixed recurring fees,</li> <li>• Usage fees,</li> <li>• Freemium,</li> <li>• Trial Accounts,</li> <li>• Free Credit,</li> <li>• Royalties, and</li> <li>• Subsidy-pricing</li> </ul>	<input checked="" type="checkbox"/>
4.3	4	88	Profit-minimization vs. profit-maximization	A pricing model can either follow a profit-minimization or a profit-maximization strategy	<input checked="" type="checkbox"/>
4.4	4	88	Initial vs. future pricing model	Some Intermediaries start out with an initial pricing model and takes on	<input checked="" type="checkbox"/>

				an eventual pricing model at a later stage of their business model life cycle	
4.5	4.3.6	101	Incremental costs per user	The incremental costs per user is the additional cost that an Intermediary has to incur in order to take another user on board.	<input checked="" type="checkbox"/>
4.6	8.5	155	<b>Revenue Streams &amp; Cost Structure</b>	<b>Cost Structure and Revenue Streams building blocks will be included in the Framework</b>	<input checked="" type="checkbox"/>

#### **Pricing Model 1 and Pricing Model 2**

Design requirement 4.1 initiates two separate building blocks: Pricing Model 1 and Pricing Model 2. Two separate building blocks are required, each for the two respective markets. Design requirements 4.2 to 4.4 will be incorporated in the two pricing model building blocks as internal dynamics. The two building blocks will look as follow.

## PRICING MODEL 1 AND PRICING MODEL 2

### Initial vs. Future Pricing Model

Initial Pricing Model

Future Pricing Model

### Profit-Minimization vs. Profit-Maximization Pricing Model

Profit-Minimization

Profit-Maximization

### Pricing Model Elements

Joining fees

Fixed recurring fees

Usage fees

Freemium

Trial Accounts

Free Credit

Royalties

Subsidy-pricing

## Cost Structure and Revenue Streams

Design requirement 4.6 demands two Financial Viability building blocks:

- Cost Structure, and
- Revenue Streams.

Design requirement 4.5 will be included as an internal dynamic of the Cost Structure building block.

These two financial viability building blocks will look as follow.

## **COST STRUCTURE**

Which building blocks incur what Costs?

### **Pricing Model Costs (Subsidy-Pricing)**

What Costs do the Pricing Models incur?

### **Incremental Costs Per User**

What are the incremental costs per user that gets on board?

## **REVENUE STREAMS**

Which building blocks generate Revenue Streams?

What are these Revenue Streams?

Are there additional Revenue Stream opportunities?

### **Pricing Model Revenue Streams**

What Revenue Streams do the Pricing Models generate?

All the Financial Viability design requirements were included in the development of the Pricing Models, Cost Structure and Revenue Streams building blocks – either as building blocks or internal dynamics. Design requirements 4.1 to 4.6 were all included.

The design requirements that were used for the two Pricing Model building blocks are highlighted in light grey while all the design requirements that were used for the two Cost Structure and Revenue Streams building blocks are highlighted in light orange. Design requirements 4.1 and 4.6 are both written in bold because these two design requirements were used to develop building blocks while the other were merely included as internal dynamics of the building blocks.

#### 9.1.1.5 Total Building Blocks

The 15 building blocks that were developed in the preceding sub-sections that will be included in the Two-Sided Market Business Model Framework are numbered below.

<b>1) Market 1</b>
<b>2) Market 2</b>
<b>3) Value Proposition 1</b>
<b>4) Value Proposition 2</b>
5) Network Effects
6) Platform
<b>7) Complementary Goods 1</b>
<b>8) Complementary Goods 2</b>
9) Key Activities
10) Key Resources
11) Key Partners
<b>12) Pricing Model 1</b>
<b>13) Pricing Model 2</b>
14) Cost Structure
15) Revenue Streams

All the Customer building blocks are highlighted in red, the Offer building blocks are highlighted in orange, the Infrastructure building blocks are highlighted in green, and the Financial Viability building blocks are highlighted in blue. All the building blocks that are numbered twice (all written in *italic* and bold) are building blocks that are relevant to the two distinct groups of the Two-Sided Market. For instance, the Value Proposition that will be offered to Market 1 is Value Proposition 1.

Johnson *et al.* (2008) writes that the “*natural interdependencies*” that exist in the business model are often misunderstood or sometimes even not understood at all. Before going on to further develop the Business Model Framework the next section will consider the connections (*i.e.* the “*interdependencies*”) between the building blocks.



## 9.1.2 Connections between Building Blocks

This section will consider all the building blocks that were developed to discover the connections and interdependencies that exist among them. This analysis technique will allow for an improved Business Model Framework that will be developed. The connections will be identified by means of the knowledge that was learned throughout the literature study preceding this chapter. The connections that will be discovered will ensure that an improved understanding of the building blocks are established.

### *9.1.2.1 Connections*

Table 28 below shows the 15 building blocks with their respective connections between one another. An in-depth description follows below.

Table 28 - Connections between Building Blocks

	Customers	Offer	Infrastructure	Financial viability	Market 1	Market 2	Value proposition 1	Value proposition 2	Network Effects	Platform	Complementary Goods 1	Complementary Goods 2	Key Activities	Key Resources	Key Partners	Pricing model 1	Pricing model 2	Revenue streams	Cost structure
Market 1	X						1		2	3	4					5			
Market 2	X							6	7	8		9					10		
Value proposition 1		X								11			12	13	14	15			16
Value proposition 2		X								17			18	19	20		21		22
Network Effects		X																	
Platform			X								23	24	25	26	27				28
Complementary Goods 1			X															29	
Complementary Goods 2			X															30	
Key Activities			X																31
Key Resources			X																32
Key Partners			X																33
Pricing model 1				X														34	35
Pricing model 2				X														36	37
Revenue streams				X															
Cost structure				X															

The second column from left to the fifth shows under which area of a business model each building block is listed. The columns on the right that has a number entered into the correlating cell between two different building blocks indicates that a connection exists between the two building blocks.

The following sub-section will explain each connection that have been indicated with a respective number in Table 28.

#### *9.1.2.2 Connection Descriptions*

Each of the connections that exist between two building blocks were indicated by a number in Table 28 above. Each of these connections that exist will be explained below in Table 29.

Table 29 - Connection Descriptions (Also see Table 28 above)

Con- nections	Description
1	Market 1 demands Value Proposition 1
2	Market 1 relies on Network Effects to add value to Value Proposition 1
3	Market 1 accesses Value Proposition 1 via the Platform
4	Market 1 relies on Complementary Goods 1 to access the Platform
5	Market 1 needs to pay a price set by Pricing Model 1 to access the Platform
6	Market 2 demands Value Proposition 2
7	Market 2 relies on Network Effects to add value to Value Proposition 2
8	Market 2 accesses Value Proposition 2 via the Platform
9	Market 2 relies on Complementary Goods 2 to access the Platform
10	Market 2 needs to pay a price set by Pricing Model 2 to access the Platform
11	Value Proposition 1 is offered from the Platform
12	Value Proposition 1 is delivered by performing Key Activities
13	Value Proposition 1 is delivered by relying on Key Resources
14	Value Proposition 1 is delivered by relying on Key Partners
15	Pricing Model 1 is relevant to Value Proposition 1
16	Offering Value Proposition 1 incurs a Cost (adding to the Cost Structure)
17	Value Proposition 2 is offered from the Platform
18	Value Proposition 2 is delivered by performing Key Activities
19	Value Proposition 2 is delivered by relying on Key Resources
20	Value Proposition 2 is delivered by relying on Key Partners
21	Pricing Model 2 is relevant to Value Proposition 2
22	Offering Value Proposition 2 incurs a Cost (adding to the Cost Structure)
23	Complementary Goods 1 grants Market 1 access to the Platform
24	Complementary Goods 2 grants Market 2 access to the Platform
25	Key Activities are performed to support the Platform
26	Key Resources are relied on to support the Platform
27	Key Partners are relied on to support the Platform
28	Having the Platform in place incurs costs
29	Complementary Goods 1 can generate a Revenue Stream if the complementary goods are provided by the Intermediary
30	Complementary Goods 2 can generate a Revenue Stream if the complementary goods are provided by the Intermediary
31	Key Activities incur Costs (adding to the Cost Structure)
32	Key Resources incur Costs (adding to the Cost Structure)
33	Key Partners incur Costs (adding to the Cost Structure)
34	Pricing Model 1 can generate a Revenue Stream (or incur a Cost (adding to the Cost Structure))
35	Pricing Model 2 can generate a Revenue Stream (or incur a Cost (adding to the Cost Structure))
36	Pricing Model 1 can incur a Cost (adding to the Cost Structure) (or generate a Revenue Stream)
37	Pricing Model 2 can incur a Cost (adding to the Cost Structure) (or generate a Revenue Stream)

The descriptions of the connections that exist amongst building blocks have established an even better understanding of the building blocks.

## 9.2 Business Model Framework Construction

This section will go on to eventually construct the final complete Business Model Framework. The *Other* design requirements that have not been included will be utilized in this section. Engineering and engineering management tools will be used to eventually construct the Framework.

Table 30 below shows the accumulated list of *Other* design requirements. All of these design requirements will be utilized in this section.

Table 30 - Accumulated List of Other Design Requirements

5. Other					
No.	Sect.	Pg.	Design Requirement	Notes	<input checked="" type="checkbox"/>
5.1	1.2.2	14	Defining and understanding a business model	A business model framework should be able to define a business model clearly so that an understanding can be established amongst a group of people	<input checked="" type="checkbox"/>
5.2	1.4	16	Shared understanding of a business model	A business model framework should be able to establish a shared understanding amongst many people	<input checked="" type="checkbox"/>
5.3	1.4	16	Description and discussion	A business model framework should be able to facilitate description and discussion about a business model	<input checked="" type="checkbox"/>
5.4	1.2.2	14	Business model dynamics and processes	A clear business model definition explains the <b>dynamics</b> and <b>processes</b> of a business model	<input checked="" type="checkbox"/>
5.5	1.4	16	Simple (not oversimplifying), relevant and intuitively	A clear business model definition is simple (not oversimplifying it),	<input checked="" type="checkbox"/>

			understandable	relevant and understandable	
5.6	1.4	16	Business model innovation tool	A business model framework tool should serve as a business model innovation tool for boardroom meetings, workshops, discussions, business model innovation projects, <i>etc.</i>	<input checked="" type="checkbox"/>
5.7	7.1.1	138	Winner-Takes-All Dynamics Requirements	<ul style="list-style-type: none"> <li>• Winner-Takes-All Dynamics Requirements               <ul style="list-style-type: none"> <li>○ Multi-homing costs and/or switching costs are high for at least one user side,</li> <li>○ Network Effects are positive and strong at least for the side with high multi-homing costs, and</li> <li>○ Neither sides have a strong preference for special features</li> </ul> </li> </ul>	<input checked="" type="checkbox"/>
5.8	8.1	150	Building blocks	Building blocks will be used to highlight the most important elements of the Business Model Framework	<input checked="" type="checkbox"/>
5.9	8.1.1	150	Internal dynamics	Internal dynamics will be developed for each building block	<input checked="" type="checkbox"/>
5.10	8.2	153	Sequential building block development order	A sequential building block development order needs to be developed for the Framework's building blocks	<input checked="" type="checkbox"/>

5.11	8.4	154	Value chain direction	The value chain direction of the Framework will flow from left to right	<input checked="" type="checkbox"/>
5.12	8.5	155	Financial Viability building blocks	The Cost Structure building block needs to be situated on the left and the Revenue Streams building block on the right	<input checked="" type="checkbox"/>

### 9.2.1 Building Block Financial Viability Implications

Each of the building blocks can have different Financial Viability implications:

- Revenue generating, Revenue Streams
- Cost incurring, Cost Structure
- Both, or Revenue Streams and Cost Structure
- Neither. Not Revenue Streams and Cost Structure

A building block can generate revenue, lead to costs that are incurred, both of these, or none of these.

It is important to understand what the Financial Viability implications of the individual building blocks are before going on to construct the Business Model Framework. Table 31 below shows the different Financial Viability implication combinations of each building block.



Table 31 - Building Block Financial Viability Implications

Building Block	Revenue	Cost	Both	Neither
Market 1			X	
Market 2			X	
Value proposition 1			X	
Value proposition 2			X	
Network Effects				X
Platform		X		
Complementary Goods 1			X	
Complementary Goods 2			X	
Key Activities		X		
Key Resources		X		
Key Partners		X		
Pricing model 1			X	
Pricing model 2			X	
Revenue streams	X			
Cost structure		X		

Table 31 works as follows, for instance, both the Value Proposition building blocks can both generate revenue and lead to costs that are incurred. Value offerings are often sold at a revenue generating price which leads to a profit. Other times value offerings are given away for free which means that costs are incurred that the Intermediary needs to take upon themselves.

The Financial Viability implications make understanding the building blocks easier.

### 9.2.2 Value Chain Flow Diagram (5.4, 5.11)

Design requirement 5.4 demands that the Business Model Framework convey the dynamics and processes of a business model. This sub-section will consider the value chain and the flow of the dynamics and processes thereof. Design requirement 5.11 suggests that the value chain flows from left to right.

It was decided to make use of a diagram to convey the value chain flow. Figure 32 depicts the value chain of a Two-Sided Market business model. Note that all the building blocks are included.

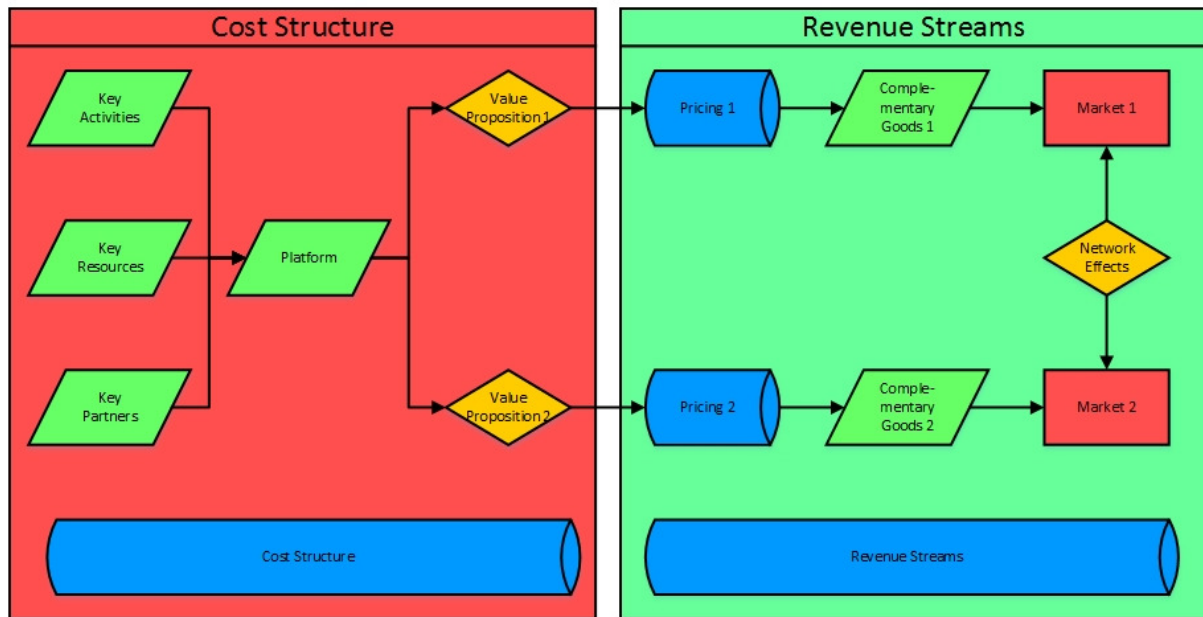


Figure 32 - Value Chain Flow Diagram

The Customer building blocks are depicted by red squares, the Offer building blocks are depicted by orange diamonds, the Infrastructure building blocks are depicted by green parallelograms and the Financial Viability building blocks are depicted by blue cylinders.

All the building blocks that are typically (not always) revenue generating are placed on the right hand side and all the building blocks that are typically cost incurring are placed on the left hand side. Note that the Revenue Streams building block is situated on the right because value is generated on the right hand side of a value chain that flows from left to right. The Cost Structure building block was situated on the left because costs are typically incurred on the left.

### 9.2.3 Suggested Building Block Layout (5.8, 5.12)

Design requirement 5.8 demands that the business model mainly consist of building blocks. Figure 33 below shows the suggested building block layout.

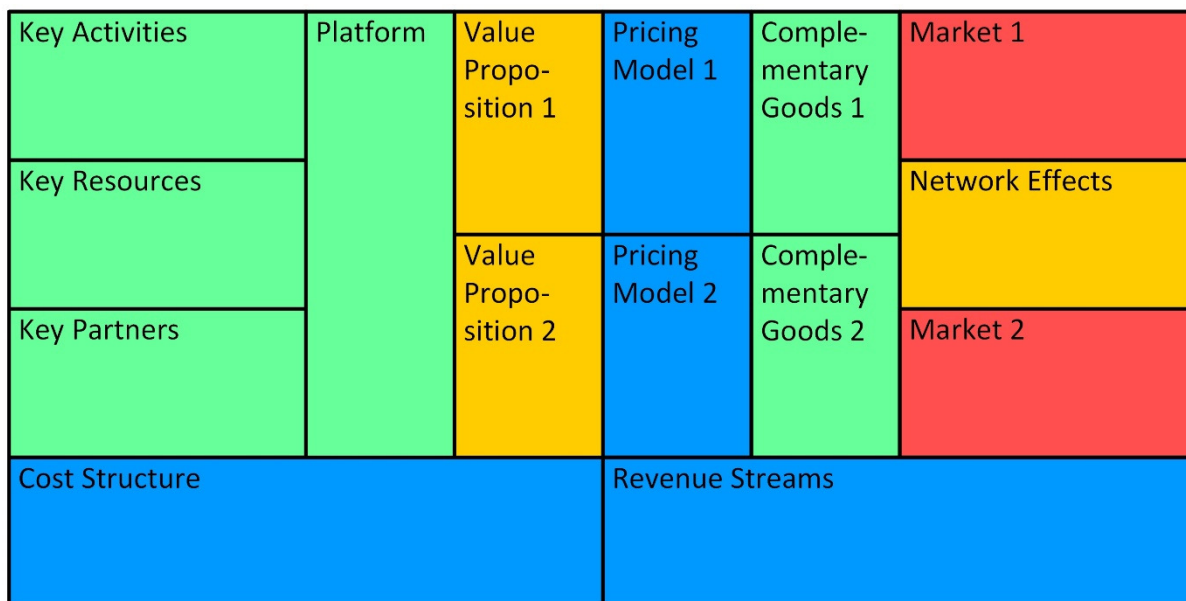


Figure 33 - Building Block Layout

Note that the layout is very similar to that of the value chain in Figure 32 above.

Design requirement 5.12 also suggest that the Cost Structure and Revenue Streams building blocks be placed on the left and right, respectively.

9.2.4 Sequential Building Block Development Order (5.10)

Design requirement 5.10 requires that a sequential building block development order be established for the building blocks. The order of building block development will look as follows:

- 1) Market 1
- 2) Market 2
- 3) Value Proposition 1
- 4) Value Proposition 2
- 5) Platform
- 6) Complementary Goods 1
- 7) Complementary Goods 2
- 8) Network Effects
- 9) Pricing Model 1
- 10) Pricing Model 2

- 11) Key Activities
- 12) Key Resources
- 13) Key Partners
- 14) Cost Structure
- 15) Revenue Streams

The order of development for the building blocks is merely a suggestion that can be followed when developing a business model definition. The order can be interrupted and altered when doing business model workshops if it will lead to an improved discussion.

#### 9.2.5 Complete Constructed Business Model Framework (5.1, 5.2, 5.3, 5.5, 5.6, 5.7, 5.9)

With all the previous sub-sections and design requirements 5.1, 5.2, 5.3, 5.5, 5.6, 5.7 and 5.9 in mind a complete Two-Sided Market Business Model Framework will be constructed. These design requirements suggest that the Business Model Framework should:

- 5.1 **Define** a Two-Sided Market business model so that an improved **understanding** can be established
- 5.2 Establish a **shared understanding** of a Two-Sided Market business model in a group of people
- 5.3 **Facilitate description and discussion**
- 5.5 Be **relevant** and **intuitively understandable** as well as **simple** but at the same time not oversimplifying it
- 5.6 Be a **business model innovation tool**. A business model framework tool should serve as a business model innovation tool for boardroom meetings, workshops, discussions, business model innovation projects, *etc.*
- 5.7 Include **winner-takes-all dynamics requirements**.
- 5.9 Include the **internal dynamics** of each building block.

The design requirements listed above will be included and satisfied in the complete Two-Sided Market Business Model Framework.

The complete constructed Two-Sided Market Business Model Framework can be seen on the next page. Note that the Two-Sided Market Business Model Framework is developed in such a way that it can be used in board room meetings (or other business model innovation projects) therefore it can either be printed on an A2 or A1 size paper.

# Complete Constructed Two-Sided Market Business Model Framework

The constructed Business Model Framework will be verified in the next section before it will be validated. Note that the constructed Business Model Framework will only be showed in this subsection. How it functions and how it is applied will be only be shown in the next chapter – Chapter 10: Business Model Framework Validation. Chapter 10 will use case studies of some of the world’s most successful Two-Sided Market business models to show how the Business Model Framework works.

### 9.3 Design Requirement Verification

The verification step of the Business Model Framework development process was implemented to ensure that all the design requirements were included into the Business Model Framework and to ensure that the inclusion suffices.

All the design requirements were ticked, see tables:

- Table 24 for all the Customer design requirements that were used,
- Table 25 for all the Offer design requirements that were used,
- Table 26 for all the Infrastructure design requirements that were used, and
- Table 27 for all the Financial Viability design requirements that were used, and
- Table 30 for all the *Other* design requirements that were used.

All of the design requirements were included throughout the development of the Business Model Framework.

Design requirements 5.1, 5.2, 5.3, 5.5 and 5.6 are specifications that can be considered by one person as being satisfied and another person might reason that these design requirements have not been met. Testing whether these design requirements have been met or not can easily be a predisposed and opinionated matter. They are different from the other design requirements because whether they are considered as being included is not a binary matter, but rather a subjective and opinionated one.

These specific design requirements are:

- 5.1 **Define** a Two-Sided Market business model so that an improved **understanding** can be established
- 5.2 Establish a **shared understanding** of a Two-Sided Market business model in a group of people
- 5.3 **Facilitate description** and **discussion**
- 5.5 Be **relevant** and **intuitively understandable** as well as **simple** but at the same time not oversimplifying it
- 5.6 Be a **business model innovation tool**. A business model framework tool should serve as a business model innovation tool for boardroom meetings, workshops, discussions, business model innovation projects, *etc.*

These design requirements were identified to ensure that the Business Model Framework should be designed in a way that simplifies business model innovation discussions. The Business Model Framework should be able to do this by guiding discussion from defining a business model to establishing an aligned understanding amongst a group of people, and from thereon it should serve as a business model innovation tool. Groups of people should be able to develop a blueprint of the altered and improved business model whenever the outcome is to innovate on business model level. Business model innovation discussions should be able to depict the as-is business model and work from there to design the to-be business model – the ideal business model that the executive managers want to implement. The Business Model Framework serves as a business model innovation tool.

The next chapter, Chapter 10: Business Model Framework Validation, will validate the Business Model Framework by analysing four different successful Two-Sided Market business models with help of the Business Model Framework. The validation will also serve as a means of verifying that design requirements 5.1, 5.2, 5.3, 5.5 and 5.6 suffice.

# Chapter 10

## Business Model Framework Validation

*It's what you learn after you know it all that counts.*

- John Wooden

### 10. Business Model Framework Validation

This chapter will validate the Business Model Framework by means of case studies to determine whether the Framework is suitable to clarify real-life scenarios and not only theoretical cases. The Business Model Framework's primary goal is to **define** a business model and in so doing establish an improved **understanding** of the business model.

Mouton (2001) writes that case studies are ideal for "*studies that are qualitative in nature*" and that require an "*in-depth description of a smaller number of cases*". Case studies are suitable especially when studying business-related studies (*i.e.* companies or organizations). One of the strengths of case studies as a means of validation is that it allows an in-depth and holistic view to a real-life phenomenon (Maree, 2007). It also allows links and commonalities to be identified throughout a number of cases (Maree, 2007). This will help with validating whether the Business Model Framework is generic and also to show the different strategic business & innovation management principles of Two-Sided Markets.



Mouton (2001) and Maree (2005) agree that case studies are incapable of generalizing a specific phenomenon or concept, especially if only one case is studied. To counteract this limitation that case studies pose it was decided to study four different cases.

Evans and Schmalensee (2005) identified four different types of Platforms. A real-life case study will be done on each type of Platform. Four successful companies' business models will be considered. Four case studies will be done to validate the Framework.

The four different Platforms that were identified by Evans and Schmalensee (2005) are:

- 1) Exchanges,
- 2) Advertising-Supported Media,
- 3) Transaction Systems, and
- 4) Software Platforms.

The four respective case studies will consider the four different Platform types listed above. Each one of the case studies will consider a leading world-class company of each Platform type. See Table 32 for a clear description of the four different types of Platforms and the respective corresponding company case studies.

*Table 32 - Four Different Types of Platforms and Corresponding Validation Case Studies*

<b>Platform Type</b>	<b>Case Study Company</b>	<b>Business Unit</b>
Exchange	Apple Inc.	iTunes Store
Advertising-Supported Media	Google Inc.	Web search engine and AdWords
Transaction System	Visa Inc.	Credit cards
Software Platform	Microsoft Corp.	Microsoft Windows

Apple Inc. serves a Two-Sided Market via their iTunes Store as an Exchange Platform. Apple's iTunes Store business unit will be analysed by applying the Two-Sided Market Business Model Framework to their iTunes Store business model. A comprehensive case study will be done on Apple's iTunes Store business model seeing that they are the most valuable company in the world. To better understand their business model dynamics and strategy an in-depth and comprehensive case study will be done.

Google Inc. offers a web search service and advertising Platform to web searchers and business advertisers, respectively. A condensed case study will be done on their Google search engine and AdWords business model combination because it is a simple business model. Google's web search and AdWords business model is an Advertising-Supported Media Platform.

Visa Inc. runs the world's largest and most successful Transaction System Platform. A comprehensive case study will be done on their credit card business model. It was decided to do a comprehensive case study to show that the Business Model Framework is generic to all Two-Sided Market business models – even the most complex ones. Visa's credit card business model is relatively complex because of all the participating parties in the value chain ecosystem. This chapter will validate whether the Two-Sided Market Business Model Framework will be able to define their credit card business model and ultimately bring an enriched understanding of the business model dynamics.

Microsoft Corp. owns the world's most utilized and widely operated computer operating system – *Microsoft Windows*. Microsoft's Windows computer operating system is a Software Platform. The two distinct groups of users that Microsoft serve that forms their Two-Sided Market is Windows operating system users and software developers. This will be expounded on when the case study is done. It was decided to do a condensed case study on Microsoft's Windows business model because it is relatively simple compared to the other case studies that will be undertaken.

Apple's iTunes Store and Visa's credit card business models will be studied in-depth – a comprehensive case study of each will follow in this chapter. Google's web search and AdWords business model as well as Microsoft's Windows business model will only be investigated shortly because these two business models are relatively simple.

It is important to undertake all four business model case studies to show that the Two-Sided Market Business Model Framework is generic when analysing different business models. The Two-Sided Market Business Model Framework allows defining different business models from different industries and of different ages. To make the Framework generic was one of the major requirements.

This chapter will also show **how** the Business Model Framework is used when analysing business models. The outcome is not to identify business model innovation but merely to define the business model and hence establish an improved understanding of the business model dynamics.

The Key Activities, Key Resources & Key Partners building blocks will not be investigated in that much depth. The fundamental differences between One-Sided and Two-Sided Market business models are that one serves only one market and the other serves two. Also, the one utilizes Network Effects and the other does not. Because of these two elements the Key Activities, Key Resources & Key Partners building blocks will not be investigated in that much depth because the Key Activities, Key Resources & Key Partners building blocks are fundamental to both One-Sided and Two-Sided Market business models.

After the case studies have been done a section will be devoted to revising and bring about adjustments to the Business Model Framework. If any shortcomings or flaws are identified throughout the case studies these deficient elements will be adjusted in the Business Model Framework revision section.

The four case studies will be done in this section. The relevant business models will be analysed via means of the Business Model Framework. Each building block with its according internal dynamics will be applied to the respective case studies. The sequential building block development order will be used to bring about a rational flow that will be consistent throughout all four case studies. This chapter of undertaking the four case studies will also serve as a means to show how the Business Model Framework is used and how it serves to define and bring about understanding of different Two-Sided Market business models.

## 10.1 Exchange Platform Case Study: Apple iTunes Store Business Model

In 1976 Apple Computers<sup>45</sup> was founded by Steve Jobs and his partner, Steve Wozniak, in a garage. Today Apple has gone on to be the most valuable company in the history of the world. In November of 2014 Apple became the first and only company to surpass a market cap of \$700 billion, the only company to reach a market capitalization of more than \$700 billion ever.

In the last quarter of 2014 Apple also reported the biggest profit in corporate history of the world – just over \$18 billion. They sold 34 000 iPhones an hour on average from October to December (the last quarter of 2014) which helped boost these amazing financial figures.

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<sup>45</sup> The word ‘*Computer*’ was dropped in 2007 to reflect Apple’s expansion from the personal computer to consumer electronics in general (Rothaermel, 2014).

The question that should be asked is how does Apple manage to generate this tremendous amount of revenue? Is it purely through their technological product innovation (iPhones, iPads, iPods, Macs, etc.) or is there more than meets the eye to the tech giant's success? Johnson (2010) believes that there is more to Apple's great success than just technological product innovation, he says that:

*Apple did something far smarter than take a good technology and wrap it in a snazzy design. It took a good technology and wrapped it in a great business model.*

Next to Apple's tangible products (iPhones, iPads, iPods, Macs, etc.) their greatest and most successful value offering is that of the iTunes Store. Apple generated earnings of \$4.2 billion through their iTunes Store business unit in the last quarter of fiscal 2014, the biggest revenue next to their physical product offerings.

Without the iTunes Store Apple will just be a tech company that offers cutting-edge technology products. The technology will be state-of-the-art but how much value will it offer without the iTunes Store? It is hard to answer this question without predisposition. This case study will use the Business Model Framework to clarify just how Apple's iTunes Store business model functions.

The iTunes Store value proposition serves a Two-Sided Market – iTunes users and music publishers. This section will investigate Apple's iTunes Store business model to bring more clarity to the matter.

#### 10.1.1 Apple iTunes Store as an Exchange Platform

An Exchange Platform consists of Users/Consumers and Suppliers/Developers. The Exchange Platform assists Users/Consumers and Suppliers/Developers to search for feasible matches via the Platform. Feasible matches involve a transaction where the offerings to both are mutually beneficial.

In Apple's iTunes Store's instance iTunes users act as Users/Consumers and music publishers act as Suppliers/Developers. The iTunes Store is the Exchange Platform where iTunes users search for music. Whenever successful transactions are made Apple receives royalties (a share of the price paid) from the music publishers, and the rest goes to the music publishers.

The iTunes Store acts as an Exchange Platform. It might seem basic but the Framework will bring more clarity to Apple's iTunes Store business model. The Business Model Framework case study will establish a deeper and clearer understanding of the iTunes Store value creation method.

#### 10.1.2 Short History of the iTunes Store

Apple introduced the iPod in October 2001. The celebrated iPod is a portable digital music player based on the MP3 music format. Soon afterwards, in April of 2003 Apple launched the iTunes Store as a complementary value offering to the iPod. iTunes was the first online music store where iTunes users could buy songs for \$0.99 each instead of buying whole albums or downloading songs illegally. Within the first three days after launching the iTunes Store iTunes users bought over one million songs.

Today Apple's iTunes Store is fundamental to their greater business model generating the most money from Apple's non-tangible product range. In the last quarter of fiscal 2014 the iTunes generated earnings of just over \$4.2 billion (10% of the total earnings – \$42.1 billion) which left them with a quarterly net profit of \$8.5 billion.

#### 10.1.3 Value Chain Structure of the iTunes Store Business Model

Before going on to applying the Framework to the iTunes Store a quick analysis will be done to look at the iTunes Store value chain structure. This will give clarity to the customer experience and transparency to the value chain structure of the iTunes Store.

This will also ensure that a degree of objectivity is installed and maintained before going on to applying the Framework to Apple's iTunes Store business model.

Figure 34 shows the value chain structure of the iTunes Store. Note that the dotted blue line signifies value chain connections and the dashed green line indicates the Financial Viability connections.

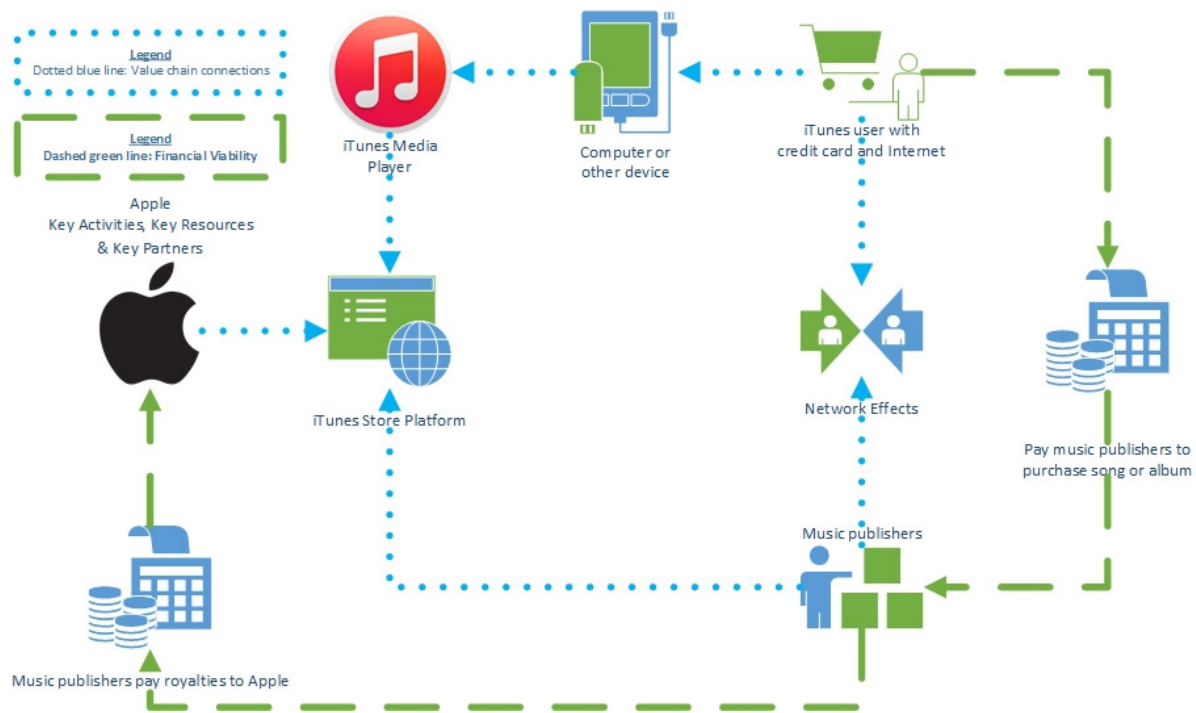


Figure 34 - Apple iTunes Store Value Chain Structure

The three role-players in the value ecosystem is Apple, iTunes users and music publishers. Each gathers value from the Two-Sided Market value chain:

- Apple   Monetary royalties from music publishers
- iTunes users                                        Buy music from music publishers
- Music publishers                                 Sell music to iTunes users

Apple owns the iTunes Store Platform and offers the iTunes media player for free to iTunes user. iTunes users access the iTunes Store via the iTunes media player. iTunes users need a computer or other device, Internet and a credit card to sign-up to the iTunes Store.

Music publishers publish their music to the iTunes Store music database which is accessible by iTunes users via the iTunes media player.

iTunes users buy music via the iTunes media player and pay music publishers. Music publishers then pay royalties to Apple per song or album sold. This is how Apple generates revenue.

Apple offers more than just cutting-edge technology products, they have revolutionized the music industry with their iTunes-iPod combination, but just how exactly did they structure their business model?

Now that a simplified explanation of the iTunes Store business unit has been done the next chapter will apply the Framework to the Apple iTunes Store business model. A comprehensive case study analysis follows.

The next section will analyse the iTunes Store through means of the Two-Sided Market Business Model Framework. The Business Model Framework will serve as spectacles through which the iTunes Store business model will be viewed.

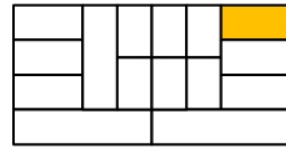
#### 10.1.4 Applying the Framework to the Apple iTunes Store

Although a graphic framework was developed that makes the business model analysis simple and lean this section will rely on descriptive and explanatory methods to better understand the respective Two-Sided Market Business Model Framework building blocks of the iTunes Store. Each building block will be analysed in the sequential building block development order (see section 9.2.4 on page 189).

##### *10.1.4.1 Market 1: iTunes Users*

Market 1 of the iTunes Store business model is iTunes users that buy music from iTunes. The analysis of the internal dynamics of iTunes users follow.

## MARKET 1: iTunes users



### Need

What does the market need?

### User/Consumer vs. Supplier/Developer

User/Consumer  Supplier/Developer

### Price-Sensitivity

Low  High

### Quality vs. Quantity

Quality  Quantity

### Subsidy-Side vs. Money-Side

Subsidy-Side  Money-Side

### Single-Homing vs. Multi-Homing

Single-Homing  Multi-Homing

### Sign-Up, Switching, Multi-Homing and Exit Costs

Time  
Money  
Learning  
Effort

### Marquee users

Which users should especially be targeted?

iTunes users make up the Market 1 building block. iTunes users have a very simple need: they want **easy access to affordable music**. They want more than just songs, they want accessibility to listen music as well. Apple has developed an assisting media player, the iTunes media player, which acts as a complementary good to simplify accessibility. The iTunes media player allows accessibility to buying and listening music.

The iTunes users market is the User/Consumer side of the Two-Sided Market. They buy (consume) songs published by music publishers (Market 2).

Because Apple serves such a vast number of iTunes users it is hard to say how price-sensitive the market is but it can be concluded that they have a higher price-sensitivity than Market 2, music



publishers. One of Apple's competitive advantages is the pricing of the songs and the fact that access to the iTunes Store is free, this has greatly contributed to the success of the iTunes Store, the fact that Apple beats other music offering prices. This strategy that accommodates for price-sensitive users is a great incentive for iTunes users to join the installed base.

The iTunes users market is a Quantity market. The more iTunes users there are the more value gets added to the Platform, both for Apple and music publishers.

The iTunes users market is a Money-Side market. The iTunes users have free access to the iTunes Store but they need to pay in order to get access and ownership of songs.

Ideally Apple wants iTunes users (Market 1) to be a Single-Homing Side. Some music listeners make use of the iTunes Store as well as other music sources (*i.e.* record stores, illegal music downloads, online record sales, *etc.*) to attain music but it will benefit Apple more should music listeners only rely on the iTunes Store to attain music. The majority of Market 1 is Single-Homing.

Apple has structured their sign-up, switching, multi-homing and exit costs in such a way that they are interconnected to a great sense. To sign-up for the iTunes Store requires an Apple ID (a username and password that acts as an account). The adoption requires little time and no money. The operation requires little time and some money. The incentive to sign-up is reduced prices to pay for songs.

For users to switch from conventional music library management, listening to music from records that were bought, to iTunes requires some time, little learning and no money. All users need to do is import music from records to the iTunes media player. All the record names and album artwork gets imported as well. This simplifies music management significantly and acts as an incentive to adopt iTunes.

To multi-home is not really an option for iTunes users because buying old records instead of buying from the iTunes Store does not make sense when considering it purely from a price aspect – iTunes beats most record and song prices. The only reason that iTunes users will also consider buying from other music sources would be because they are either loyal towards that specific music channel or they have sentiment for tangible records and they value owning the record.

The exit costs that iTunes users have to undergo are quite high. They will lose their music library and the ease of managing their music via the iTunes media player.

10.1.4.2 Market 2: Music Publishers

Market 2 of the iTunes Store business unit is music publishers. It is record companies making music available for iTunes users to buy. The analysis of the internal dynamics of music publishers follows.

## MARKET 2: Music publishers


**Need**  
What does the market need?

**User/Consumer vs. Supplier/Developer**  
 User/Consumer       Supplier/Developer

**Price-Sensitivity**  
 Low       High

**Quality vs. Quantity**  
 Quality       Quantity

**Subsidy-Side vs. Money-Side**  
 Subsidy-Side       Money-Side

**Single-Homing vs. Multi-Homing**  
 Single-Homing       Multi-Homing

**Sign-up, switching, multi-homing and exit costs**  
 Time  
 Money  
 Learning  
 Effort

**Marquee users**  
Which users should especially be targeted?

Music publishers have a very simple need: they want **an audience to sell their music to**. They want more than just a Platform to put their music on, they demand sales. The iTunes Store allows this and

therefore they are willing to give royalties to Apple because they have access to the iTunes users market via the Platform.

The music publishers market is the Supplier/Developer side of the Two-Sided Market. They publish (supply) songs via the iTunes Store.

Music publishers are less price-sensitive than iTunes users. Music publishers will consider any channel where they can sell their music. The iTunes Store is an excellent fit for selling their music and therefore do not hesitate to agree to the terms of selling music via the iTunes Store which means giving royalties to Apple. The pricing model will not be discussed now, only later on when those building blocks are considered.

The music publishers market is a Quality market. It is important that the music published is of good quality otherwise iTunes users will not consider buying the songs or albums.

The music publishers market is a Money-Side market. The music publishers pay royalties to Apple per song or album that is bought from the iTunes Store.

Ideally Apple wants music publishers to be a Single-Homing side. This would mean that music publishers only sell their music via the iTunes Store. This would mean that in order to get hold of certain records music buyers would only be able to access this specific music from the iTunes Store, but this is not the case. Music publishers sell their music across various channels (IFPI, 2015):

- Physical format sales,
- Digital revenues,
- Performance rights, and
- Synchronisation revenues.

This means that the music publishers market is a Multi-Homing side.

The sign-up costs for music publishers comprise of time, money and effort costs. Legislation and agreements are put in place that requires music publishers to pay these sign-up costs.

The switching costs are not relevant because music publishers do not typically leave another Platform for the iTunes Store Platform.

The multi-homing costs requires time, money and effort from the music publisher's side. When music publishers sign-up to publish their music on the iTunes Store they need to put certain processes and infrastructure in place that will ensure that their music gets published on the iTunes Store.

The exit costs that music publishers have to undergo are insignificant.

Apple needs to get the big record companies on board to publish their music on the iTunes Store. This will encourage smaller record companies to get on board as well. The market leaders also have the power to drive the music industry in a certain direction, this is exactly what happened. The big players in the music publishing industry agreed to publish their music on the iTunes Store and this revolutionized the music industry forever.

The marquee users are typically (Statista, 2015):

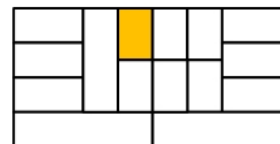
- EMI,
- Warner Chappel,
- Sony / ATV, and
- Universal.

They comprise the big four music publishers globally. Having them on board would benefit Apple significantly.

#### *10.1.4.3 Value Proposition 1: Accessible, Affordable Music Listening*

The Value Proposition offered to Market 1, iTunes users, is accessibility to listen to affordable music. iTunes users want **easy access to affordable music** – that is exactly what Apple has offered since they launched the iTunes Store.

## VALUE PROPOSITION 1: Accessible, affordable music



### **Bundling**

What Bundling opportunities exist?

- Offer similar value propositions as competitors.
- Offer similar or extra value propositions in addition to the existing value propositions.

Apple has developed the **iTunes media player** that allows users to upload music from CDs and watch music videos from. The iTunes media player also acts as a music management system where users organize their music library and devices such as their iPods, iPhones and iPads from. This serves as a Bundling offering because users have stopped using other media players such as:

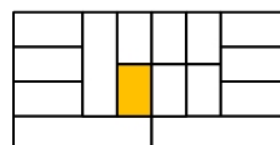
- Windows Media Player,
- WinAmp,
- QuickTime Player and
- VLC.

Because multi-homing media players requires too much time, users therefore utilizes only the iTunes media player because it simplifies music management.

### *10.1.4.4 Value Proposition 2: Audience of Music Enthusiasts Willing to Buy Music*

Market 2, music publishers, gets offered an audience of music enthusiasts that are willing to buy affordable music from them.

## VALUE PROPOSITION 2: Audience of music enthusiasts



### **Bundling**

What Bundling opportunities exist?

- Offer similar value propositions as competitors.
- Offer similar or extra value propositions in addition to the existing value propositions.

Apple offers an audience of music enthusiasts that are willing to buy affordable music from music publishers. This is similar to other music buying market segments and channels that are also willing to buy music from music publishers.

Apple has executed their iTunes Store business model so successfully that the recording industry's global revenues for 2014 came primarily from two revenue streams: physical format sales (46%) and digital revenues (46%) (see Table 33). Apple falls under the digital revenues category and contributed a significant share of the digital revenues. Apple has opened up a whole new Platform from where music publishers can sell their music.

*Table 33 - Recording Industry's Global Revenues for 2014*

*(Source: IFPI, 2015)*

<b>Global revenue streams</b>	<b>Examples</b>	<b>Percentage</b>
Physical format sales	CDs, DVDs, vinyls <i>etc.</i>	46%
Digital revenues	Download sales, subscription services, <i>etc.</i>	46%
Performance rights	Concerts, broadcast, radio, <i>etc.</i>	6%
Synchronization revenues	TV adverts, films, brand partnerships, <i>etc.</i>	2%

A study done by IFPI<sup>46</sup> showed that 68% of internet users are aware of iTunes, coming in second after YouTube where 84% of internet users are aware of YouTube's music and music videos services. Note that YouTube is offered for free while the iTunes Store sells music at a subsidized price. See Table 34 for the top licensed music services and the corresponding percentage of Internet users that are aware of these music services. Apple offers exposure for music publishers to a significant share of the Internet population.

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<sup>46</sup> <http://www.ifpi.org>

Table 34 - Awareness of Licensed Music Services

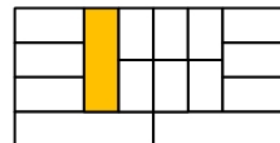
(Source: Ipsos Media CT, 2015)

Music Service	% of Internet Users Aware of Music Service
YouTube – For music / music videos	84%
Paying to download music from iTunes	68%
Spotify	62%
AmazonMP3	57%
VEVO – For music / music videos	41%
Deezer	28%

10.1.4.5 Platform: The iTunes Media Player

The online iTunes Store is accessed via the iTunes media player. The iTunes media player acts as the Platform to the iTunes Store business model. The iTunes media player is developed by Apple and offered for free to all iTunes users.

## PLATFORM: iTunes Media Player



### Platform Type

Which Platform opportunities exist that should be exploited?

Exchange

Does any matchmaking opportunities exist? Can the Platform serve as a connecting network?

Advertising-Supported Media

Does any advertising opportunities exist? Does the installed base offer readership?

Transaction System

Does the Platform offer transaction opportunities? Can the Platform serve as a bidding or trading platform?

Software Platform

Does any opportunities exist to offer exclusive access?

### Transaction or Non-Transaction Platform

Transaction

Non-Transaction

### Platform Limitations

- Size
- Maintenance
- Congestion
- Scalability

- **Exchange**

The iTunes Store business unit is an **Exchange** Platform primarily. Apple matches music enthusiasts with music from music publishers. Although Apple is classified as an Exchange Platform by leading authors (Eisenmann, *et al.*, 2006; Evans & Schmalensee, 2005; Parker & Van Alstyne, 2005) they also incorporate the beneficial opportunities of the other three types of Platforms as will be seen below.

- **Advertising-Supported Media**

Because Apple owns the Platform that has millions of users on board they have a captive audience that offers readership. Apple utilizes this installed base of users and sells their readership to advertisers through their iAd<sup>47</sup> value offering. Advertisers pay Apple to market through the iTunes media player on their radio channels, news channels and other channels. This adds to a great list of revenue streams that is generated by Apple's business model.

- **Transaction Systems**

Apple launched Apple Pay<sup>48</sup> in October 2014. They utilised their gigantic following of installed base users that already owns Apple devices to make use of their exclusive transaction system. This, once again, generates another revenue stream for the tech giants.

- **Software Platforms**

The iTunes Store business model does not conform to typical Software Platform principles but they have utilised these Platform type principles to offer **exclusive access** to users that own Apple devices. To get the most from the iTunes media player value offering it is best to own an Apple device. Maximum value can be extracted if an iTunes user owns an Apple device. This once again generates another revenue stream for Apple.

Although Apple is primarily an Exchange Platform they utilize all four advantageous Platform opportunities that are offered by the four different types of Platforms. This is not often that Intermediaries are able to successfully execute this. This might be the reason for Apple's tremendous success.

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<sup>47</sup> <http://advertising.apple.com>

<sup>48</sup> <http://www.apple.com/apple-pay>



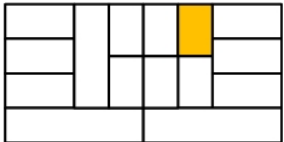
The iTunes media player also acts as a transaction Platform, but not primarily. Transactions are done via the Platform although the Platform is not a Transaction System Platform.

The iTunes media player as a Platform does not have any notable limitations that can limit the Value Propositions offered to the Two-Sided Market.

10.1.4.6 Complementary Goods 1

Market 1, iTunes users, rely on certain goods to access the Platform and derive value from the value propositions offered by Apple via the iTunes Store.

## COMPLEMENTARY GOODS 1



**Value-Enabling vs. Value-Exceeding**

Value-Enabling (Minimum Requirement)

Value-Exceeding

**Providers**

Self-Providing

Strategic Partners

Basic Providers

**Availability, Accessibility and Affordability**

- Availability
- Accessibility
- Affordability

There are multiple complementary goods that are required for iTunes users to access the Platform.

- **Computer or other media device**

iTunes users need a computer or media device (such as an iPhone, iPod or iPad) to play music on. A computer or other media device is a minimum requirement to access the Platform.

- Value-Enabling (Minimum Requirement)                       Value-Exceeding

A computer or media device is Value-Enabling. It merely enables iTunes users to extract the basic value offered by the iTunes Store.

Self-Providing

Strategic Partners

Basic Providers

Computers and other media devices that are minimum requirements to access the iTunes Store are offered by both Apple themselves (self-providing) and by other basic providers that manufacture and sell computers and media devices. Apple manufactures and sells iPhones, iPods, iPads and Macs (computers) that are Value-Enabling complementary goods to the iTunes Store. Through selling these complementary goods Apple generates yet another revenue stream.

- **Internet**

iTunes users require Internet to access the iTunes Store. The availability, accessibility and affordability of Internet is relatively good although it is subject to geographical locations (*i.e.* it is country and location specific).

Value-Enabling (Minimum Requirement)

Value-Exceeding

Internet is a Value-Enabling complementary good. It does not enable users to exceed the minimum value that can be derived from the value offerings. It is a minimum requirement to access the Platform.

Self-Providing

Strategic Partners

Basic Providers

Internet is provided by basic providers. Apple does not provide Internet and they also do not have any strategic partners that provide Internet with whom they have mutually beneficial partnerships.

- **Credit card**

iTunes users are also in need of credit cards to buy songs or to buy iTunes Store credit in order to buy songs.

Value-Enabling (Minimum Requirement)

Value-Exceeding

A credit card is also Value-Enabling. It enables iTunes users to buy from the iTunes Store, it does not allow users to exceed the minimum value proposition offered by the iTunes Store.

Self-Providing

Strategic Partners

Basic Providers

Apple does not provide credit cards nor do they have strategic partners that provide credit cards with whom they have agreements. Basic providers offer credit cards that enable iTunes users to access the value offered by the iTunes Store.

Market 1, iTunes users, does not have a value offering above and beyond the minimum offering of buying music from the iTunes Store. Buying music from the iTunes Store is enabled by owning the three complementary goods mentioned above:

- Computer or other media device
- Internet
- Credit card

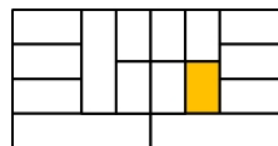
These three complementary goods are fundamental to iTunes users in order for them to derive the minimum value from the iTunes Store.

#### *10.1.4.7 Complementary Goods 2*

Apple prescribes minimum requirements to music publishers that want to sell via the iTunes Store (Apple, 2015). If they do not meet the minimum requirements they have an option to sell via approved aggregators (Apple, 2013). Aggregators are third parties that can help music publishers meet technical requirements. These technical requirements include delivering and managing content as well as assisting with marketing efforts.

Market 2, music publishers, therefore do not have any significant complementary goods worth mentioning that are required that will withhold them from publishing music on the iTunes Store.

## COMPLEMENTARY GOODS 2



### Value-Enabling vs. Value-Exceeding

- Value-Enabling (Minimum Requirement)
- Value-Exceeding

### Providers

- Self-Providing
- Strategic Partners
- Basic Providers

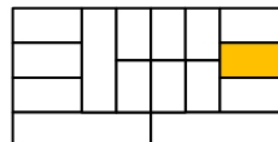
### Availability, Accessibility and Affordability

- Availability
- Accessibility
- Affordability

### 10.1.4.8 Network Effects

Apple’s success with the iTunes Store can be ascribed to the Positive Network Effects that are present amongst the Two-Sided Market.

## NETWORK EFFECTS



### Cross-Side vs. Same-Side Network Effects

- Cross-Side
- Same-Side

### Positive vs. Negative Network Effects

- Positive
- Negative

- Increased adoption by iTunes users: Positive Cross-Side Network Effects

- Cross-Side
- Same-Side

- Positive
- Negative

Increased adoption by iTunes users leads to an increased installed base of music enthusiasts willing to buy music from music publishers. These Positive Cross-Side Network Effects lead to increased sales of music and ultimately increased revenue for Apple and music publishers

- **Increased adoption by music publishers: Positive Cross-Side Network Effects**

Cross-Side                       Same-Side

Positive                               Negative

Increased adoption by music publishers leads to a greater variety of music offered to iTunes users. These Positive Cross-Side Network Effects benefit iTunes users.

- **Increased adoption by music publishers: Negative Same-Side Network Effects**

Cross-Side                       Same-Side

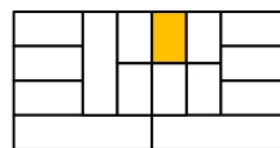
Positive                               Negative

The competition gets fiercer as more music publishers get on board. This might be disadvantageous to music publishers although it protects iTunes users.

#### *10.1.4.9 Pricing Model 1*

Pricing Model 1 explains the logic behind prices requested by Apple to iTunes users.

## PRICING MODEL 1



### Initial vs. Future Pricing Model

Initial Pricing Model

Future Pricing Model

### Profit-Minimization vs. Profit-Maximization Pricing Model

Profit-Minimization

Profit-Maximization

### Pricing Model Elements

Joining fees

Fixed recurring fees

Usage fees

Freemium

Trial Accounts

Free Credit

Royalties

Subsidy-pricing

- Initial Pricing Model

Apple started selling songs for \$0.99 and albums for \$9.99 when they first launched the iTunes Store on 9 January 2001.

- Future Pricing Model

As the iTunes Store grew and evolved Apple decided to launch different pricing tiers for songs. Apple changed their prices in January 2006, 5 years after launching the iTunes Store. Apple did this because of pressure from music publishers that requested and said that songs are able to sell at higher prices, hence the pricing model changed.

Apple have separate prices that differ for individual songs and albums. Table 35 explains.

*Table 35 - Prices Requested by Apple since January 2006*

*(Sources: CNN Money, 2009)*

Item	Price Requested
Individual song	\$0.69, \$0.99, \$1.29
Album	\$9.99

Apple charges \$0.69, \$0.99 or \$1.29 for individual songs.

The Pricing Model for Market 1, iTunes users, can be reasoned that it is Profit-Maximizing or Profit-Minimizing. In the case that it is Profit-Maximizing it will be assumed that iTunes users pay a share of the price to Apple and the rest to music publishers.

In the case that it is Profit-Minimizing it will be assumed that iTunes users pay all the money to music publishers and music publishers pay royalties to Apple for being granted access to the Platform, the iTunes Store.

Pricing Model 1 will be assessed as being Profit-Minimizing. This will assume that iTunes users receive free access to the iTunes Store via downloading the iTunes media player for free and ultimately buying from music publishers via the Platform. Music publishers pay royalties per song or album sold to Apple which makes this a Profit-Minimizing Pricing Model on Market 1's side.

The Pricing Model for Market 1, iTunes users, can be seen as subsidy-pricing because, as mentioned earlier, it is assumed that Pricing Model 1 is Profit-Minimizing. Pricing Model 2 that will be explained next will make it clearer.

#### *10.1.4.10 Pricing Model 2*

Apple's Initial and Future Pricing Model has not changed significantly (Knopper, 2011). For every song sold music publishers pay Apple 30% of the item sold.

## PRICING MODEL 2


### Initial vs. Future Pricing Model

Initial Pricing Model

Future Pricing Model

### Profit-Minimization vs. Profit-Maximization Pricing Model

Profit-Minimization

Profit-Maximization

### Pricing Model Elements

Joining fees

Fixed recurring fees

Usage fees

Freemium

Trial Accounts

Free Credit

Royalties

Subsidy-pricing

The Pricing Model for Market 2, music publishers, is Profit-Maximizing. Apple generates the majority of their iTunes Store business model's revenue from royalties received from music publishers.

The Pricing Model element for Market 2, music publishers, consists of **royalties**. Music publishers pay royalties to Apple for every song sold.

#### 10.1.4.11 Key Activities, Key Resources & Key Partners

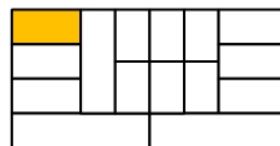
Key Activities, Key Resources & Key Partners will not be investigated because these building block analyses can become very long. Also, analysing these building blocks are irrelevant to validating the Business Model Framework. These three building blocks were identified and taken from The Business Model Canvas. Because it is a fundamental part of The Business Model Canvas and has already been validated in that business model framework it will not be validated again in this validation cycle.

These three Infrastructure building blocks are considered validated and relevant to the Two-Sided Market Business Model Framework.



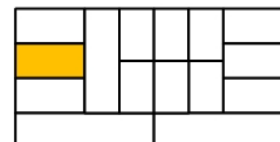
## KEY ACTIVITIES

What Key Activities do we need to perform to deliver the Value Propositions via the Platform to Market 1 and Market 2?



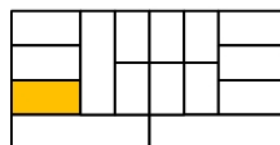
## KEY RESOURCES

What Key Resources do we need to perform the Key Activities?



## KEY PARTNERS

What Key Partners do we rely on to perform Key Activities or provide Key Resources?



### Strategic Complementary Goods Providers

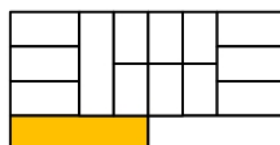
With which Key Partners do we have a strategic agreement to provide Complementary Goods?

### 10.1.4.12 Cost Structure

The Cost Structure building block of Apple's iTunes Store business model looks as follows:

## COST STRUCTURE

Which building blocks incur what Costs?



### Pricing Model Costs (Subsidy-Pricing)

What Costs do the Pricing Models incur?

### Incremental Costs Per User

What are the incremental costs per user that gets on board?

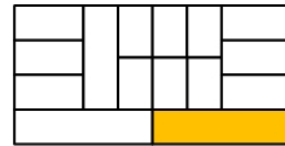
Pricing Model 1 consists of subsidy-pricing and Apple therefore takes these costs upon themselves.

Incremental costs per user for both sides of the Two-Sided Market is insignificant and does not impose any substantial costs on Apple.

## 10.1.4.13 Revenue Streams

**REVENUE STREAMS**

Which building blocks generate Revenue Streams?  
 What are these Revenue Streams?  
 Are there additional Revenue Stream opportunities?

**Pricing Model Revenue Streams**

What Revenue Streams do the Pricing Models generate?

There is one revenue stream generated by Pricing Model 2 – **royalties from music publishers** to Apple.

Apple has also structured their business model in such a way that they generate significant revenue streams in addition to the royalties received from music publishers.

- **iAd - Advertising-Supported Media Platform**

Apple's iAd service which gives a platform for advertisers to market on the iTunes Store generates a revenue stream. iAd acts as an Advertising-Supported Media Platform although they are primarily an Exchange Platform.

- **Apple Pay - Transaction Systems Platform**

Apple's wholly-owned Transaction System, Apple Pay, allows users to buy music on the iTunes Store via this payment gateway which generates another revenue stream for Apple. Apple takes a cut of the amount paid via the Apple Pay payment gateway.

- **Computer or other media device – Self-Providing Complementary Goods 1**

Apple offers complementary goods that are required by Market 1, iTunes users. These complementary goods are iPhones, iPods, iPads and Macs (computers). Through selling and integrating their hardware as complementary goods to the iTunes Store experience strengthens not only their revenue streams but also their business as a whole.

Apple has managed to incorporate their other business units (hardware) into their iTunes Store business unit. In so doing Apple generates significant revenue streams which has catapulted them from a \$300 billion company in 2011 to a \$700 billion company in 2014. Since 2000 they have nearly grown 120-fold (Kopytoff, 2015).

#### *10.1.4.14 Winner-Takes-All Requirements*

The winner-takes-all requirements are:

- 1) Multi-homing costs and/or switching costs are high for at least one user side,
- 2) Network Effects are positive and strong at least for the side with high multi-homing costs,  
and
- 3) Neither sides have a strong preference for special features.

#### **Winner-takes-all requirement number 1**

Market 1, iTunes users, qualifies for this requirement because of the multi-homing costs and switching costs that is structured in such a way that iTunes users choose to stay aboard the iTunes Platform.

#### **Winner-takes-all requirement number 2**

Market 1 does experience relatively high Network Effects which makes it qualify for this requirement as well.

#### **Winner-takes-all requirement number 3**

Neither sides have a strong preference for special features. iTunes users want affordable and accessible music while music publishers want a market to sell their music to.

The iTunes Store business model ticks off all of the winner-takes-all requirements. This can be a reason that has led to Apple's tremendous success.

#### 10.1.5 Apple iTunes Store Case Study Conclusion

Apple's business as a whole is exceptional in the true sense of the word. The Two-Sided Market Business Model Framework assisted in analysing Apple's business model of their iTunes Store business unit – the way they create value for themselves and the Two-Sided Market consisting of iTunes users and music publishers.

Apple has managed to establish various revenue streams from different building blocks in their business model. They executed it with excellence.

No significant flaws or shortcomings were identified regarding the Two-Sided Market Business Model Framework.

#### 10.2 Advertising-Supported Media Platform Case Study: Google Search Engine and AdWords Business Model

Advertising-Supported Media Platform markets are universal. From newspapers and magazines to television and web portals. Advertising-Supported Media Platform makes most of their money from advertisers (the Money-Side, Suppliers/Developers) and subsidizes readers that offer readership (Subsidy-Side, Users/Consumers).

Google is questionably one of, if not the most, successful Advertising-Supported Media Platform in the world. Through the Google search engine that they offer for free to millions of users online they are able to create an audience that offers readership which they offer via their Platform to business advertisers.

##### 10.2.1 Short History of Google's Search Engine and AdWords

Google founders, Larry Page and Sergey Brin, met at Stanford University in 1995 when they were just 22 and 21 years old, respectively. They started working together at university in 1996 on a search engine called BackRub. BackRub operated on Stanford servers for more than a year – eventually taking up too much bandwidth.

Google.com was registered on 15 September 1997. Google, a play on the word 'googol', a mathematical term for the number represented by the numeral 1 followed by 100 zeros reflects Larry and Sergey's mission to organize a seemingly infinite amount of information on the web.

On 4 September 1998 Google filed for incorporation in California. Google launched AdWords only a few years later after multiple rounds of fundraising and investments. Google was offered the Google search engine in 15 languages globally. AdWords was launched with 350 customers.

AdWords gives businesses the opportunity to sign-up and load credit to their profile accounts. When web browsers use Google's search engine and requests a query that matches that of the business signed up with Google web browsers have the opportunity to click on the result given by Google at the top of the search results. Whenever a web browser clicks on the link offered by Google at the top of the search results money is subtracted from the business' credit and paid to Google – hence Pay-Per-Click<sup>49</sup> pricing model.

10 years after Google's introduction of AdWords and after multiple new value offering introductions to their impressive catalogue of products, Google still generates more than 96% their revenue from advertising related media, and the majority of that through AdWords (Kiss, 2010). In the fourth quarter of Google's 2014 fiscal year 68% of Google's revenue was generated from advertising related media (Google, 2015).

#### 10.2.2 Value Chain Structure of the Google AdWords Business Model

Google offers their revolutionary web search engine to millions of web browsers for free. This gigantic installed base of active users that use the Google search engine generates endless amounts of search queries. Google returns unique search results for each search query. Businesses can benefit and have the opportunity to get their website link posted at the top of the search results when they sign-up with Google's AdWords service.

Businesses load credit to their profile accounts and whenever their website link is returned for a relevant search query to the web browser and the web browser decides to click on their link money gets paid from their AdWords account to Google.

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<sup>49</sup> In February 2002 Google launched the Pay-Per-Click pricing to AdWords.

Figure 35 offers a structured depiction of the Google AdWords value chain. Note that the dotted blue line signifies value chain connections and the dashed green line indicates the Financial Viability connections.

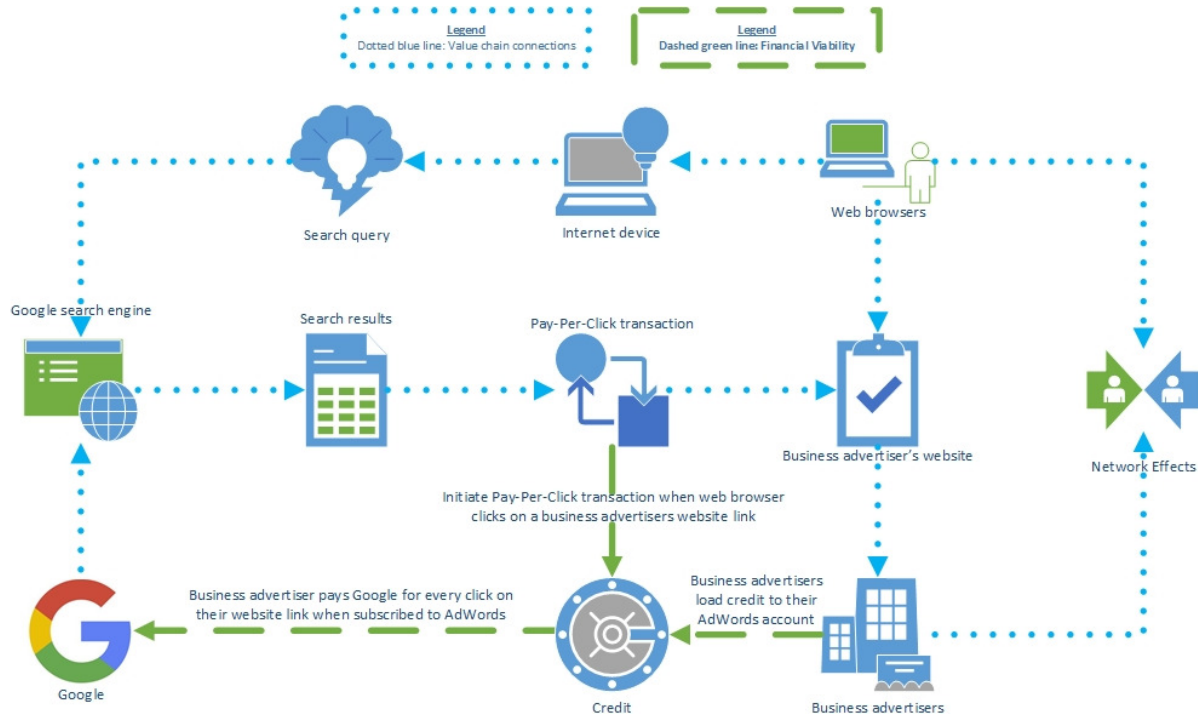


Figure 35 - Google AdWords Value Chain Structure

The three parties participating in the value chain ecosystem and the value they gain are:

- Google                                      Monetary value (Pay-Per-Click pricing)
- Web browsers                              Simplified web searching experience
- Business advertisers                      Website traffic and exposure

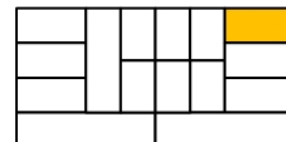
Ultimately business advertisers want web browsers to access their website and interact with what they have to offer. Some businesses do it purely for marketing exposure.

The following section will only look at short at the Google AdWords business model and how the Two-Sided Market Business Model Framework is relevant to Google's AdWords business unit.

### 10.2.3 Applying the Framework to the Google Search Engine and AdWords Business Model

Note that this section will do a condensed case study analysis of AdWords through applying the Framework to Google’s search engine and AdWords business model.

#### 10.2.3.1 Market 1: Web Searchers



The primary need of Market 1 is a simplified and seamless web search experience.

Market 1, web searchers, is the Subsidy-Side because they receive a free offering from Google – the Google search engine. They are also the User/Consumer side because they ‘use’ Google’s search engine and demands search queries.

Market 1 is a Quantity side because they add the most value to the Platform by showing up in numbers. Google subsidizes this side of the Two-Sided Market because they realize the immense value that the size of Market 1 offers to the Platform.

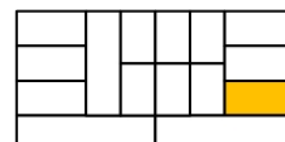
Market 1 is also typically a Single-Homing side. Web searchers will most likely only make use of Google’s search engine, and no other search engines as well.

Market 1 has a high price sensitivity, hence being the Subsidy-Side of the Two-Sided Market.

There are no marquee users that Google should target for Market 1.

The sign-up, switching, multi-homing and exit costs for web browsers are low. They literally just type ‘*google.com*’ in their web browser to get pointed to Google’s search engine. The exit costs that web searchers have to incur are also relatively low.

#### 10.2.3.2 Market 2: Business Advertisers



The primary need of Market 2 is to get **website traffic and marketing exposure**.

Market 2 has a low price-sensitivity and are willing to pay for web searchers to click on their website link. Market 2 is thus the Money-Side. Market 2 is also the Supplier/Developer side because they contribute better search results for web searchers. It is important that these website links that businesses contribute are of good quality – making them a Quality side.

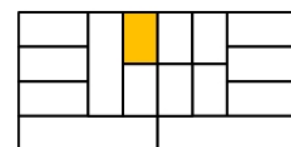
Google is merely one of the channels that business advertisers use to market their business, hence making them a Multi-Homing Side.

Marquee users that Google needs to target for Market 2 are basically all the market leaders of any industry. This will drive more businesses to advertise with Google’s AdWords if the market leaders of an industry makes use of Google.

The sign-up, switching, multi-homing and exit costs for business advertisers are simple. They just have to sign-up with AdWords and load some credit. In July 2011 Google launched AdWords Express. AdWords Express is a faster and simpler way for small businesses to start advertising online in under five minutes.

The exit costs for business advertisers are also very low. They can just stop loading credit to their accounts. This will mean that Google will not necessarily list their website at the top of search results anymore.

10.2.3.3 Value Proposition 1: Simple Web Search Experience



Value Proposition 1 offered to Market 1, web browsers, is **a seamless, simple and efficient web search experience**. Google was not the first entrant into the search engine industry. They were preceded by *Yahoo!*<sup>50</sup> amongst others. Larry Page and Sergey Brin were able to develop a search engine that, arguably, outclassed other competitors.

Google locks in installed base web browsers by offering multiple additional value offerings that often compete with other industries. An example of this is Google Drive cloud storage. Google Drive competes with both Dropbox<sup>51</sup> and Microsoft Office<sup>52</sup>.

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<sup>50</sup> <https://yahoo.com>



- Dropbox

Google Drive competes with Dropbox by also offering free cloud storage of up to 15GB of space.

- Microsoft Office

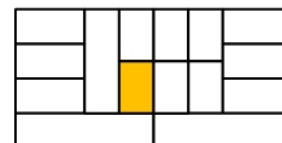
Google Drive incorporates their own suite of document editing applications:

- Google Docs vs. Microsoft Word
- Google Sheets vs. Microsoft Excel
- Google Slides vs. Microsoft PowerPoint

Through adding these additional free value offerings to their entire of value propositions they are locking in users. This strategy is called Bundling – offering value propositions in addition to the primary value offering – Google search engine. In so doing Google increases the switching costs of web browsers.

10.2.3.4 Value Proposition 2: Marketing Exposure

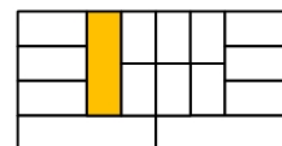
Value Proposition 2 offered to Market 2, business advertisers, is the audience of web browsers that offer readership to business advertisers.



Businesses pay Google to send traffic to their websites. Value Proposition 2 can thus be concluded to be **marketing exposure through website traffic generated by the Google search engine.**

10.2.3.5 Platform: Google Search Engine

The Google search engine is the Platform through which both value propositions 1 and 2 are offered. The Google search engine as a Platform is an Advertising-Supported Media Platform because it serves primarily as a means of marketing business advertisers’ websites.

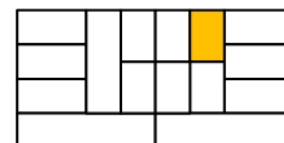


<sup>51</sup> <https://www.dropbox.com>

<sup>52</sup> <https://www.office.com>

10.2.3.6 Complementary Goods 1

The complementary goods required by web browsers to access the minimum value offering of the Google search engine is a:



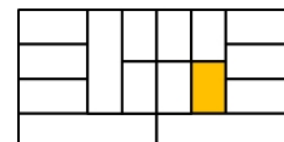
- Computer or other device, and
- Internet

Both of these complementary goods are minimum requirements to gain access to the value propositions offered via the Platform.

Both of these complementary goods are supplied by plain providers, not by Google themselves (self-providing) or by strategic partners.

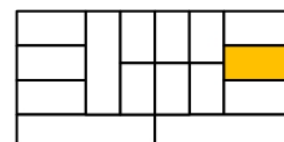
10.2.3.7 Complementary Goods 2

There are no significant complementary goods required by Market 2, business advertisers, which allows them to affiliate with Google and advertise on the Google search engine Platform.



10.2.3.8 Network Effects

There are a few noteworthy Network Effects that exist amongst the Two-Sided Market.



- **Increased adoption by web browsers: Positive Cross-Side Network Effect**

As more web browsers get added to the installed base the likelihood of clicks on a specific website link increases therefore leading more traffic to websites and generating more revenue for Google.

- **Increased adoption by business advertisers: Positive Cross-Side Network Effect**

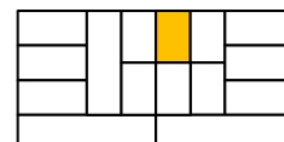
If more business advertisers join AdWords the quality of search results would increase as well giving an improved search experience for web browsers.

- **Increased adoption by business advertisers: Negative Same-Side Network Effect**

As more business advertisers sign-up with AdWords the higher Pay-Per-Click rates become for certain search queries. For instance, if there are 2 businesses that have registered with AdWords and both of them are law firms in Cape Town they are likely to pay more compared to if just one of them were signed-up with AdWords. Google has a specific logarithm that calculates Pay-Per-Click rates for all search queries across the web.

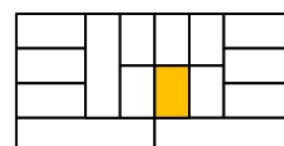
10.2.3.9 Pricing Model 1

Because Market 1 is the market that is subsidized Pricing Model 1 does not have any revenue generating properties. It is therefore the Profit-Minimizing side because Market 1 has a subsidy-pricing element to it.



10.2.3.10 Pricing Model 2

Pricing Model 2 is Profit-Maximizing and generates the largest part of Google's AdWords business unit.

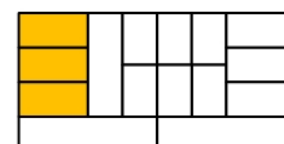


Google has always used the Pay-Per-Click pricing method. Business advertisers load credit to their accounts and with every click to their website money gets deducted from their account and paid to Google.

Pricing Model 2 works by means of a credit uploading and deducting system called Pay-Per-Click. Google sometimes offers **free credit** for new customers signing-up but they rely on **usage fees** as the main Pricing Model element.

10.2.3.11 Key Activities, Key Resources & Key Partners

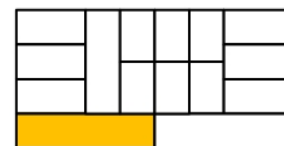
Key Activities, Key Resources & Key Partners will not be investigated because these building block analyses can become very long. Also, analysing these building blocks are irrelevant to validating the Business Model Framework. These three building blocks were identified and taken from The Business Model Canvas. Because it is a fundamental part of The Business Model Canvas and has already been validated in that business model framework it will not be validated again in this validation cycle.



These three Infrastructure building blocks are considered validated and relevant to the Two-Sided Market Business Model Framework.

10.2.3.12 *Cost Structure*

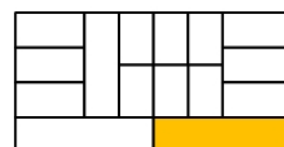
The Incremental Costs per User for both sides of the Two-Sided Market is insignificant and does not impose any substantial costs on Google.



Also, Google offers the Google search engine for free to Market 1. This implies that Google takes all the development, management and maintenance costs of the search engine upon themselves. This adds costs to the Cost Structure.

10.2.3.13 *Revenue Streams*

Google’s main revenue stream is that of the Pay-Per-Click pricing generated from Market 2, business advertisers.



Google does not have any other significant additional Revenue Streams.

10.2.3.14 *Winner-Takes-All Requirements*

The winner-takes-all requirements are:

- 1) Multi-homing costs and/or switching costs are high for at least one user side,
- 2) Network Effects are positive and strong at least for the side with high multi-homing costs,  
and
- 3) Neither sides have a strong preference for special features.

**Winner-takes-all requirement number 1**

Market 1, web searchers, qualifies for this requirement because of the multi-homing costs and switching costs that is relatively high. The switching costs are also relatively high because of Google’s Bundling strategy that locks in users because they get offered more than just a web search engine. Web searchers that are aboard Google’s Platform are loyal to the Google search engine.

### **Winner-takes-all requirement number 2**

Market 1 does experience relatively high Network Effects which makes it qualify for this requirement as well.

### **Winner-takes-all requirement number 3**

Neither sides have a strong preference for special features. Web searchers want a simple web search experience and business advertisers want web searchers to visit their websites and engage with their value offerings.

The Google search engine and AdWords business model ticks off all of the winner-takes-all requirements. This can be a reason of why Google owns the majority of the market.

#### 10.2.4 Google Search Engine and AdWords Case Study Conclusion

Google has managed to structure their business model in such a way that they offer two completely different value propositions to two distinct groups of users and at the same time generate generous amounts of revenue. As more business advertisers join the more value gets generated for Google, and the same for more web searchers that join. As more web searchers join the value proposition offered to business advertisers improve because they are more likely to receive more traffic directed to their website.

No significant flaws or shortcomings in the Two-Sided Market Business Model Framework were identified.

### 10.3 Transaction System Platform Case Study: Visa Credit Card Business Model

Most Transaction System Platforms are Two-Sided Markets – linking merchants with buyers. This section will investigate Visa as a Transaction System Platform.

Visa is the leading global payments technology company. They operate in more than 200 countries worldwide. Visanet, the world's largest payment processing network, had a total transaction volume

of \$6.3 trillion in 2014, a network of 2.3 billion cards, 36 million merchants, and 14,300 financial institutions. Note that Visa is not a bank and does not issue cards, extend credit, or set rates and fees for account holders on Visa products.

### 10.3.1 Short History of Visa's Credit Cards

Credit cards were launched in the early 1900's when a handful of US department stores and oil companies began issuing their own credit cards – the forbearers to modern store cards. These cards were only useable at the particular business that issued them. In 1951 Diner's Club introduced their first credit card, and not much later afterwards American Express launched theirs in 1958. These cards were limited to travel and entertainment purchases and their bills had to be paid in full each month. American Express was the first issuer of plastic cards in 1959 – the same year the concept of revolving a balance from month to month was introduced (King, 2015).

Finally, in 1966, Bank of America launched the first general-purpose credit card: the BankAmericard – forerunner to what is now Visa. In the 1970s, BankAmericard became an independent entity that later united under Visa. Visa continued to operate as a series of entities owned regionally by banks across the world until 2007, when the regional entities merged to form Visa. Visa went public when they launched their first IPO (Initial Public Offering) in 2008 (Kiernan, 2015).

### 10.3.2 Value Chain Structure of Visa's Credit Card Business Model

Credit card transaction systems incorporate multiple entities when fulfilling a transaction:

- |                                   |          |
|-----------------------------------|----------|
| 1) The payment processing network | Visa     |
| 2) The Cardholder                 | Buyer    |
| 3) The Issuer (Cardholder's bank) | Bank A   |
| 4) The Merchant                   | Retailer |
| 5) The Acquirer (Merchant's bank) | Bank B   |

Each one of the entities can be seen in Figure 36 below. Note that the dotted blue line signifies value chain connections and the dashed green line indicates the Financial Viability connections.

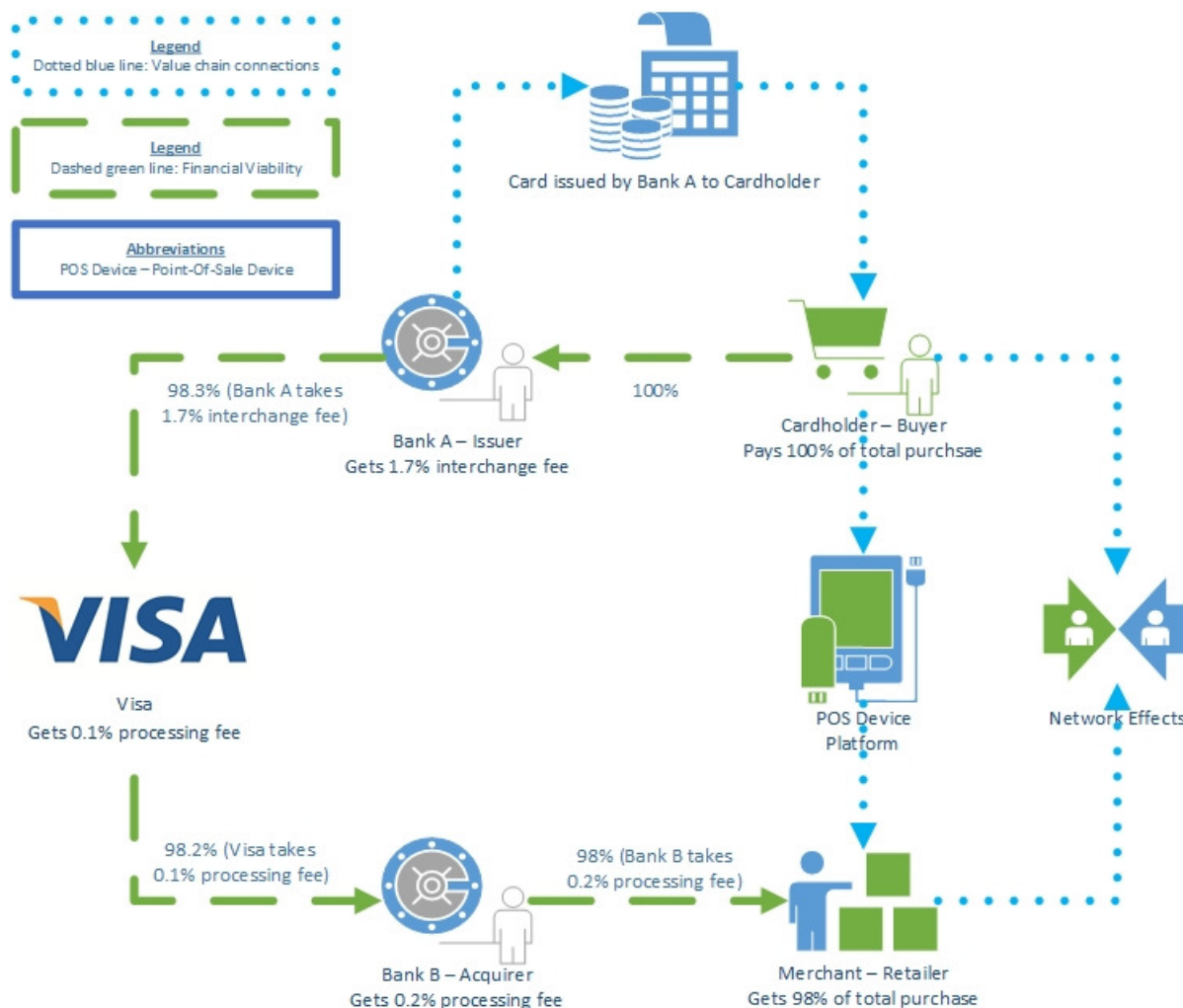


Figure 36 - Visa Credit Cards Value Chain Structure

Interaction and cooperation amongst these various entities fulfils a transaction when the Cardholder buys from the Merchant.

The Cardholder banks with Bank A (the Issuer) and the Merchant banks with Bank B (the Acquirer). When the Cardholder buys a product from the Merchant Bank A takes a 1.7% cut of the payable amount for **interchange fees**<sup>53</sup>. The Issuer gets the highest cut because he needs to extend the payable amount of money to all the other parties until the Cardholder pays back the money. In the meanwhile the Issuer receives interest in the case of an overdraft.

<sup>53</sup> Note that although all percentages used in the descriptive example are approximates they are relatively close to industry standards (Khan Academy & Visa, 2013).

Visa gets 0.1% for processing and facilitating the transaction amongst all interactive parties – processing fees. Bank B gets a 0.2% cut as processing fees for handling the money on behalf of the Merchant as his bank. The Merchant effectively gets 98% of the initial payable amount of the product sold to the Cardholder.

### 10.3.3 Applying the Framework to Visa's Credit Card Business Model

This section will go on to apply the Two-Sided Market Business Model Framework to Visa's credit card business model.

This section is important because it will prove that the Business Model Framework is generic and can be applied to all Two-Sided Market business models – even business model such as that of Visa where five entities are present in the value creation ecosystem (see the previous section: section 10.3.2 from page 232).

#### *10.3.3.1 Market 1: Cardholders*

Market 1 of Visa's credit card business model is cardholders. They are buyers purchasing from merchants. The analysis of the internal dynamics of cardholders follows.



## MARKET 1: Cardholders


### Need

What does the market need?

### User/Consumer vs. Supplier/Developer

User/Consumer  Supplier/Developer

### Price-Sensitivity

Low  High

### Quality vs. Quantity

Quality  Quantity

### Subsidy-Side vs. Money-Side

Subsidy-Side  Money-Side

### Single-Homing vs. Multi-Homing

Single-Homing  Multi-Homing

### Sign-up, switching, multi-homing and exit costs

Time  
Money  
Learning  
Effort

### Marquee Users

Which users should especially be targeted?

Cardholders have a very simple need: they want **easy access to make purchases** and **security for their money**. Apart from only transacting with their card they do not want to carry big amounts of money with them seeing that it poses a security threat. Credit cards reduces the risk and increases money security as well.

The cardholders market is the User/Consumer side of the Two-Sided Market because they buy (consume) from merchants and utilize (use) their credit cards to make transactions.

It can be reasoned that cardholders have a higher price-sensitivity than merchants (Market 2). Although they do not pay any additional amounts when transacting they often pay interest on their overdrafts. They are however more price-sensitive than merchants.

The cardholders market is a Quantity market. The more cardholders there are the more value gets added to the Platform, both for Visa and merchants.

Cardholders is the Subsidy-Side of the Two-Sided Market. Whenever buying a product from Merchants they do not pay additional money for making the purchase. In fact, the Merchant pays on behalf of the Cardholder as discussed in the preceding section.

Cardholders is the Single-Homing Side, usually owning just one credit card from one payment processing network.

Cardholders have only a few sign-up costs that they need to incur in order to affiliate with Visa.

Cardholders need to:

- Sign-up with a bank,
- Have a minimum balance with the according bank, and
- Have a positive credit score.

These three costs that cardholders have to incur requires energy, time and effort.

Exit costs are also relatively low for cardholders.

There are no noteworthy Marquee Users in the cardholder market.

10.3.3.2 Market 2: Merchants

## MARKET 2: Merchants


**Need**

What does the market need?

**User/Consumer vs. Supplier/Developer**

- User/Consumer  Supplier/Developer

**Price-Sensitivity**

- Low  High

**Quality vs. Quantity**

- Quality  Quantity

**Subsidy-Side vs. Money-Side**

- Subsidy-Side  Money-Side

**Single-Homing vs. Multi-Homing**

- Single-Homing  Multi-Homing

**Sign-up, switching, multi-homing and exit costs**

- Time
- Money
- Learning
- Effort

**Marquee Users**

Which users should especially be targeted?

Merchants want **sales**. Merchants are willing to pay a cut of the payable amount of a product or service to Visa and other entities if that means that they will enjoy more sales. Visa’s services allow merchants to enjoy more sales.

Merchants are the Supplier/Developer side of the Two-Sided Market. They sell products or services.

Merchants are less price-sensitive than cardholders, hence making up the Money-Side. Merchants lose a cut of 2% from the sale where 0.1% of the deducted 2% goes to Visa.

The merchant side is a Quantity side. Market 2, Merchants, should also contribute numbers. The more merchants there are in the network the better it is for all other entities. Visa’s Transaction System Platform case is one of few where the Two-Sided Market consists of two Quantity sides. Usually one Quantity and one Quality side exists.

The merchants market is a Multi-Homing Side. They do not only accept Visa credit cards but other credit cards as well, and cash sales. Visa’s credit cards are only one of the various payment channels that they accept.

Music publishers have only a few sign-up costs that they need to incur in order to accept credit cards.

Merchants need to:

- Sign-up with a bank, and
- Have an installed POS (Point-Of-Sale) device to process credit card transactions.

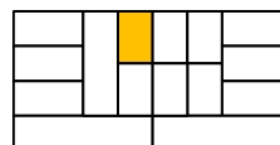
These two costs that cardholders have to incur requires energy, time and effort.

There are no notable marquee users that are worth targeting in market 2.

### 10.3.3.3 Value Proposition 1: Ability to Purchase and Money Security

Value Proposition 1 offered to Market 1, cardholders, is the **ability to purchase** and **money security**.

## VALUE PROPOSITION 1: Ability to purchase and security



### **Bundling**

What Bundling opportunities exist?

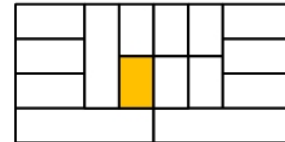
- Offer similar value propositions as competitors.
- Offer similar or extra value propositions in addition to the existing value propositions.

Visa does not offer any additional value propositions on top of the ability to purchase and money security. No Bundling scenarios exist.

10.3.3.4 Value Proposition 2: Increased Sales

Market 2, merchants, gets access to a network of cardholders that are willing to buy from them which ultimately generates more sales for them.

**VALUE PROPOSITION 2: Increased sales**



**Bundling**

What Bundling opportunities exist?

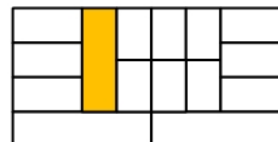
- Offer similar value propositions as competitors.
- Offer similar or extra value propositions in addition to the existing value propositions.

Visa does not offer any additional value propositions on top of a network of cardholders that are willing to buy from merchants. No Bundling opportunities exist.

10.3.3.5 Platform: POS Device

The Platform that connects and facilitate the transaction amongst cardholders and merchants can be argued to be the merchants store or an online e-commerce platform but in this case study the POS (Point-Of-Sale) device will be considered as the Platform.

## PLATFORM: POS Device



### Platform Type

Which Platform opportunities exist that should be exploited?

Exchange

Does any matchmaking opportunities exist? Can the Platform serve as a connecting network?

Advertising-Supported Media

Does any advertising opportunities exist? Does the installed base offer readership?

Transaction System

Does the Platform offer transaction opportunities? Can the Platform serve as a bidding or trading platform?

Software Platform

Does any opportunities exist to offer exclusive access?

### Transaction or Non-Transaction Platform

Transaction

Non-Transaction

### Platform Limitations

- Size
- Maintenance
- Congestion
- Scalability

The POS device is an electronic device that allows credit cards to be swiped and facilitate the transaction between a cardholder and a merchant. The POS device serves as a Transaction System Platform because it connects and facilitates transactions between cardholders and merchants.

The Platform limitations are congestion. A POS device can only serve one cardholder and merchant combination at a time. Transactions often take relatively long and can lead to Platform congestion limitations.

#### *10.3.3.6 Complementary Goods 1*

Market 1, cardholders, rely on certain goods to access the Platform and derive value from the value propositions offered by Visa.

## COMPLEMENTARY GOODS 1


### Value-Enabling vs. Value-Exceeding

- Value-Enabling (Minimum Requirement)  
 Value-Exceeding

### Providers

- Self-Providing  
 Strategic Partners  
 Basic Providers

### Availability, Accessibility and Affordability

- Availability
- Accessibility
- Affordability

Market 1, cardholders, needs a bank to where they get a card from and where they do their personal banking. This bank serves as the Issuer (see section 10.3.2 on page 232).

A financial bank, the Issuer, as a complementary good is Value-Enabling. A bank is a minimum requirement that allows cardholders to derive the minimum value of the value offering from Visa.

A financial bank as a provider of complementary goods to Visa's value ecosystem is a strategic partner of Visa. Visa has agreements with financial banks that agree to offer Visa credit cards.

Banks are relatively available, accessible and affordable.

### *10.3.3.7 Complementary Goods 2*

Market 2, merchants, relies on certain goods to access the Platform and derive value from the value propositions offered by Visa.

## COMPLEMENTARY GOODS 2


### Value-Enabling vs. Value-Exceeding

Value-Enabling (Minimum Requirement)

Value-Exceeding

### Providers

Self-Providing

Strategic Partners

Basic Providers

### Availability, Accessibility and Affordability

- Availability
- Accessibility
- Affordability

- **Bank (the Acquirer)**

Merchants need to have an account with a financial bank. An account is relatively available, accessible and affordable.

Value-Enabling (Minimum Requirement)

Value-Exceeding

An account with a bank is a minimum requirement that merchants need to have in order to extract value from Visa value offering. An account as a Complementary Good is Value-Enabling.

Self-Providing

Strategic Partners

Basic Providers

Accounts are offered by strategic partners and basic providers, banks that might or might not be affiliated with Visa. It does not matter where the merchant has a banking account.

- **POS (Point-Of-Sale) device**

Merchants need to have a POS device that is able to process transactions from credit cards. A POS device is relatively available, accessible and affordable.

Value-Enabling (Minimum Requirement)

Value-Exceeding



A POS device as a complementary good is Value-Enabling. A POS device allow merchants to derive the minimum value of the value offering from Visa.

- Self-Providing                       Strategic Partners                       Basic Providers

POS devices are offered either by strategic partners of Visa or by other plain providers that does not affiliate with Visa. Other plain providers also offer POS devices.

Note that nearly all credit cards are accepted regardless of whether the credit card and POS device is from the same card payment processor network or not. For instance, when a cardholder owns a Visa credit card and buys from a merchant that owns a POS device that is not affiliated with Visa the cardholder will be able to buy from the merchant and the merchant will most likely be willing and able to accept the credit card. This principle is known as the ‘honour-all-cards rule’ (Rochet & Tirole, 2008). All card payment processing networks honour one another even if there are not that much benefit in it for them.

### 10.3.3.8 Network Effects

The Network Effects that are present between the two sides of the market will be discussed now.

## NETWORK EFFECTS

**Cross-Side vs. Same-Side Network Effects**

Cross-Side                       Same-Side

**Positive vs. Negative Network Effects**

Positive                       Negative

- **Increased adoption by cardholders: Positive Cross-Side Network Effects**

- Cross-Side                       Same-Side
- Positive                       Negative

As more cardholders adopt credit cards a Positive Cross-Side Network Effect takes effect. As more cardholders adopt Visa’s service value increases for merchants because it means increased sales for them.

- **Increased adoption by merchants: Positive Cross-Side Network Effects**

- Cross-Side  Same-Side
- Positive  Negative

As more merchants adopt POS devices cardholders have access to a wider range of merchants that they can buy from and utilize their credit card.

### 10.3.3.9 Pricing Model 1

Pricing Model 1 will be discussed now.

## PRICING MODEL 1

**Initial vs. Future Pricing Model**

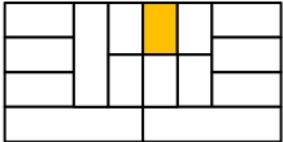
Initial Pricing Model  Future Pricing Model

**Profit-Minimization vs. Profit-Maximization Pricing Model**

Profit-Minimization  Profit-Maximization

**Pricing Model Elements**

- Joining fees
- Fixed recurring fees
- Usage fees
- Freemium
- Trial Accounts
- Free Credit
- Royalties
- Subsidy-pricing



Cardholders’ pricing model has not changed over the course of time. They have always received a credit card at a subsidized price. Cardholders does not pay any additional costs when they use their

credit cards. Note that the interest paid on overdrafts are not paid to Visa but to the according bank of the cardholder therefore it is not relevant to Visa’s business model.

Pricing Model 1 is Profit-Minimizing because Market 1 receives subsidy-pricing. The pricing element of Pricing Model 1 is one of subsidy-pricing.

10.3.3.10 Pricing Model 2

Pricing Model 2 that applies to Market 2 will be discussed below.

## PRICING MODEL 2

**Initial vs. Future Pricing Model**

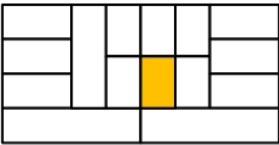
Initial Pricing Model  Future Pricing Model

**Profit-Minimization vs. Profit-Maximization Pricing Model**

Profit-Minimization  Profit-Maximization

**Pricing Model Elements**

- Joining fees
- Fixed recurring fees
- Usage fees
- Freemium
- Trial Accounts
- Free Credit
- Royalties
- Subsidy-pricing



Merchants’ pricing model has not changed over the course of time, therefore the Initial Pricing Model has stayed the same and is still used today.

Pricing Model 2 is Profit-Maximizing because Market 2 generates revenue by paying a share of the sold product to Visa (as well as the other participating entities).

The pricing element of Pricing Model 2 is one of usage fees. Merchants pay Visa a processing fee, a percentage of the total amount paid, *i.e.* royalties.

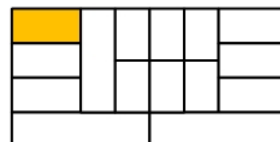
10.3.3.11 *Key Activities & Key Resources*

Key Activities & Key Resources will not be investigated because these building block analyses can become very long. Also, analysing these building blocks are irrelevant to validating the Business Model Framework. These two building blocks were identified and taken from The Business Model Canvas. Because it is a fundamental part of The Business Model Canvas and has already been validated in that business model framework it will not be validated again in this validation cycle.

These two Infrastructure building blocks are considered validated and relevant to the Two-Sided Market Business Model Framework.

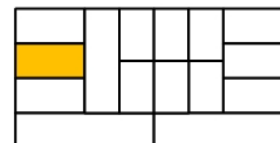
**KEY ACTIVITIES**

What Key Activities do we need to perform to deliver the Value Propositions via the Platform to Market 1 and Market 2?



**KEY RESOURCES**

What Key Resources do we need to perform the Key Activities?

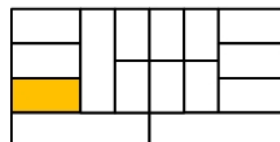


10.3.3.12 *Key Partners*

There are relevant Key Partners that Visa rely on to offer their value proposition.

**KEY PARTNERS**

What Key Partners do we rely on to perform Key Activities or provide Key Resources?



**Strategic Complementary Goods Providers**

With which Key Partners do we have a strategic agreement to provide Complementary Goods?

- **Banks of cardholders (the Issuers) (see section 10.3.2 on page 232)**

Banks that offer Visa credit cards to cardholders, the Issuers, are considered as strategic partners. The cards act as complementary goods and enable cardholders to access the Platform. The banks that provide the cards have agreements with Visa and are therefore considered as strategic key partners.

- **Banks of merchants (the Acquirers) (see section 10.3.2 on page 232)**

Some banks, the Acquirers, with whom merchants are affiliated are also affiliated with Visa. These banks are thus strategic partners of Visa.

- **POS device providers**

Some POS (Point-Of-Sale) device providers are affiliated with Visa which makes them strategic partners of Visa.

### 10.3.3.13 Cost Structure

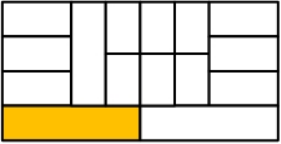
The Cost Structure of Visa’s credit card business model follows.

## COST STRUCTURE

Which building blocks incur what Costs?

**Pricing Model Costs (Subsidy-Pricing)**  
What Costs do the Pricing Models incur?

**Incremental Costs Per User**  
What are the incremental costs per user that gets on board?



Although cardholders is the Subsidy-Side and receives a subsidized pricing model Visa does not incur any significant costs because the costs that cardholders add to Visa’s Cost Structure are made up for during the transaction royalties paid to Visa.

If a user (cardholder or merchant) joins the installed base of either sides of the Two-Sided Market Visa does not undergo any substantial incremental costs per user.

#### 10.3.3.14 Revenue Streams

Visa generates a Revenue Streams from merchants when they pay usage fees for processing transactions – processing fees.

## REVENUE STREAMS

Which building blocks generate Revenue Streams?  
 What are these Revenue Streams?  
 Are there additional Revenue Stream opportunities?

**Pricing Model Revenue Streams**  
 What Revenue Streams do the Pricing Models generate?

Merchants pay royalties to Visa. For every product sold Visa receives an estimate of 0.1% of the total transaction fee. The merchant takes these deducted costs upon themselves.

There are no other Revenue Streams generated by Visa other than that of the royalties from merchants.

#### 10.3.3.15 Winner-Takes-All Requirements

The winner-takes-all requirements are:

- 1) Multi-homing costs and/or switching costs are high for at least one user side,
- 2) Network Effects are positive and strong at least for the side with high multi-homing costs,  
and
- 3) Neither sides have a strong preference for special features.

#### **Winner-takes-all requirement number 1**

Market 1, cardholders, qualifies for this requirement because of the multi-homing costs and switching costs that is relatively high. The switching costs are relatively high because a cardholder

would not really consider switching Platforms unless he is extremely unhappy with the service he receives but this is very unlikely.

### **Winner-takes-all requirement number 2**

Market 1 does experience relatively high Network Effects because he has access to literally millions of merchants where he can buy from which makes cardholders qualify for this requirement as well.

### **Winner-takes-all requirement number 3**

Neither sides have a strong preference for special features. Cardholders want access to purchase from merchants and merchants want to be able to sell more goods or services by gaining access to the cardholder market via their POS (Point-Of-Sale) device.

Visa meets all the winner-takes-all requirements. This can be one of the reasons why they are the biggest payment processing network in the world – they are enjoying the fruits of the winner-takes-all dynamics.

#### 10.3.4 Visa Credit Card Case Study Conclusion

Through establishing Positive Cross-Side Network Effects from both Quantity sides of the Two-Sided Market Visa has established themselves as the leading payment processing network in the world. The Two-Sided Market Business Model Framework has made it possible to define the different building blocks of the business model with their corresponding internal dynamics. A better understanding of Visa's complex business model that incorporates five entities in the value chain ecosystem has been established (see section 10.3.2 on page 232).

The Two-Sided Market Business Model Framework has a characteristic of being a generic framework and can be applied to various Two-Sided Market business of differing sorts. The Business Model Framework can be applied to numerous Two-Sided Market business models that serve Two-Sided Markets of various kinds.

## 10.4 Software Platform Case Study: Microsoft Windows Operating System Business Model

Software Platforms provide services for applications developers; these services help developers obtain access to the hardware for the computing device that allows them to develop suitable features for the desired computing devices. Software Platform users can only use certain programs and features with corresponding software packages.

Software Platforms include operating systems, mobile networks, gaming consoles and digital music, amongst many others. Software Platforms mostly generate a revenue stream on the User/Consumer (Money-Side) side and not on the Supplier/Developer (Subsidy-Side) side, as will be seen shortly.

Microsoft operates the most successful operating system Software Platform in the world. Microsoft sells their Windows operating system to users, generating a revenue stream, while they offer SDKs (Software Development Kits) for free to software developers that want to write programs and develop applications that are compatible to the Windows operating system.

Through doing this Microsoft populates the market of available applications for the Windows operating system, hence improving the Windows operating system value offering and driving the market in a certain direction – towards computer users adopting the Microsoft Windows operating system.

Microsoft has managed to gain nearly 90% of the computer operating system market share through applying this business model strategy. Apple lies in second place with just over 8% of the market. Linux comes in at third place with nearly 1.5% and the left over market share is shared by other operating systems. Table 36 brings clarity to this case.



Table 36 - Computer Operating System Market Share

(Source: <sup>1</sup>Stat Counter Global Stats, 2014, <sup>2</sup>Net Marketshare, 2015)

Company	Market share <sup>1</sup> (March 2014)	Market share <sup>2</sup> (September 2014)	Average
Microsoft	89.29%	90.53%	89.91%
Apple	8.58%	7.73%	8.16%
Linux	1.16%	1.74%	1.45%
Other	0.97%	–	0.49%
Total	100.00%	100.00%	100.00%

Eisenmann *et al.* (2006) comments on the Microsoft vs. Apple rivalry:

*Apple provides a cautionary tale about misapplied pricing logic. Apple's well-regarded Macintosh operating system (Mac OS X) has always commanded a price premium from consumers. When it launched the Mac, Apple also tried to extract rent from the other side of its network, charging third-party developers \$10,000 for the software development kits (SDKs) required to create Macintosh applications. By contrast, Microsoft gave Windows SDKs away for free. Tellingly, by the time of Microsoft's antitrust trial, Windows had six times as many applications as Macintosh. This made Windows far more attractive to consumers, despite its functional shortcomings.*

Microsoft has managed to establish themselves as market leaders by offering their SDKs (Software Development Kits) for free and generating revenue from the Windows users side. Most Software Platforms do it this way around, they subsidize developers and generate revenue from the user side. Gaming consoles are one Software Platform instance where this is not the case.

In the gaming console industry where the market leaders are Sony PlayStation, Microsoft Xbox and Nintendo Wii it is done the other way around. Users get subsidized and money is generated on the game developers' side of the Two-Sided Market.

Although this is the case this section will consider Microsoft's Windows operating system business model and apply the Two-Sided Market Business Model Framework to define it and ultimately establish an improved understanding of it.

#### 10.4.1 Short History of Microsoft Windows Operating System

Bill Gates and Paul Allen formed a partnership in 1975 called Microsoft. They started out small but had a vision to put a computer in every home and on every desktop. In July 1980 IBM<sup>54</sup> approached Microsoft and asked them to help develop an operating system. The first computer operating system was none other than the legendary “MS-DOS<sup>55</sup>”. The first version of Windows took a while to develop and was announced and launched in 1983.

The first programs that were developed by external software developers were done after Windows 2.0 was launched in 1987. Computers started to become a part of daily life for some office workers.

In 1995 Microsoft sold 7 million copies of Windows 95 in the first five weeks of sales. At the time of the Windows 95 launch in 1995 more than 80% of the world’s PCs were running on the previous Windows and MS-DOS.

Today Microsoft owns the majority of the computer operating system market with nearly 90% of the market (see Table 36 above). Although Microsoft has undertaken other business the Windows business unit remains their primary and greatest revenue source.

#### 10.4.2 Value Chain Structure of the Microsoft Windows Operating System Business Model

Microsoft sells Windows to users which in turn generates revenue. Microsoft enforces the Windows value offering by offering free SDKs (Software Development Kits) to software developers. SDKs are used to develop applications and write programs that are functional on a selected operating system, *i.e.* the Windows operating system. Software developers need the Windows SDK to develop applications for the Windows operating system. This ultimately enlarges the pool of software and applications available to Windows users. Software developers sell programs and applications to Windows users making them the Subsidy-Side of the Two-Sided Market. Figure 37 shows the structure of the Windows operating system value ecosystem.

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<sup>54</sup> <http://www.ibm.com>

<sup>55</sup> Short for “*Microsoft Disk Operating System*”

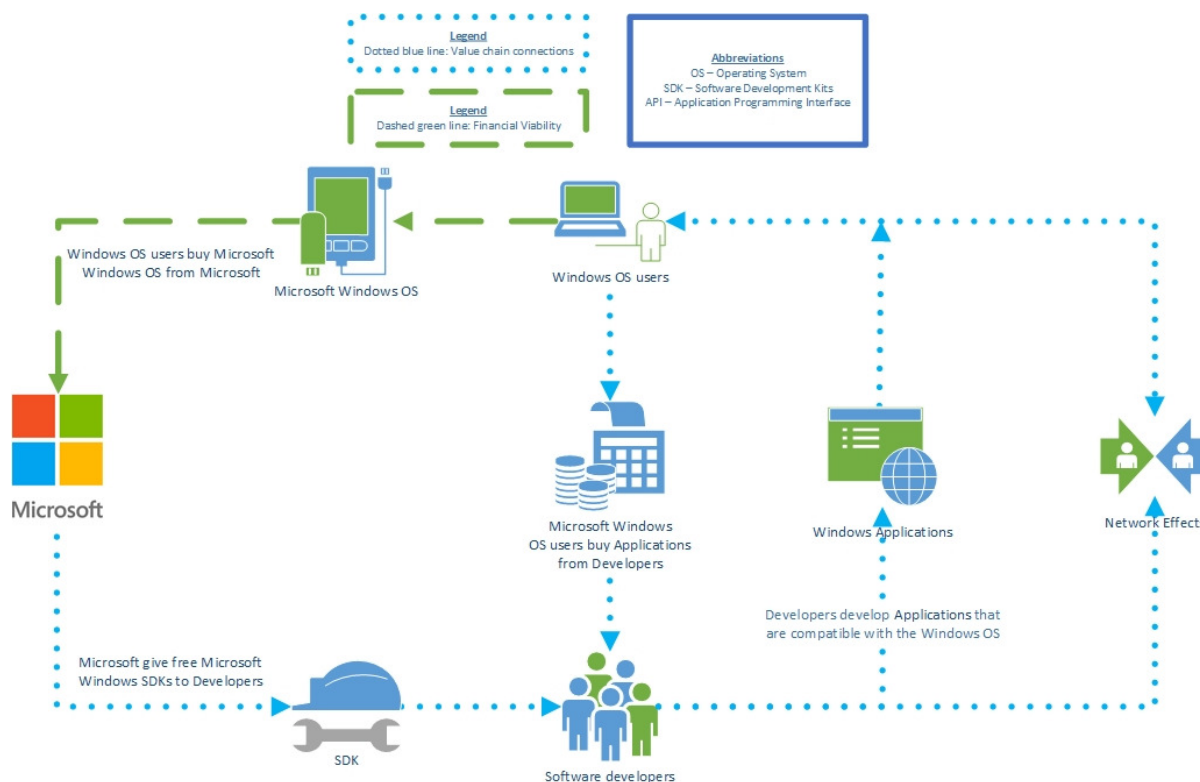


Figure 37 - Windows operating system value chain structure

The three participating parties are:

- |                        |   |
|------------------------|---|
| 1) Microsoft           | The Intermediary                                    |
| 2) Windows users       | The User/Consumer side of the Two-Sided Market      |
| 3) Software developers | The Supplier/Developer side of the Two-Sided Market |

Microsoft sells their Windows operating system to Windows users. Microsoft also gives their SDK to software developers for free. Software developers use the SDK to write programs and develop applications that they sell to Windows users. Microsoft's strategy in doing this is to generate revenue from Windows users and through giving SDKs to software developers for free the programs and applications that are available to Windows users form a large pool. This establishes a Positive Cross-Side Network Effect because as more software developers write programs and develop applications more value is generated for Windows users. Giving SDKs away for free makes sense in this instance, Microsoft's strategy has been this way since they gave their first SDK away for free.

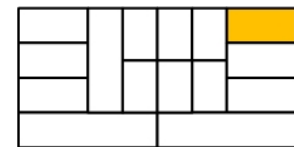
### 10.4.3 Applying the Framework to the Microsoft Windows Operating System

This sub-section will consider Microsoft's Windows business model and apply the Two-Sided Market Business Model Framework to it to disassemble the building blocks in order to understand the fundamentals of the business model.

A condensed case study will be done on Microsoft's Windows business model because it is quite simple. Although a shortened case study will be done all the building blocks will be considered.

#### 10.4.3.1 Market 1: Windows Users

The primary need of Market 1, Windows users, is a simple and affordable computer operating system.



Market 1, Windows users, is the User/Consumer side that buys the Windows operating system from Microsoft making them the Money-Side. Market 1 is also the Quantity side because as more users join the installed base more revenue is generated for Microsoft. Windows users is also a Single-Homing side because most users that make use of the Windows operating system does not utilize other operating systems such as Mac OS X or Linux (see Table 36 on page 251).

Although it might be reasoned that Market 1 has a higher price-sensitivity than Market 2 (software developers) it makes up the Money-Side.

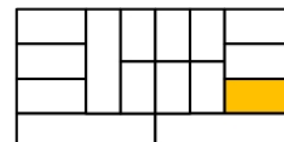
The potential marquee users that Microsoft can target are big corporate companies, schools, academic institutions and other institutions that use Windows. If institutions use Windows their employees and members will also use it, making it the primary computer operating system 'language'. This will ultimately drive users to buy Windows instead of other competing operating systems because they will be more familiar with Windows.

The multi-homing costs and switching costs for Windows users are high. In order for computer users to learn another operating system 'language' takes time and effort. Because the multi-homing costs are high and Microsoft were the first entrant many people learned Windows first and when confronted with the decision of learning another operating system they decide not to because they

choose to stay with Windows. This is probably one of the greatest reasons why Microsoft has been at the forefront of operating systems since the beginning.

Sign-up costs for Windows users are relative. The time and effort to learn a new operating system ‘language’ might be hard for some and less for others. However the monetary implication of signing-up is relatively low. Windows are considered to be an affordable operating system.

*10.4.3.2 Market 2: Software Developers*



The primary need for Market 2, software developers, is a market to whom they can sell their programs and applications. They have access to this market of Windows users because the SDKs (Software Development Kits) are offered to them for free.

Market 2, software developers, is the Subsidy-Side because SDKs are offered to them for free. They are however the Supplier/Developer side because they write programs and develop applications that they sell to Windows users. They are also the Quality side because they need to write programs and develop applications that are of a high standard. Software developers are also a Multi-Homing side because they often write programs for different Software Platforms.

Marquee users that Microsoft should target are all the major software developers. When the leading software developers start writing programs that are compatible with the Windows operating system it reinforces the Windows value proposition offered to Windows users.

The sign-up costs for software developers are moderate to relatively high. For software developers to learn a completely new operating system SDK can be hard although some may experience it as being easy – it is relative.

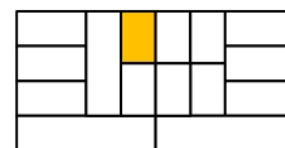
The switching costs for software developers are also moderate. If a software developer is used to developing applications for a different operating system other than Windows it could require an effort to learn the new operating system programming language.

The multi-homing costs for software developers are not substantial. For software developers to write programs for more than one operating system would not require that much costs.

The exit costs that software developers have to incur if they want to leave the Platform are insignificant.

10.4.3.3 Value Proposition 1: A Simple Computer Operating System

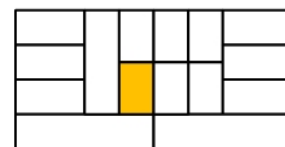
Microsoft offers a **simple and affordable computer operating system** to Market 1.



Microsoft does not offer a Bundled Value Proposition 1 by including any additional value offerings.

10.4.3.4 Value Proposition 2: A Market of Computer Users

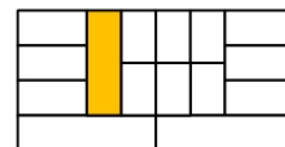
Microsoft offers a **market of computer users that demand programs and applications** for their operating systems. Software developers are able to sell programs and applications to the market of Windows users. Microsoft thus develops a market that demands programs and applications able to generate revenue for software developers that are freely accessible.



10.4.3.5 Platform: Windows Operating System

The Windows operating system functions as the Platform that connects the Two-Sided Market. Windows is a Software Platform type of Platform.

Microsoft offers exclusive access to software developers by offering Windows SDKs to software Platforms. Also, users that does not have Windows cannot access the programs and applications developed by software developers for the Windows Software Platform.

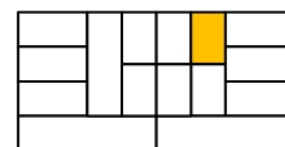


Microsoft uses exclusive access as an enforcing element to strengthen their business model and value offering.

Windows as a Platform does not have any substantial limitations that restricts the Two-Sided Market to connect with one another.

10.4.3.6 Complementary Goods 1

The primary complementary good for Market 1 is a computer. Someone



cannot form part of Market 1 unless they have a computer on which they can run the Windows operating system.

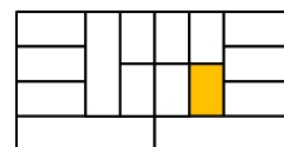
The availability, accessibility and affordability of computers as a complementary good are relatively positive for Market 1.

A computer is a Value-Enabling complementary good for Windows users. It is a minimum requirement that allows users to access the minimum value offering.

Computers are provided to users by strategic partners of Microsoft and by basic providers. Some of the strategic partners that offer computers have some or other version of Windows installed on it. Microsoft sells the Windows operating system to strategic partners at a subsidized price to promote the Windows operating system.

*10.4.3.7 Complementary Goods 2*

Market 2 demands SDKs (Software Development Kits) in order to write programs and develop applications for the Windows operating system.

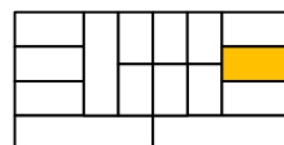


SDKs are fully accessible, available and affordable for software developers. SDKs are in fact offered completely free to Market 2 – the Subsidy-Side of the market.

SDKs are provided by Microsoft themselves. SDKs are self-provided by Microsoft for free.

*10.4.3.8 Network Effects*

There are various Network Effects that exist between the two distinct groups of users.



- **Increased adoption by Windows users: Positive Cross-Side Network Effects**

As more computer users adopt Windows Market 1 grows and in effect increases the demand for programs and applications from software developers. This is translated into increased sales for software developers.

- **Increased adoption by Windows users: Positive Same-Side Network Effects**

As more users adopt Windows the probability that another user will also use Windows increases making file sharing so much more easier because not all files are readable on all operating systems. Also, teaching and learning from one another becomes easier if more people use Windows.

- **Increased adoption by software developers: Positive Cross-Side Network Effects**

As more software developers start writing programs and developing applications for the Windows operating system the availability of programs and applications increase allowing for a bigger pool of programs and applications as well as an increased innovation rate that benefits users.

The increased adoption by software developers increases the competition in the software developer market which ultimately drives down prices. This also benefits and protects Windows users.

- **Increased adoption by software developers: Positive Same-Side Network Effects**

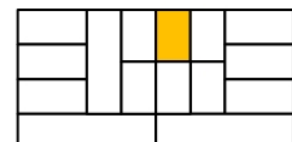
The increased adoption by software developers increases the shared public knowledge available that promotes and benefits the software developer side of the Two-Sided Market. This benefits all software developers because the public knowledge domain that is available to software developers to learn from increases.

- **Increased adoption by software developers: Negative Same-Side Network Effects**

The increased adoption by software developers increases the competition in the market that can lead to the demise of some software developers. Note that although the increased adoption in a market such as the software developer market leads to increased competition on the software developer side of the Two-Sided Market it benefits Market 1, the Windows users side, by accelerating innovation and driving down prices, hence protecting Market 1.

#### 10.4.3.9 Pricing Model 1

Pricing Model 1 that applies to Market 1 has fundamentally stayed the same. The Initial and Future Pricing Models are therefore the same.



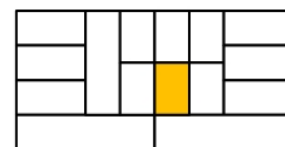
Pricing Model 1 is Profit-Maximizing because Microsoft generates revenue from this market.



Pricing Model 1 relies on joining fees as the pricing model element. Windows users pay Microsoft to obtain the Windows operating system before they can install it on the relevant computer.

10.4.3.10 Pricing Model 2

Pricing Model 2 that applies to Market 2 has also stayed the same since 1981. The Initial and Future Pricing Models are therefore still the same.

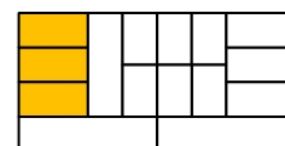


Pricing Model 2 is Profit-Minimizing because Microsoft subsidizes this market by offering free SDKs (Software Development Kits) to software developers.

Pricing Model 2 is one that relies on Subsidy-Pricing because Microsoft offers the Windows SDKs to software developers for free.

10.4.3.11 Key Activities, Key Resources & Key Partners

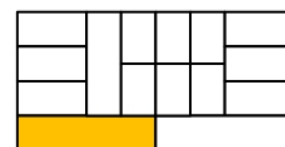
Key Activities, Key Resources & Key Partners will not be investigated because these building block analyses can become very long. Also, analysing these building blocks are irrelevant to validating the Business Model Framework. These three building blocks were identified and taken from The Business Model Canvas. Because it is a fundamental part of The Business Model Canvas and has already been validated in that business model framework it will not be validated again in this validation cycle.



These three Infrastructure building blocks are considered validated and relevant to the Two-Sided Market Business Model Framework.

10.4.3.12 Cost Structure

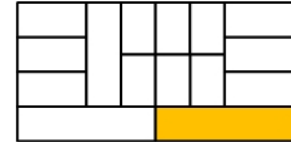
The incremental costs per user to Microsoft is effectively zero because they do not undergo any significant costs for every Windows user that adopts the Windows operating system. Also, there are not any substantial costs for every software developer that gets on board because Microsoft offers one SDK (Software Development Kit) for the whole software developer market.



There are not any significant costs that Microsoft incurs other than that of developing the Windows operating system and the SDKs. These two software packages require expertise to develop and ultimately offer it to the respective sides of the Two-Sided Market.

10.4.3.13 *Revenue Streams*

Microsoft’s primary Revenue Stream is generated from Pricing Model 1 – the Windows operating system sales that is generated from Market 1.



Microsoft does not have any other considerable additional alternative revenue streams.

10.4.3.14 *Winner-Takes-All Requirements*

The winner-takes-all requirements are:

- 1) Multi-homing costs and/or switching costs are high for at least one user side,
- 2) Network Effects are positive and strong at least for the side with high multi-homing costs, and
- 3) Neither sides have a strong preference for special features.

**Winner-takes-all requirement number 1**

Market 1, Windows users, qualifies for this requirement because of the multi-homing costs and switching costs that is relatively high. In order for Windows users to multi-home would require them to have more than one computer and switching would require learning a whole new computer operating system ‘language’. Market 1 experiences high multi-homing and switching costs.

**Winner-takes-all requirement number 2**

Market 1 does experience high Network Effects because they have access to a broad range of programs and applications that are developed by software developers. The pool of programs and applications that are available are substantial because software developers can contribute to the pool with ease because Microsoft offers the SDKs (Software Development Kits) for free.

### **Winner-takes-all requirement number 3**

Neither sides have a strong preference for special niche features. Windows users need an easy and affordable computer operating system and software developers want to sell their programs and applications to Windows users. Both markets have easy access to each of the needs that they demand.

The winner-takes-all requirements that Microsoft meets can be the recipe to owning nearly 90% of the computer operating system market.

#### 10.4.4 Microsoft Windows Operating System Case Study Conclusion

Microsoft has managed to establish themselves as the most widely operated computer operating system in the world. They have done this through an unconventional way of offering free SDKs (Software Development Kits) to software developers and generating revenue from Windows users. The Network Effects that exist between the two sides of the market are fundamental to Microsoft's success.

Once again, the Business Model Framework was able to define all the respective building blocks of Microsoft's business model to establish an improved understanding of how Microsoft creates value for their Two-Sided Market.

#### 10.5 Business Model Framework Revision

After revising the Business Model Framework no significant flaws or shortcomings were identified throughout the course of the case studies. However, there is one building block that might need some improvement. The Cost Structure building block needs some adjustments.

##### 10.5.1 Cost Structure Building Block Revision

The Cost Structure building block indicates all the costs and expenses that the Intermediary have to incur to successfully operate the complete business model and successfully deliver both value propositions to the Two-Sided Market.

Most of the building blocks have a financial implication (see section 9.2.1 on page 186). Throughout the preceding case studies and the literature study the building blocks that incur substantial costs and expenses are:

- Value Propositions 1 & 2,
- Platform, and
- Key Activities, Key Resources & Key Partners

Each one of these building blocks are listed because they typically require the Intermediary to incur substantial costs.

#### *10.5.1.1 Cost Structure Revision: Value Propositions 1 & 2*

Value Propositions 1 & 2 are Offer building blocks and they resemble the value offerings offered to Market 1 & 2, respectively. In order for businesses to offer these value offerings they require substantial amounts of resources. Whether it is time, expertise, logistical costs, employee training costs, delivery costs, maintenance, management, operational costs, *etc.* Intermediaries have to pay to have these resources present and available.

An additional internal dynamic will be added to the Cost Structure building block to ensure that these costs are not overlooked when doing business model innovation with the Two-Sided Market Business Model Framework.

#### *10.5.1.2 Cost Structure Revision: Platform*

In the same way that Intermediaries need to incur costs to offer Value Propositions 1 & 2 they need to maintain, operate and innovate the Platform as well. Platform management requires expertise, development costs, marketing costs, *etc.* to successfully run the Platform.

In the iTunes Store case study instance Apple offers the iTunes media player for free to anyone that has a computer. Apple need to develop the iTunes media player and adapt it to their business model. This requires computer programming expertise that comes at a price.

An additional internal dynamic will be added to the Cost Structure building block to compensate for the costs that the Platform requires.

### *10.5.1.3 Cost Structure Revision: Key Activities, Key Resources & Key Partners*

Key Activities, Key Resources & Key Partners influences Cost Structure in the same way that Value Propositions 1 & 2, and the Platform adds to the list of expenses that Intermediaries have to undertake.

Key Activities are the main activities that an Intermediary need to perform in order to successfully deliver a value offering. This includes marketing, maintenance, training, research & development, *etc.* All of these activities demands a cost.

Key Resources include human resources (*e.g.* employees), physical assets (*e.g.* factories, vehicle fleet, machines, *etc.*), IP (Intellectual Property), patents, *etc.* All of these resources that contributes to an Intermediary's competitive advantage requires expenses to successfully develop, maintain and manage them.

Key Partners are all suppliers, partners doing outsourced work, strategic complementary goods provider partners, *etc.* that the Intermediary rely on to operate successfully. Key Partners are all businesses that undertake some work that the Intermediary does not want to do themselves but chooses to hand it over to Key Partners. Key Partners undertake all Key Activities and provide all Key Resources that the Intermediary need and that which they decide to not undertake themselves. These Key Partners demands a price for their value proposition offered to the Intermediary.

All three Infrastructure building blocks mentioned above demand that the Cost Structure building block should be improved.

The Cost Structure will not be adjusted only for the sake of the Key Activities, Key Resources & Key Partners building blocks but also because of the Value Propositions 1 & 2 building blocks and the Platform building block.

### *10.5.1.4 Improved Cost Structure Building Block*

The improved Cost Structure building block that accommodate for Value Propositions 1 & 2, the Platform, and Key Activities, Key Resources & Key Partners looks as follows.

## COST STRUCTURE


### Pricing Model Costs (Subsidy-Pricing)

What Costs do the Pricing Models incur?

### Incremental Costs Per User

What are the incremental costs per user that gets on board?

### Building Block Cost Implications

What costs are incurred to successfully manage the following building blocks:

- Value Proposition 1
- Value Proposition 2
- Platform
- Key Activities
- Key Resources
- Key Partners

The improved Cost Structure building block with its corresponding internal dynamics will now be able to guide business model innovation towards including the various building block cost implications. The internal dynamic *“Building Block Cost Implications”* will remind discussions to include the financial implications of the different building blocks.

The revised and improved Two-Sided Market Business Model Framework can be seen on the next page. This version of the Two-Sided Market Business Model Framework is the primary outcome of this research study.

# Revised Two-Sided Market Business Model Framework

### 10.5.2 Business Model Framework Revision Conclusion

The only alteration that was done to the Two-Sided Market Business Model Framework after revising the Business Model Framework after the four case studies was the Cost Structure building block.

It was noted that the validation method of case studies does not focus on identifying flaws and shortcomings in the Business Model Framework. The case studies validation was primarily done to show:

- How the Two-Sided Market Business Model Framework functions by following the sequential building block development order (see section 9.2.4 on page 189), and
- To show that the Two-Sided Market Business Model Framework can be applied to any kind of Two-Sided Market business model to help defining it to establish an improved understanding of the business model.

More validation methods can be applied to scrutinize the Two-Sided Market Business Model Framework. This will assist with improving the Business Model Framework and ultimately make it more accurate and user-friendly.

## 10.6 Validation Conclusion

This chapter served as the means to accomplish two steps of the Business Model Framework development process. The two steps that were completed in this chapter are the green highlighted blocks in Figure 38 below.



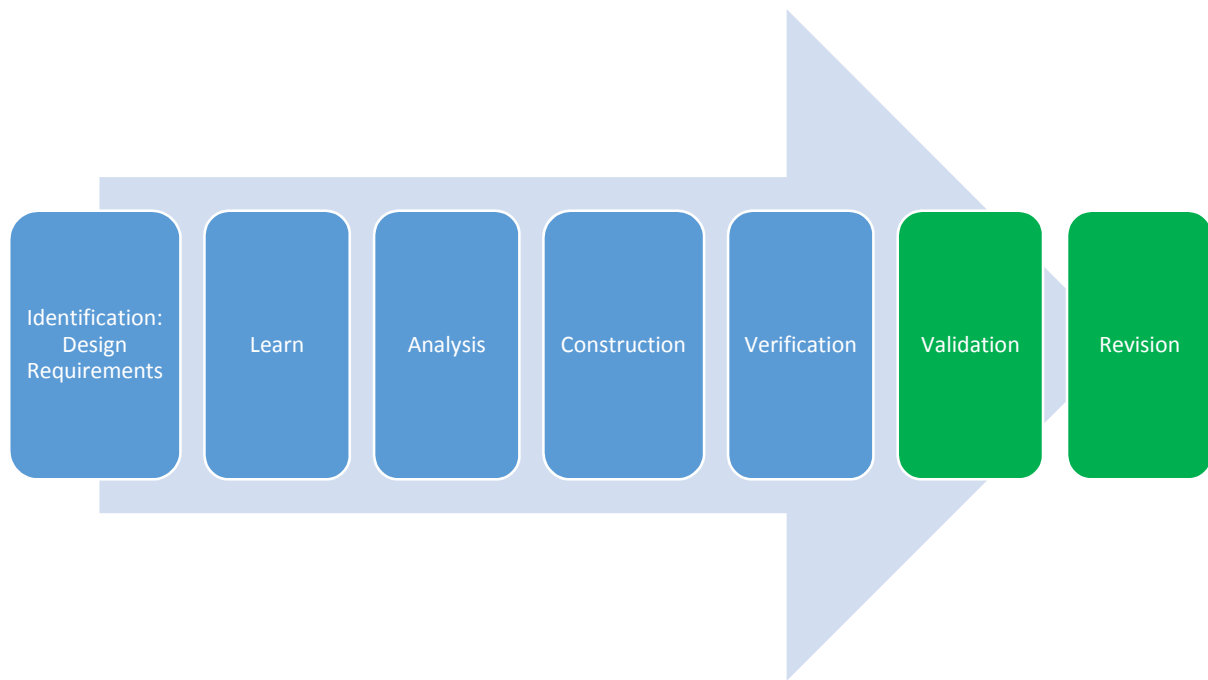


Figure 38 - The Business Model Framework Development Process

The four case studies that were successfully undertaken proved that the Business Model Framework is able to:

- **Define** a Two-Sided Market business model by working through the building blocks one-by-one.
- Establish an improved **understanding** of how a Two-Sided Market business model creates and delivers value.

Because the Business Model Framework can accomplish these two aspects it will also be able to assist with business model innovation discussions and projects. The Business Model Framework can serve as a canvas where business model conceptualization can be mapped. It can serve as a means to convey as-is and to-be business model ideas.

Some design requirements were also supposed to be validated in this chapter (see section 9.3 on page 192). These specific design requirements are:

- 5.1 **Define** a Two-Sided Market business model so that an improved **understanding** can be established

- 5.2 Establish a **shared understanding** of a Two-Sided Market business model in a group of people
- 5.3 **Facilitate description and discussion**
- 5.5 The Business Model Framework must be **relevant** and **intuitively understandable** as well as **simple** but at the same time not oversimplifying it
- 5.6 Be a **business model innovation tool**. A business model framework tool should serve as a business model innovation tool for boardroom meetings, workshops, discussions, business model innovation projects, *etc.*

This chapter has shown that:

#### **Design requirement 5.1**

The Business Model Framework is able to define a Two-Sided Market business model so that an improved understanding of the relevant business model can be established. This was proved in sections 10.1, 10.2, 10.3 and 10.4 when all four case studies were done.

#### **Design requirement 5.2**

The Business Model Framework is easy to use and user-friendly. Working through all the building blocks in a group will definitely establish a shared understanding amongst the people that participated in the discussion.

#### **Design requirement 5.3**

The Business Model Framework is able to facilitate description and discussion – especially when the sequential building block development order is followed the same way that it was done in the case studies. When the sequential building block development order is followed the business model innovation session follows a logical flow which guides the description and discussion in a simple direction to ultimately define a business model and establish shared understanding.

#### **Design requirement 5.5**

Through the figurative presentation of the Framework the Business Model Framework can be considered relevant and intuitively understandable as well as simple but at the same time not oversimplifying the dynamics and principles that govern Two-Sided Markets.

### **Design requirement 5.6**

The Business Model Framework can be printed on an A1 paper format which makes viewing easier. Design requirement 5.6 has also been met because the Business Model Framework can act as a **business model innovation tool**. The Business Model Framework will be able to serve as a business model innovation tool for boardroom meetings, workshops, discussions, business model innovation projects, *etc.*

Whether these design requirements have been met or not is not a binary matter. Although it is an opinionated matter this chapter that validated and altered the Business Model Framework will be considered as being sufficient.

Note that each one of the four respective case studies met all three winner-takes-all requirements (see sections 10.1.4.14, 10.2.3.14, 10.3.3.15 and 10.4.3.14). It is not common that Intermediaries meet all these requirements that lead to winner-takes-all benefits but the cases that were studied are unique:

- 1) Apple has revolutionized the music industry with their iTunes business model,
- 2) Google owns the majority of the web search market,
- 3) Visa is the biggest payment processing network in the world, and
- 4) Microsoft owns nearly 90% of the world's computer operating system market.

These four world-class multinational companies are this successful because one of the reasons are that they meet all the winner-takes-all requirements.

# Chapter 11

## Conclusion

*The starting point for any good discussion, meeting, or workshop on business model innovation should be a shared understanding of what a business model actually is. We need a business model concept that everybody understands: one that facilitates description and discussion. We need to start from the same point and talk about the same thing. The challenge is that the concept must be simple, relevant, and intuitively understandable, while not oversimplifying the complexities of how enterprises function.*

– Osterwalder & Pigneur, 2010, *The Business Model Generation*

### 11. Conclusion

This concluding chapter will deliver a condensed overview of what was accomplished in and throughout this thesis.

#### 11.1 Research Gap

Although Two-Sided Markets offer notable opportunities to Multi-Sided Platform Businesses that are willing to set foot in the undiscovered land of Network Effects that offer exponential growth trends they are faced with various challenges. Even though Two-Sided Markets offer winner-takes-all

benefits Intermediaries often enter these industries with insufficient knowledge and inadequate experience.

This research study was undertaken to address the research problem:

*The strategic business & innovation management principles of Two-Sided Markets have gone largely unexplored and differ substantially from that of One-Sided Markets. This aggravates the challenge that executive managers face when establishing their Two-Sided Market business models. Executive managers face this business model innovation problem because they struggle to define and understand their existing business model.*

The research problem statement above also implies that Two-Sided Market business model innovation is further exacerbated because One-Sided Markets and Two-Sided Markets differ when considering:

- Strategy dynamics,
- Competition dynamics, and
- Value Chain dynamics.

These dynamics makes Two-Sided Market business model innovation even more intricate if executive managers cannot distinguish between One-Sided and Two-Sided Market dynamics.

This problem is further aggravated by the fact that Two-Sided Markets is still a relatively new field of thought. Two-Sided Markets has become more prevalent mainly because of the Internet that has given businesses access to Two-Sided Market – specifically via online Platforms. Because of the novelty of Two-Sided Markets a lot of undiscovered knowledge is still buried waiting to be discovered.

These multiple aspects complicate the challenging process that executive managers face when establishing their business model. Business model innovation offers many promising opportunities to businesses that are prepared to look beyond product innovation into the unknown but rewarding sphere of business model innovation.

There are two challenges that perplex the process of pioneering business model innovation. One, executive managers do not have a clear definition of their existing business model. Two, an aligned understanding needs to be established of the business model in view before significant innovations can be implemented in the existing business model.

## 11.2 Research Outcome

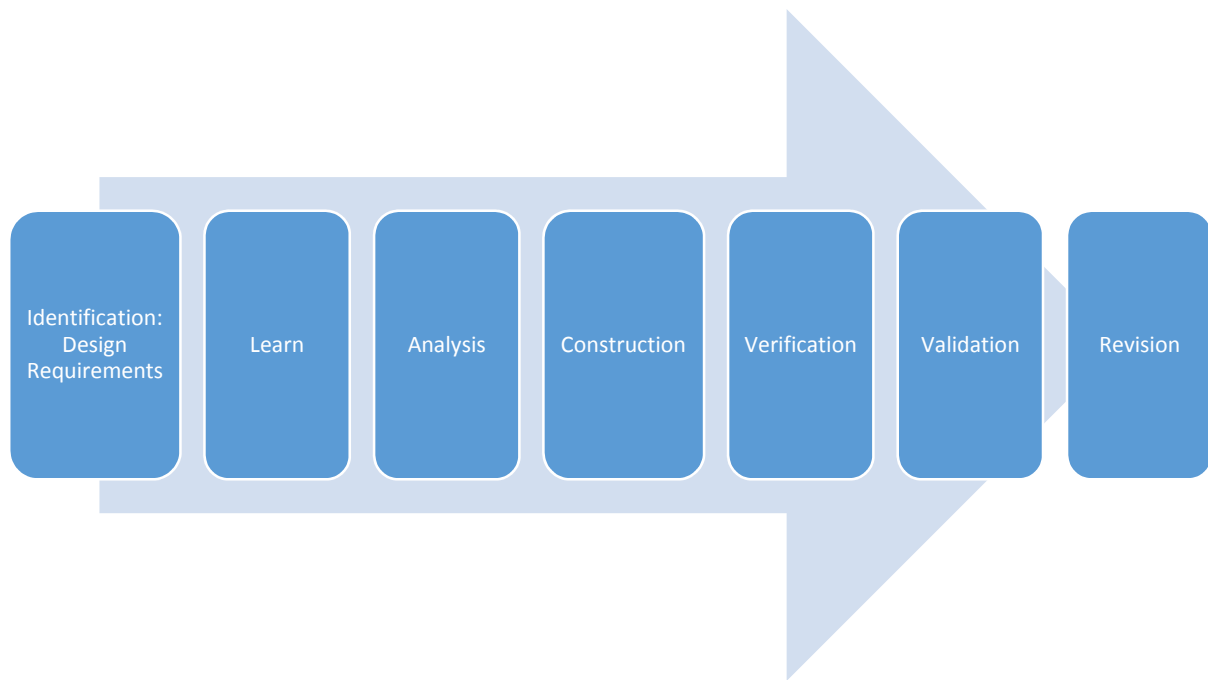
To address the business model innovation challenges mentioned above this thesis has undertaken the challenge of developing a Two-Sided Market Business Model Framework. The Business Model Framework that was developed throughout this thesis addressed the main research question that was developed in the opening chapter. The main research question follows:

*How does a Two-Sided Market Business Model Framework that assists with defining a Two-Sided Market business model to ultimately establish an improved understanding of the Two-Sided Market business model in view look like and how does it function?*

The Business Model Framework is considered as the main outcome of this thesis. The main objectives of the Business Model Framework that was developed are:

- The Business Model Framework needs to be able to **define** a Two-Sided Market business model, and in so doing
- Establish an **aligned understanding** of a Two-Sided Market business model amongst a group of people undertaking business model innovation of any sort and capacity.

The Two-Sided Market Business Model Framework was developed by following a development process. See Figure 39 below for the various steps that was followed to develop the Business Model Framework.



*Figure 39 - The Business Model Framework Development Process*

### 11.3 Research Methodology Reflection

As mentioned earlier, Two-Sided Markets is a relatively new field that has a lot of undiscovered knowledge that still needs to be investigated. Executive managers face remarkable challenges when pursuing business model innovation because they have unclear knowledge regarding Two-Sided Markets. The academic knowledge domain of Two-Sided Markets was studied to address this challenge. A literature study was done to fully investigate the knowledge domain of Two-Sided Markets. Journal articles, textbooks and theses were considered during the literature study.

Table 37 below explains the correlation between the chapters of this thesis and the Business Model Framework development process steps (see Figure 39 above). Each numbered cell indicates which steps were carried out in which chapters. A discussion of each step follows below Table 37.

Table 37 - Business Model Framework Development Process vs. Thesis Chapters

Chapters	Business Model Framework Development Process Steps (see Table 37 above)						
	Identification: Design Requirements	Learn	Analysis	Construction	Verification	Validation	Revision
Ch. 1: Introduction	1						
Ch. 2: Business Model Innovation	1						
Ch. 3: Two-Sided Markets, Multi-Sided Platform Businesses & Network Effects	1						
Ch. 4: Pricing	1						
Ch. 5: Market Growth	1						
Ch. 6: The Value Propositions	1						
Ch. 7: Competition	1						
Ch. 8: Learning from The Business Model Canvas	1	2					
Ch. 9: Business Model Framework Development			3	4	5		
Ch. 10: Business Model Framework Validation						6	7
Ch. 11: Conclusion							

1) Identification: Design Requirements (see Table 37 above)

Chapters 1 to 8 were used to identify design requirements that were used to ultimately construct the Business Model Framework. Chapters 3 to 7 focused on Two-Sided Markets. These chapters occupy much of this thesis because as mentioned Two-Sided Markets as a knowledge field is still new and very much undiscovered. These five chapters aimed to investigate Two-Sided Markets as a knowledge field in depth. The knowledge learned were translated into design requirements for the Framework.

Chapter 2 and 8 studied business models and more specifically business model innovation to learn valuable lessons. The lessons learned were also translated into design requirements for the Business Model Framework.



The design requirements were supposed to be relevant to one of the four business model areas:

- 1) Customer,
- 2) Offer,
- 3) Infrastructure, or
- 4) Financial Viability.

*Other* design requirements that were not relevant to one of the four business model areas mentioned above were listed under *Other* design requirements. As the study continued the design requirements accumulated.

- 2) Learn (see Table 37 above)

Chapter 8 considered The Business Model Canvas to learn how Osterwalder and Pigneur (2010) managed to develop the most successful business model innovation tool that assists with defining business models to ultimately establish an aligned understanding – the same problem that this thesis addressed for Two-Sided Market business models. The lessons learned were translated into design requirements.

- 3) Analysis (see Table 37 above)

The Analysis step was carried out in Chapter 9. This step considered the accumulated lists of design requirements. Through analysing these lists building blocks were developed with corresponding internal dynamics. Other analysis methods were also done to better understand the design requirements which led to the development of the building blocks.

- 4) Construction (see Table 37 above)

In the Construction step the building blocks were assembled to form the first version of the complete Two-Sided Market Business Model Framework. Various methods were used that led to the construction of the Framework. The Construction step was also carried out in Chapter 9.

## 5) Verification (see Table 37 above)

The Verification step served as a means to determine whether all of the design requirements were included in the construction of the Framework. The outcome showed that all of the Customer, Offer, Infrastructure and Financial Viability design requirements were included. However, some of the *Other* design requirements were considered as being included but they were carried over to the Validation step to be verified. The Verification step was also carried out in Chapter 9.

## 6) Validation (see Table 37 above)

The Validation step was carried out in Chapter 10. The Validation step served to validate the Business Model Framework by means of doing four different business model case studies of differing Platform types. This step was especially important because it:

- Showed how the Business Model Framework functions by following the sequential building block development order.
- It also proved that the Business Model Framework is able to define Two-Sided Market business models and ultimately establish an improved understanding of the business model under scrutiny.
- It also proved that the Two-Sided Market Business Model Framework is applicable to all kinds of Two-Sided Market business models. The Business Model Framework is generic.
- It also served as a means to identify flaws and shortcomings in the Business Model Framework.

## 7) Revision (see Table 37 above)

Throughout the Validation step flaws and shortcomings were identified. Only the Cost Structure building block was identified as being flawed. Additional internal dynamics were added to the Cost Structure building block to compensate for the aspects that it lacked. The Revision step was carried out in Chapter 10 after the Validation step.

All of these steps were carried out successfully that eventually delivered the final revised Two-Sided Market Business Model Framework.

## 11.4 The Two-Sided Market Business Model Framework Outcomes

The Two-Sided Market Business Model Framework conglomerates all the relevant knowledge that pertains to Two-Sided business models that was learned throughout the course of this research in the literature study. Although the key concepts of Two-Sided Markets are well established (Cusumano, 2010) conglomerating all the knowledge gives a holistic view of Two-Sided Markets and its current state of development both academically and practically. Combining the complementing knowledge that was researched with a focus on business model innovation makes the Two-Sided Market Business Model Framework unique in many ways. Although this research study was carried out successfully potential future research opportunities exist and will be recommended in the following sub-section.

The Framework primarily serves as a means to define Two-Sided Market business models to ultimately establish an aligned understanding of the Two-Sided Market business model in view amongst a group of people undertaking Two-Sided Market business model innovation. The Business Model Framework simplifies description and discussion when investigating Two-Sided Market business models.

Although this research study was carried out successfully future research opportunities exist. The Two-Sided Market Business Model Framework that was developed also offers space for improvement.

The potential future research recommendations follow.

## 11.5 Recommended Potential Future Research Opportunities

Various potential future research opportunities exist. These opportunities were identified throughout the course of this document.

### 11.5.1 Additional Business Model Framework Validation Cycles

The Business Model Framework was only taken through one cycle of validation. The four case studies that validated the Business Model Framework focused on:

- Showing **how** the Framework functions,
- That the Framework is **generic**, and
- That the Framework assists with defining a Two-Sided Market business model to establish an aligned understanding of a Two-Sided Market business model,
- That the Framework guides and stimulates discussion and description of a Two-Sided Market business model.

Other validation opportunities exist. They are:

- A validation study can be done through interview surveys and business model innovation workshops to determine whether executive managers and/or business model innovators (*e.g.* venture capitalists, angel investors, *etc.*) experience and consider the Framework as being:
  - User-friendly,
  - Practical,
  - Comprehensive,
  - *Etc.*
- A validation study can be done to identify more flaws and shortcomings. These deficiencies can then be studied in depth to address the singular identified shortcoming.
- Other validation cycles can also be done to scrutinize and inspect the Framework to ultimately improve and take it through development iterations.

#### 11.5.2 Building Blocks and Internal Dynamics

This study is merely one approach that was taken to develop a Two-Sided Market Business Model Framework. This study can serve as a foundation to develop an improved Framework.

Also, building blocks can be added or taken away from the existing Framework. The same goes for the internal dynamics. As more and more discoveries are made about Two-Sided Markets internal dynamics will be discovered that govern the building blocks. These internal dynamics can then be added to the relevant building blocks.

#### 11.5.3 Platform Types

Evans and Schmalensee (2005) identified “*four different types of Platforms*” namely:

- |                                 |   |
|---------------------------------|---|
| 1) Exchanges,                   | Apple iTunes Store                          |
| 2) Advertising-Supported Media, | Google search engine and AdWords            |
| 3) Transaction Systems, and     | Visa credit card payment processing network |
| 4) Software Platforms.          | Microsoft Windows operating system          |

These four Platform types were used as the foundation of structuring the case studies (see the corresponding case studies listed above next to the relevant Platform type).

An opportunity exists to further investigate the different types of Platforms that exist. Note that some of the Platform types overlap in some ways but a study can be done to inspect this finding of Evans and Schmalensee (2005).

#### 11.5.4 Winner-Takes-All Dynamics

There are three requirements that Intermediaries should meet in order to enjoy winner-takes-all benefits. All four of the multinational companies that were studied in the validation step proved that they enjoy winner-takes-all benefits:

- 1) Apple has revolutionized the music industry with their iTunes business model,
- 2) Google owns the majority of the web search market,
- 3) Visa is the biggest payment processing network in the world, and
- 4) Microsoft owns nearly 90% of the world's computer operating system market.

It is clear that they are the leaders in their respective industries but is there not perhaps more to their tremendous success than just the three winner-takes-all requirements that they seem to meet?

A study opportunity exist to investigate just what these extraordinarily successful Intermediaries do that outclasses them from their competitors.

#### 11.5.5 Two-Sided Market Knowledge Field

Mentioned multiple times throughout this study is the finding that Two-Sided Markets as a knowledge field is still in its infancy. Various opportunities exist to re-evaluate findings or further pioneer the undiscovered knowledge that awaits.

## 11.6 Final Conclusion

Two-Sided Markets offer innumerable opportunities for businesses that dare undertake the unconventional yet promising prospects that are offered by Two-Sided Markets and Network Effects. Seeing that Two-Sided Markets is still a relatively new concept many opportunities await to be undertaken, both academically and practically. Opportunities await in both the academic field as well as the business world.

Poorly defined Two-Sided Market business models and an undiscovered Two-Sided Market knowledge field has aggravated this challenge of pursuing these promising prospects that Two-Sided Markets offer. The Two-Sided Market Business Model Framework that was developed throughout this thesis hopes to eradicate these challenges or at best contribute towards addressing these challenges.

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