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Chair of Corporate Strategies

PLATFORM ECOSYSTEM: AN ANALYSIS OF THE BUSINESS MODEL EVOLUTION THROUGH
BLOKKBUSTER AND NETFLIX CASE STUDIES

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Table of Contents

	1
Introduction	3
Chapter 1	5
<i>Platforms: definition and characteristics</i>	5
1.1 Introduction to platforms	5
1.2 Platforms: definition and key elements	7
1.3 Network effects	11
1.4 The platform ecosystem	14
1.5 Metrics	15
1.6 Platforms and the new internal organisation of the firm	16
1.7 Common problems and relative strategies	17
1.8 Types of platforms	20
1.9 Why building a platform business model?	22
Chapter 2	25
<i>Defining platform governance, policy and strategy</i>	25
2.1 Platform openness	25
2.2 Governance	28
2.3 Policy	31
2.4 Strategy	37
Chapter 3	40
<i>The platform business model</i>	40
3.1 From pipeline to platform	40
3.2 The interaction-first business model	46
3.3 The platform stack	49
3.4 The core value unit	53
3.5 The nature of the interaction	54
3.6 The core interaction	56
3.7 Filters	59
3.8 The platform canvas	60
Chapter 4	65
<i>A comparison between Blockbuster's and Netflix's Business Model</i>	65
4.1 The home entertainment industry: an overview	65
4.2 A focus on Blockbuster's history	69
4.3 Blockbuster's Business Model	70
4.4 Netflix's platform business model analysis	78
4.5 Netflix's platform business model canvas	80
4.6 Traditional business model versus platform business model	88
Conclusion	92
Bibliography	94
Abstract	114

Introduction

In the last decades, the world experienced a deep technological revolution which led to a radically new way of doing business. Across many industries and sectors, digital technology has been transforming business strategy, business processes, products and services as well as interfirm relationships.

In this context, platforms made inroad in the economic scenario, thus becoming the main source of value creation. These new entities made old pricing and revenue models obsolete, demanding the design of new business models. In most cases, these disruptive business model innovations came from outsiders, such as Apple in the music industry, Airbinb in the hotel industry or Netflix in the movie industry. On the other hand, well-established companies that refused to change their structure inevitably failed. This kind of business model innovation, in fact, is necessary to maintain competitive advantage, but it is also difficult to implement. Many companies do not know where to start, especially because of the lack of common applicable tools. Widely adopted frameworks, such as Osterwalder's and Pigneur's business model canvas, while adequate to represent traditional business models, are not the best tools to support business model innovation.

The purpose of this thesis is to demonstrate that each business that wants to stay competitive must embrace a platform business model. Platforms present, in fact, huge economic opportunities in terms of performance, efficiency and overall growth. However, in order to properly capture value, these require the design of new tools.

In the context of the home entertainment industry, the business model of two different companies will be analysed. First, the traditional Blockbuster business model will be presented using Osterwalder's and Pigneur's canvas. Subsequently, Netflix business model will be built using the platform business model canvas theorised by Paul Sangeet Choudary, co-chair of the MIT Platform Strategy Summit. As we will see, platforms present brand new elements that need the design of new mechanisms of value capture, not considered by traditional business model frameworks.

This thesis is structured as follows:

Chapter 1 defines platforms and describes their main constitutive elements. Chapter 2 presents multiple governance models and proposes an intermediate solution for platform management. Chapter 3 illustrates step by step the transition from a traditional "pipe" business model, to a "platform" one and presents Choudary's platform business model canvas. Finally, Chapter 4 analyses

the Blockbuster business model through the application of the traditional Osterwalder's and Pigneur's business model canvas, and then analyses the Netflix business model using the Choudarys' platform canvas. Finally, the main similarities and differences between the two companies are highlighted to demonstrate that any company that wants to succeed in the current scenario must switch to a platform business model, otherwise it won't stay ahead of existing competitors.

Chapter 1

Platforms: definition and characteristics

1.1 Introduction to platforms

Nowadays, companies are required to constantly invent new products in order to keep up with the pace at which innovation expands. Because of this evolution, the business model changes as well and it experiences considerable waves of innovation. As in the “Technology vision 2016” statement by Accenture, platforms make inroad in almost every industry and they are the source of value creation in the new digital economy (Accenture, 2016). In fact, every industry is now opened to platform technology, which strongly increases the efficiency of the company by giving it a sound competitive advantage. More specifically, platforms are the reason for the exponential success of born global companies such as Google, Amazon or Alibaba. Their strength lies within the way the platform is built and within their business model that provides new opportunities for growth. According to Accenture, digital economy will experience an exponential growth by 2020 and platforms will be the key assets and the main source of value. The top 15 public platform companies (Alibaba, Alphabet, Amazon.com, Apple, Baidu, Ebay, Facebook, JD.com, LinkedIn, Netflix, Priceline.com, Salesforce, Tencent, Twitter and Yahoo!) represent now \$2.6 trillion in market capitalisation worldwide (Accenture, 2016) and they keep on attracting huge quantities of investments. Furthermore, there are more than 140 “unicorns” (startups with valuation of \$1 billion or more obtained by fundraising) and the study predicts that within five years, platforms and digital assets will be included in the elements considered in financial evaluation. International Data Centre (IDC) forecasts that by 2018, more than 50% of large enterprises and more than 80% of enterprises with advanced digital transformation strategies will create or partner with a platform (Newmark, 2016). In addition, almost every industry will embrace the cloud model that will increase the probability of success of the company.

Indeed, platforms require the introduction of a new business model to consider new internal and external sources of value creation. Specifically, new business models follow three basic rules (Accenture, 2016):

1. Network effects/Two-sided markets: Consumers and producers are two different actors playing on the same market field and they are mutually dependent for value creation, meaning that consumers benefit from producers and vice-versa;
2. Distribution power law: it relates to the fact that platform business models allow for continuous profit generation. In fact, scale is enabled by allowing other companies to generate

profit in the “long tail” of the distribution curve, hence avoiding the diminishing returns associated with traditional pipe business models.

3. Asymmetric growth and competition: two companies catch the same market opportunities but with completely different resources and approaches.

The value is now created from both sides of the market and by exploiting resources that the company does not own. Figure 1 highlights the main differences between the industrial era and the digital economy era:

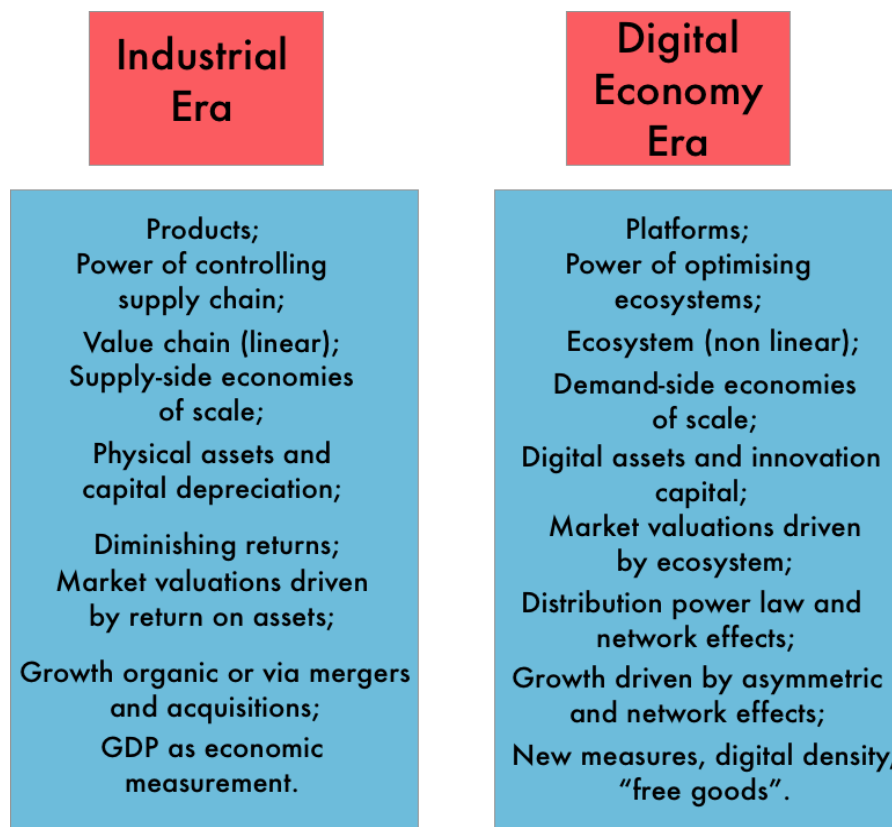


Figure 1- Macroeconomic transformation: from the industrial era to the digital economy era. Adapted from: Platform economy: technology driven business model innovation from the outside in, p.9 (Accenture Technology R&D, 2016).

Hence, platforms allow for a *pull-based approach* which strongly increases efficiency. On the contrary, in the past, sellers were stuck in the economy of production and distribution, so they applied a *push-based approach*. This consists in forecasting the level of demand and then planning production accordingly. A push-based approach creates efficiency only in the presence of accurate forecasts or, otherwise, if the seller can modify the level of customer demand by altering price or increasing advertising. Two trends are eliminating the conditions for push-based approach success: the increasing digitalisation of infrastructures and the globalisation. The cost of data storage bandwidth and computing power (Hagel, 2015), in fact, has been decreasing exponentially and, at the same time,

global trade has increased at about 7 percent per annum on average for almost three decades (World Trade Organization, 2013). These two trends together produce what researchers at Deloitte’s Center for the Edge call “the Big Shift” (Hagel, Brown, Samoylova & Lui, 2013): a radical change that forces to reshape all the foundations.

1.2 Platforms: definition and key elements

Unfortunately, there is not a univocal definition for the term “platform”, since different people give a different meaning to this word. In general, a platform helps connecting participants and resources on an as-needed-basis more effectively than any other mechanism. Its main purpose is to connect producers and consumers to enable value-creating exchange activities. According to Sangeet Paul Choudary (2015, g)¹, this is achieved by:

1. Architecting incentives that repeatedly pull these participants to the platform,
2. Providing a central infrastructure on which participants create and exchange value,
3. Matching participants with each other and with content, goods, services created on the platform.

The author defines a platform as: <<a plug-and-play business model that allows multiple participants (producers and consumers) to connect to it, interact with each other and create and exchange value>> (Choudary, 2015, g). This is how it works: producers usually “plug-in” and create on top of a platform in a way that when consumers “plug-in”, they find exactly what they are looking for. This is the principle behind every platform. For example, developers create apps on top of Apple, sellers offer goods on top of EBay, and so on. In this way, when consumers connect to the platform, their demand matches with the producers’ supply and a virtuous cycle of value creation is triggered. Choudary also writes that the platform’s purpose is <<to consummate matches among users and facilitate the exchange of goods, services, or social currency, thereby enabling value creation for all participants>> (Parker, Van Alstyne & Choudary, a, 2016, p.5).

In sum, interactions are the key element of a platform because they allow participants to connect, create and exchange value. Each platform has a Core Interaction, a series of actions which participants constantly perform to pull value out of the platform. It is the most important activity that takes place on a platform and that attracts most of the users. Core interactions involve three elements: participants, the value unit and the filter. Participants are both producers, thus creating value, and

¹ Sangeet Paul Choudary is a C- level executive advisor ranked by Thinkers50 Radar (a global ranking of top business thinkers) among the top 30 emerging thinkers globally. He is co-chair of the MIT Platform Strategy Summit at the MIT Media Labs, an entrepreneur-in-residence at the INSEAD Business School and his work has been featured in the *Harvard Business Review*, *MIT Technology Review* and *Wired*.

consumers, thus consuming value. In building the core interaction, both roles must be defined, otherwise the platform does not create value. In addition, despite everyone specialises either in the role of consumer or in the role of producer, participants may simultaneously perform both roles. On Airbnb, the same person may be a guest or a host, although he will perform mainly one of the two activities. Anyway, a well-functioning platform allows users to easily switch from one position to another. It may also happen that a multitude of participants play the same role in a single interaction. For instance, on Instagram, you need users (producers) who create and post pictures, as well as other users (consumers) who see, like, comment and eventually re-post them. In this framework, consumers can be simultaneously producers and vice-versa. Both categories are needed for the platform to work and to succeed on the market and all these actions are required for the engine to perform adequately. The core value unit is the engine of core interactions. In his book, Choudary defines it as <<the minimum standalone unit of value that is created on top of the platform. It represents supply or inventory created on top of the platform>> (Choudary, 2015, d, p.95). For Airbnb, for instance, the core value unit is the list of rooms or houses available for rent. Finally, a filter is a software-based tool to ensure the exchange of appropriate value units between participants. It is a quality check instrument to guarantee that participants receive only relevant value units.

In sum, although some platforms have a more complicated structure, the basic one is shown in Figure 2:



Figure 2 - Adapted from: Platform revolution, p.41 (G. Parker, M. W. Van Alstyne, S. P. Choudary, 2016)

Among the actions performed in the Core Interaction it is possible to observe the following: creation, consumption, curation and customisation. Creation means that there is at least one user who produces value; similarly, consumption refers to the fact that there is at least one consumer of the above-mentioned value. Creation increases the amount of supply, the reason why a good system of curation is required to ensure the right quantity and quality of value. Finally, customisation refers to the platform's ability to create a relevant experience for the consumer. On Pinterest, for instance, when a new user signs up, he is asked to indicate topics of interest and to follow relevant boards to create a filter that will deliver a customised experience. Customisation attracts new users and boosts the virtuous life cycle of the platform. Therefore, it is parallel to the quest for platform scale.

Putting all this information together, regarding YouTube, creation is the activity of uploading videos, consumption is the activity of viewing videos, curation regards the possibility for users to up-vote, down-vote or report videos and customisation refers to the ability of the platform to suggest videos based on the chronological history of the user (Choudary, b, 2015).

These four actions must be continuously performed across all the interactions. The starting point for a platform design should always be its Core Value Unit which should then lead to the actions aimed at the creation and consumption of value. Finally, the last step is the design of the interface that makes these actions feasible (Figure 3 and 4).



Figure 3 - The core value unit. From: The three design elements for designing platform (Choudary, 2015).

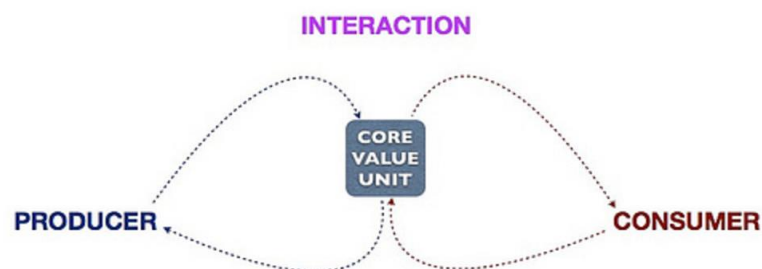


Figure 4 - The core interaction. From: The three design elements for designing platform (Choudary 2015).

The two figures above are sequential. After designing the core value unit, the platform owner must design the core interaction, a set of actions required for the creation and consumption of value units on the platform. Although a platform may present multiple value units and multiple interactions, there will be one specific interaction which is core to the value proposition of the platform.

Finally, once the design of the core value unit is completed and the interactions are identified, platform design is a lot simpler (Figure 5).

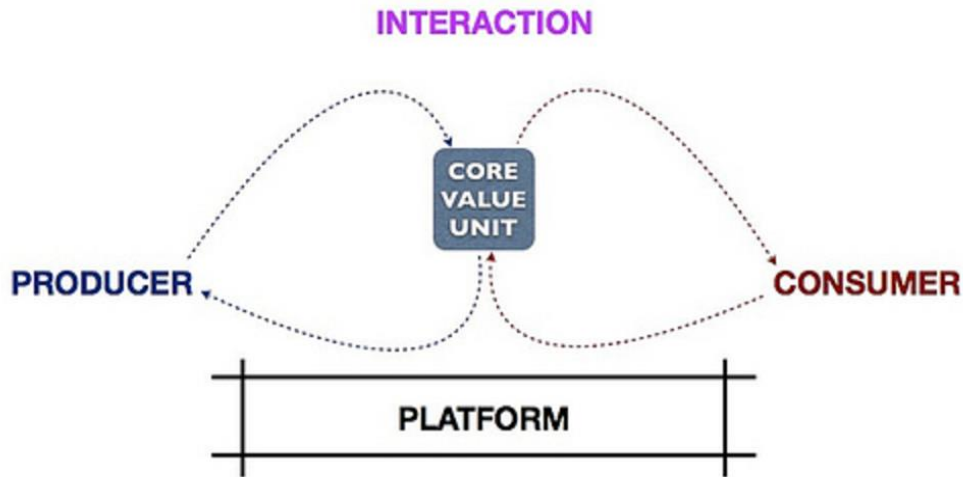


Figure 5 - The platform built over the core interaction. From: The three design elements for designing platform (Choudary 2015).

Gradually, platform owners may introduce more and more interaction layers on top of the core interaction, thus increasing the quantity of value generated for the users. To ensure core value interactions, platforms should play three different activities. They should *pull* producers and consumers towards the platform; *facilitate* their interactions, thus favouring value exchange; *match* supply and demand effectively, by exploiting available information.

In this framework, data stored in the platform are a key factor for the overall success of the system of interactions among participants. Specifically, in the platform scenario it is more appropriate to talk about “big data”. Managing platform interactions in real time, in fact, requires a huge quantity of information to partially limit market imperfections and to better match supply and demand. Companies handle a significant amount of data which require to update the storing models, posing new and difficult privacy issues. Studies conducted by the Boston Consulting Group (Evans & Forth, 2017) show that between 2000 and 2012 the world’s production of data increased by 2000-fold and the stock of data is expected to double every two years. In addition, 99 percent of this stock is digitalised and half of it has an IP, meaning that it is accessible from every part of the world at any time.

Information and interactions are both the sources and the key assets of a platform. In fact, their main role is to allow producers and consumers to engage in high-value exchanges. This is referred to as a “two-sided market” and we can better understand it by providing the example of the Apple move from the iPod to the iPhone (Figure 6).

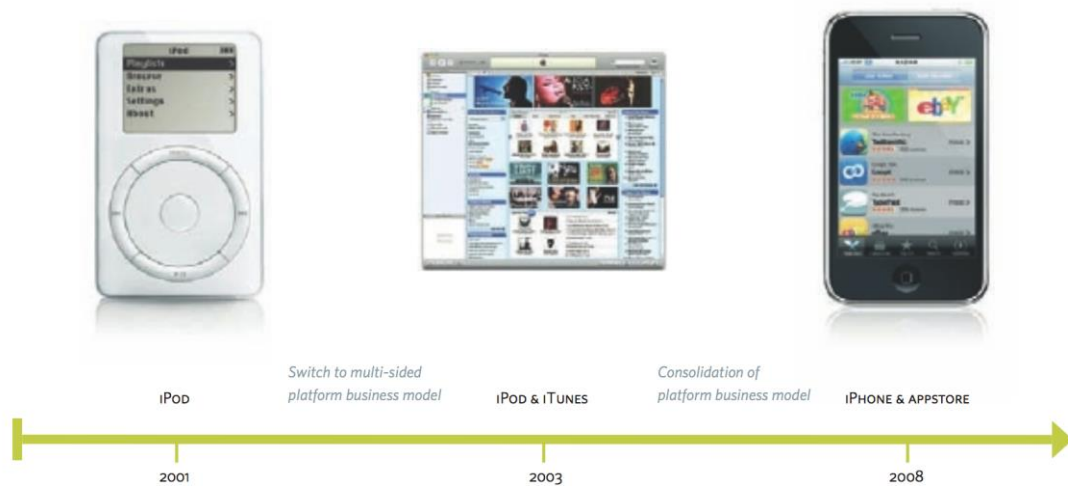


Figure 6 – The timeline of Apple’s transition to a platform. From: Business model generation, p.91 (Alexander Osterwalder and Yves Pigneur, 2010).

The former was a stand-alone device, while the latter became a strong multi – sided platform in which third party applications were controlled by Apple through the Apple store. More in details, when Apple introduced the iPod in 2001 it did not exploit a platform business model. The iPod was a stand-alone device used to store music from both online and offline sources. In 2003, Apple connected the iPod to the iTunes Music Store, partially transitioning to a platform business model. Users could then download music directly from this new platform, which basically connected music rights-holders and buyers. Finally, in 2008, Apple introduced the Apple Store which connected app developers and app users. In fact, users could download applications directly from the iTunes Music Store and install them on their iPhone. Meanwhile, through the Apple Store, app developers managed sales of all the applications, allowing Apple to gain a fee on every download (Osterwalder & Pigneur, 2010). The Apple Store became the means to create value both for developers and users and as the number of participants grew, the value generated grew as well. This phenomenon is called “network effects” and it is the foundation of every platform.

1.3 Network effects

The phenomenon of “network effects” refers to the impact that the number of users has on a platform and on the other participants. Positive network effects arise when there is an increase in value caused by an increase in the number of users. On the other hand, negative network effects refer to the situation in which a large user base reduces the value created for each single participant. A well-managed platform usually generates positive network effects and it is considered valuable and competitive on the market.

Network effects are the result of a radical technological innovation that during the last decades also stimulated a shift from the supply-side economy of scale to the demand-side economy of scale. The main purpose of a firm in the supply-side economy of scale is to maximise production efficiency. Specifically, the company tries to reduce the unit cost of production as much as possible, to increase the quantity of products offered, hence becoming more and more efficient on the market. The principle behind it is that the bigger the business, the lower the costs of production, marketing and distribution. In the past, this virtuous loop gave birth to champion companies such as General Electric or Ford.

Today, even if supply-side economies of scale are still present on the market, the Internet era led to demand-side economies of scale². These are also called network effects: the higher the volume of platform participants, the greater the value of the platform itself. This is because, the larger the network, the higher the availability of data used to match supply and demand. Furthermore, as the network grows, more users are attracted by the virtuous mechanism, thus connecting to the platform and contributing to market expansion. In this framework, external forces are considered as “accretive” because they add value to the business. On the other hand, in the supply-side economy, governed by Porter’s five forces model, external forces are considered as “depletive”, since they withdraw value and resources from the business.

Two-sided network effects are a subsystem of network effects that arise in two-sided markets, where two different actors are needed for the platform to create value. On Uber, for example, both drivers and riders are involved and they continuously attract each other (Figure 7). It is important to nurture both sides of the market simultaneously, otherwise there is no value creation. Therefore, in this circumstance it makes sense to accept permanent financial losses in one side of the market with the sole purpose of attracting the other side, if and only if, profit earned in the former exceeds losses incurred in the latter (Parker, Van Alstyne & Choudary, 2016, a, p.21).

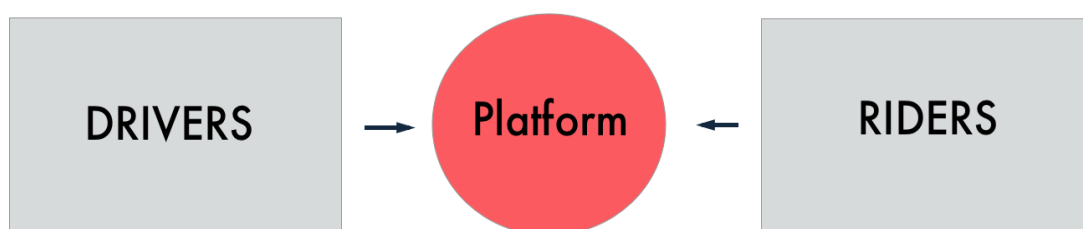


Figure 7 – Uber is a two-sided market: both drivers and riders are needed to perform the interaction, otherwise there is no value creation.

² Term used for the first time by Hal Varian, the chief economist at Google, and by Carl Shapiro, a business professor.

Network effects strongly depend on the size of the network (David, 1985). The most successful platforms are the ones that allow for frictionless entry by users, that is the ones that allow for quick and easy expansion, <<thereby scaling the value that derives from network effects>> (Parker, Van Alstyne & Choudary, 2016, a, p.24). The corollary of scalability states that both sides of the network grow simultaneously. Google is extremely efficient in that, thanks to its algorithm that considers the degree to which web pages link to each other. On one hand, page producers consider page viewers' preferences; on the other hand, more links from highly-ranked pages lead the page to high-priority search results. As a result, Google nurtures both sides of the platform simultaneously, reaching outperforming results (Parker, Van Alstyne & Choudary, a, 2016).

Unfortunately, it may also happen that users' interaction leads to negative network effects, usually because of poor curation mechanisms that impede participants to find the right matches to create value. Sometimes, negative network effects are caused by the lack of proper data elaboration. In fact, a large quantity of data generally increases the probability to find right matches and to design effective curation mechanisms. This is referred to as "data driven network effects". These require continuous quality checks and updates (Parker, Van Alstyne & Choudary, 2016, a, p.28).

In accordance with the work of Geoffrey G. Parker, Marshall W. Van Alstyne, Sangeet Paul Choudary (a, 2016), two-sided markets give rise to two types of network effects that can be either positive or negative: same-side effects and cross-side effects. Same-side effects represent the impact that users on one side of the market have on users of the same side, namely the effect that consumers have on other consumers and producers have on other producers. Positive same-side effects, for example, arise for Apple users as the customer base grows. In fact, Apple devices offer a lot of services that are incompatible with other brand devices. Therefore, the consumers' benefit grows as the user base grows as well. On the contrary, negative same-side effects may arise when the number of producers of a specific service grows too much, leading to inefficiencies in finding the right matches between supply and demand.

Cross-side effects are the impact that users on one side of the market have on users on the other side, namely the impact that consumers have on producers and vice-versa. Positive cross-side effects originate for operating systems providers as the number of users increases: a virtuous loop takes place where software providers are more and more willing to offer their product, which, on the other hand, is compatible with the devices of a growing customer base. Negative cross-side effects refer to the situation where, as the number of producers or consumers grows, complexities and rigidities arise in the opposite side of the market, causing inefficiencies on the platform.

In sum, network effects are the focal point of modern platform technologies and their value must be now considered in the financial evaluation. For instance, this happened in 2016 when private equity

markets gave Uber a valuation higher than General Motor’s which clearly showed how investors considered new items in the evaluation methods. Hence, the focus of the company shifts from the inside to the outside, so that management of externalities becomes crucial. As the authors of “Platform revolution” write in their book, the major source of growth comes from network orchestration, rather than from internal resources and the major source of competitive advantage lies exactly in the community of users that the platform crates.

1.4 The platform ecosystem

The main purpose of a platform is to create value for its participants. These must always be incentivised to stay connected to the platform, otherwise, if they feel that their needs may be better satisfied elsewhere, they may defect. So, a platform connects producers and consumers to make value creation possible. Though there are many varieties of platforms, they all share the same basic structure and they present four main players (Figure 8):

1. *Owners* who control intellectual property rights and governance;
2. *Providers* who serve as the platform’s interface with users;
3. *Producers* who create the offering;
4. *Consumers* who use the offering.

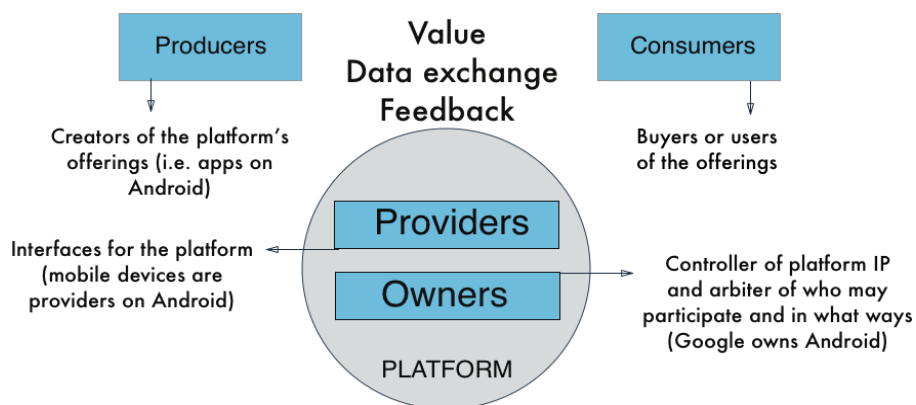


Figure 8 - The four main players of a platform. Adapted from: Pipelines, platforms, and the new rules of strategy (Marshall W. Van Alstyne, Geoffrey G. Parker, Sangeet Paul Choudary 2016).

The boundary between these four roles is not completely defined, so players usually shift from one role to another.

Players’ activities may be either accretive or depletive (Parker, Van Alstyne & Choudary, a, 2016) and the platform should encourage the former and discourage the latter through an adequate

governance. In addition, it may happen that participants become direct competitors of the platform itself.

Therefore, platforms focus on intensifying interactions among participants. Key strengths for a platform are the number of interactions and the relative network effects which create competitive advantage. This is the reason why it is important to create a design which repeatedly attracts both producers and consumers. However, the centre of attention is always on the value of interactions rather than on their volume. Plenty of platforms started their business with a high quality, but low volume interactions, and stayed competitive on the market. The most striking example is Facebook: at the beginning, it was created as a private network to connect Harvard students, then it slowly opened to the rest of the world.

Platforms are governed by rules and they can be based on different architectures with different degrees of openness. An open architecture allows participants to freely access platform resources and to create more value. Open governance means that actors other than the owner can establish the rules of the game and the reward system. On the contrary, in a closed architecture, the owner of the platform is the only decision maker who also sets rules to limit the access of resources. Since incentives are the engine of interactions, a good system of rewards must be ensured both in open and closed architectures. Nevertheless, a free access may destroy value if it lacks quality control. Chatroulette ran into this problem. It was a platform connecting people all over the world for webchats. It had no rules for access and suddenly run into what has been defined the “naked hairy problem”. The company started to apply filters but this could not heal the suffered reputational damage. For this reason, the most successful platforms are those that ensure openness to maximise interactions, but simultaneously apply filters to guarantee a minimum level of quality and safety to its users (Figure 9).

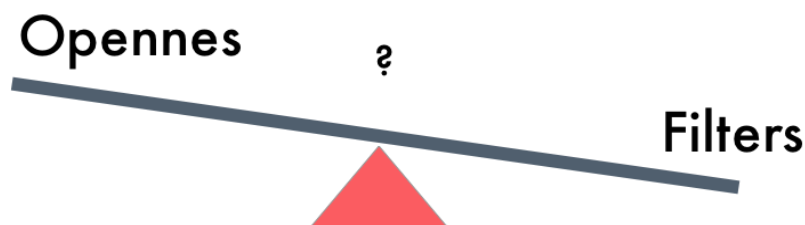


Figure 9 - Openness must always be balanced with filters in a platform. This ensures both participation and relevance.

1.5 Metrics

Another major change in platform business model involves metrics used to quantify the platform success. Particularly, it is important to monitor the performance of core interactions. Among the most used metrics, we can name:

1. The interaction failure. This is a missed opportunity to match supply and demand. For example, if one consumer opens the Enjoy application and does not find available cars, this results in diminishing network effects.
2. The metric of quality match control: users' and producers' needs should always be aligned to each other.
3. The engagement. This is measured as quantity of content sharing or repeated visits on a platform.

The lack of monitoring all these elements may result in negative network effects, which must always be avoided by managers.

1.6 Platforms and the new internal organisation of the firm

The transition from a pipeline model to a platform one changes the organisation of the firm. While in the past, pipeline firms outsourced part of their internal activities, now companies aim at managing an entire external network which complements or totally substitutes internal functions. This is a revolution for the organisation of the firm, as boundaries disappear and value is created both inside but especially outside, with no direct control of the firm itself. Nowadays, marketing involves the creation and spread of messages by consumers themselves who play an active role in the activity of advertising and sponsoring the product or service. Information Technology (IT) is now focused on managing external social networks among which consumers themselves participate in the product design. These systems evolved from back-office enterprise resource planning (ERP) systems to front-office consumer relationship planning (CRM) systems and recently to out-of-the-office experiments using social media and big data (Parker, Van Alstyne & Choudary, 2016, a). The function of the human resources is to leverage the network strength to increase internal talent. Also, the information sharing has improved productivity and reduced costs. For what concerns finance, accounting is now focused also on external ledgers. Some organisations, like IBM are adopting the block-chain technology which allows anyone to read and share ledgers. This incentivises transparency and, as a result, it strengthens trust and boosts network effects. Furthermore, there is a shift from a shareholder perspective to a stakeholder perspective, meaning from internal to external influences. Operations and logistics in the pipeline model focused on the management of just-in-time inventory and supply chain systems. In the platform model the focus is on the management of “not-even-mine” inventory

(Van Alstyne, Parker & Choudary, 2016, c), meaning on the resources owned by the participants of the network. The platform owner, in fact, does not have control on the resources anymore. Its activity is limited to the orchestration of the value exchanges between producers and consumers. Tom Goodwin, senior vice president for strategy at Havas Media, writes: <<Uber, the world's largest taxi company, own no vehicles. Facebook, the world's most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. And Airbnb, the world's largest accommodation provider, owns no real estate>> (Goodwin, 2015).

1.7 Common problems and relative strategies

The value of a platform increases proportionally with the number of users. However, it must reach the so called critical mass to start generating value. Choudary defines the critical mass as <<the minimum size of the user base at which enough members of producers and consumers exist to>> (Choudary, 2015, e). Hence, one of the most common problem faced by platforms is the mutual baiting problem, often referred to as the chicken-egg problem. In two-sided markets both producers and consumers need to be on the platform to seed it. They must be brought simultaneously on the market, as no consumers will connect to the platform without producers and vice versa. To break this vicious cycle, it is possible to <<provide an alternate bite to one of the sides>> (Choudary, 2015, e) either starting from consumers or producers. Once that the producers' or the consumers' side is seeded, it acts as a magnet for the other one and the network effects start working. As a matter of fact, platforms do not have any standalone value; rather, they acquire value by attracting more and more users. Therefore, in his work Choudary writes that platforms are initially ghost towns. This expression refers to the fact that a platform will not attract neither consumers nor producers unless there is a large availability of complementary goods. A platform owner can solve this problem both by creating complementary goods himself or incentivising producers to provide them. When Steve Jobs launched the iPhone in 2007, the App Store did not exist and the device was equipped with in-house developed apps. The App Store, which is the reason why today the iPhone has a huge success, was only launched a few months later and now, together with the iPhone, it constitutes an integrated platform. Apple understood that a platform has no standalone value. By exploiting this strategy and thanks to the superior design and hardware of the iPhone, Apple succeeded in building an initial bunch of consumers which worked as a bait for apps developers. In this way, Apple also established a standard for the future producers in terms of design and quality. One of the drawbacks of acting as a producer of complementary goods for a platform is that, as the number of producers increases, there are more entities competing directly with the platform owner. However, the consumers' benefit highly increases. The platform owner can also foster interactions among producers and consumers or provide

access to new production infrastructures that the user would use even when the platform is still a ghost town.

Ensuring the presence of high quality producers or exploiting the channels of a well-known platform can be alternative mechanisms to obtain new participants to the network, both in terms of producers and consumers. Some platform owners even created false activities to make users think the platform was fully in business, in a way to lock-in customers and attract new ones (Uber “phantom cabs”).

Choudary also writes about the double company problem. In a two-sided market, both producers and consumers must be acquired to make the platform work. The strategy used by platforms’ owners is usually to focus on one side at a time. Starting from *producers*, this process involves:

- Seeding the producers on a standalone value. The platform owner could decide to focus on just one side of the market that while growing will automatically attract the other side.
- Act as a producer on your own platform. This strategy will be mainly applied to set a specific standard for complementary goods’ supply. In this way, the platform owner acts as a model for future producers.

On the other hand, the process of starting from *consumers* involves mainly incentivising them. This especially shows up in the social network environment, where the function of inviting friends has taken more and more space. Usually, incentives arise from a compensation that the platform owner offers to the most active users. Let’s think about Dropbox. This platform offers 500 MB for referral, up to a maximum of 16 GB (on basic accounts) and 1 GB for referral up to 32 GB (on premium account). Clearly, consumers are strongly encouraged to take part on the game and, at the same time, they shift from the pure role of consumers to the one of producers.

To attract participants, it is also important for the platform to allow consumers to easily accomplish their objectives and to create high quality content. Furthermore, the growing democratisation requires controlling mechanisms that Choudary defines “curation”, to ensure a high-quality standard on the platform. There are mainly three curation mechanisms:

1. Algorithmic curation;
2. Social curation, based on consumers’ ratings and votes;
3. Editorial curation, basically a manual curation which usually takes place in the early stages of the platform creation (Choudary, 2015, c).

Gradually, manual curation evolves in automated social curation based on socially driven feedbacks. The platform owner should always maintain a delicate balance between a democratic access to the network for producers and consumers and a constant quality check. It is also important to provide consumers with incentives to create content, incentives that go beyond their pure desire of self-expression. In fact, once that a platform reaches the critical mass, it is also efficient to convert

consumers into creators, to increase the value generated by the network. In the end, this means converting consumers to producers. When consumers become producers, and start creating value for the network, the productivity of the platform increases exponentially, along with its efficiency. To understand it, let's make an example. Platforms like Quora are used to get answers. It may happen that common questions are already displayed and suggested so that the entire searching process is simplified for the user. However, when the consumer does not find the question he was looking for, he may add it. In this way he starts creating content, shifting from the role of pure consumer to the one of producer (Figure 10).

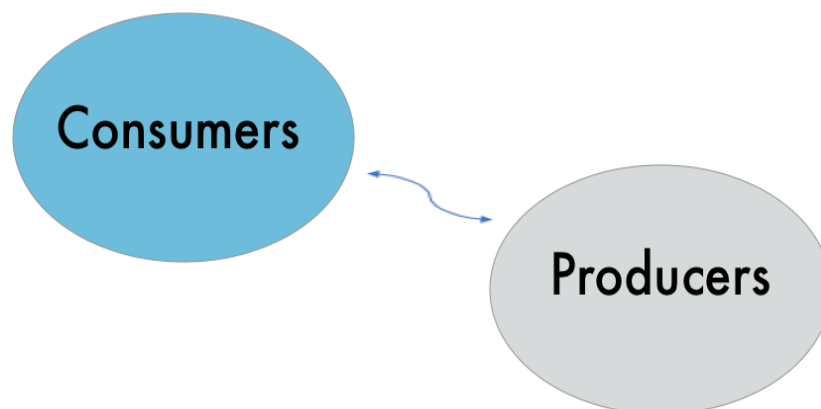


Figure 10 - In a platform, producers and consumers are two roles, rather than specific segments. This means that the producer shifts from the role of consumer and vice-versa, in a constant process of value co-creation.

There are also different strategies to simultaneously focus on both consumers and producers:

1. Provide a single-user utility and move to a multi-user mode. This strategy can be understood through what Choudary calls “appification”. The author explains how users do not see apps and social networks in the same way. Rather, they see apps as instant gratification providers and as tools that do not require too much effort. Networks, on the contrary, need a continuous investment, because the more time a user is connected to the platform, the more value is created. Therefore, one of the most common strategies to grow as a platform is to start as an app and subsequently evolve into a network. Instagram, for instance, was initially an app to modify pictures applying simple filters. Now it is a social network, competing with Facebook in terms of ability to create engagement. Differently from the strategy of seeding producers on a standalone value, in this circumstance, the platform owner does not need to actively seed one of the two sides of the market. Instead, when starting as an app, the relationships within the network naturally grow in the background, with no need for the owner to intervene.
2. Focus on a niche. The assumption of this strategy is that every business running on a user generated content (UGC) has no value *per se*, but it needs producers and consumers to connect

and interact. The most efficient way to reach this objective is to focus on a micro-universe³ rather than targeting a mass market. Advantages come from the reduced costs incurred and the reduced probability to fail. In fact, focusing on a niche market means working with a limited group of experts who can help specialising in the design and production, increasing the overall efficiency of the process. Furthermore, a smaller critical mass is required to kick-start the business, which increases the probability to match-make supply and demand. Of course, the micro-universe is just the starting point that triggers the virtuous cycle of the network effects. Most businesses slowly grow until they reach the mass market. We have already talked about Facebook: at the beginning, it targeted a niche market, meaning the narrow scope of the Harvard students. Then, it spread across different colleges within the United States, then across schools outside the United States and finally it went global. Indeed, Facebook demonstrates the effectiveness of targeting a niche as a first step for a platform to conquer the mass market.

3. Make a two-sided platform one-sided: this happens when producers' and consumers' objectives are aligned since the boundary between them is blurred. In this way, it is easier to create an environment where the matchmaking of supply and demand is faster and creates value.
4. Don't try to change behaviour on both sides simultaneously: products that find more rapid adoption are the ones that better fit customers' needs and that allow customers to satisfy their needs more rapidly. When difficulties incur in seeding one of the two sides of the market, it means there are barriers to adoption. The more users need to change and learn new behaviours from scratch, the higher are those barriers. This phenomenon is particularly intense in two sided markets where both sides must be seeded simultaneously. One possible strategy to stem it is to start a new business by changing behaviour in just one side of the market. It significantly reduces switching costs faced by users and allows the platform owner to focus his effort on just one side of the platform at a time. Of course, the platform should offer a significant advantage to consumers and producers to incentivise them to switch to a new behaviour. This is the reason why some platforms also practice backwards compatibility allowing users to choose whether to adopt the new model or not.

1.8 Types of platforms

Every well-functioning platform has at least two elements:

³ Choudary calls a niche market, a "micro-universe".

1. A governance structure which clearly defines participants, their roles, rules for interaction and dispute resolution;
2. An additional set of standards and protocols to facilitate coordination, collaboration and connection (Hagel, 2015).

Given that, it is possible to categorise platforms in three main groups: aggregation platforms, social platforms and mobilisation platforms (Figure 11).

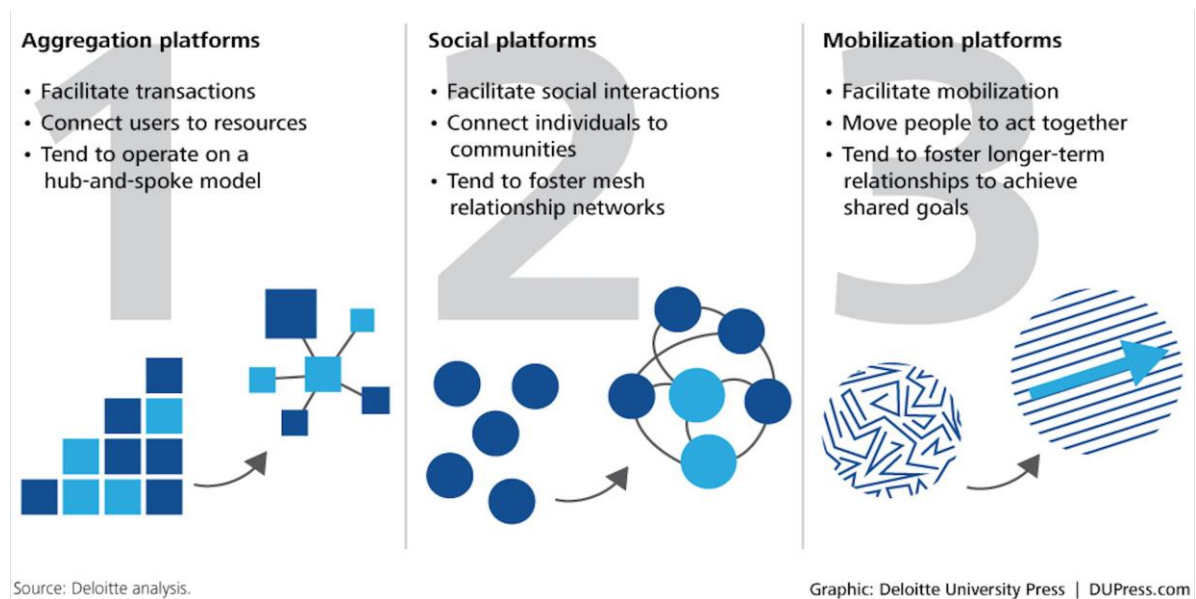


Figure 11 - Three types of platform. From: The power of platforms (John Hagel, 2015).

The main objective of *aggregation platforms* is to give a response and satisfy a need expressed by the user. They accomplish this task by aggregating resources and matching the user with the right resource. These platforms are usually built on a hub-and-spoke model: the platform owner orchestrates the transactions by acting as a broker. It is basically a centralised model in which the platform owner is also the manager of the transactions flow. According to John Hagel, there are mainly three types of aggregation platforms: 1. Data aggregation platforms, which in the end are data storage (ex. Scientific database); 2. Marketplace and broker platform, like E-bay or the online App Store, in which buyers and suppliers meet; 3. Contest platforms: they are a representation of the crowdsourcing mechanism. Users write and ask about a specific problem and they reward whoever will present the best solution on the market.

Social platforms' main objective is to aggregate people. They differ from aggregation platforms in two main elements: they aim at creating and strengthening social relationships among users. Facebook and Twitter are among the most successful social platforms existing on the market. In addition, rather than being based on a hub-and-spoke model, they present a less defined structure and

usually promote “mesh network of relationships” (Hagel, 2015). This means that people interact and connect without the mediation of the platform owner, so they are less centralised and organic.

Finally, *mobilisation platforms* aggregate people allowing them to accomplish tasks that go beyond any individual participant’s capability. Mobilisation platforms, by definition, facilitate mobilisation and push people to act together to reach a shared goal. Consequently, platforms tend to create long-term relationships among users who decide to share knowledge and resources driven by a common purpose.

It is important to highlight that each type of platform mentioned above may eventually evolve in a learning platform. *Learning platforms* aim to facilitate learning and increase knowledge of the participants to sharpen their capabilities and refine processes (Figure 12).

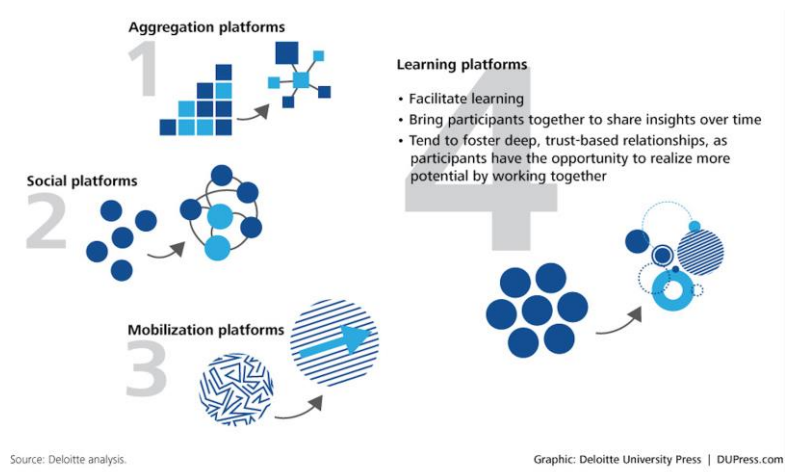


Figure 12 - Aggregation platform, social platform, mobilization platform and learning platform. From: The power of platforms (John Hagel, 2015).

The only way for encouraging people to cooperate and co-create value is to build tight long-term relationships which also allow for tacit knowledge exchange. So, typical of learning platform is the so called “creation spaces” configuration: people are organised in small, trust based groups characterised by a flourishing circulation of knowledge. Furthermore, individuals interact frequently, not only within the single groups, but also outside. They are not static entities but evolve thanks to the interaction with other users. Users’ growth is the main peculiarity of learning platforms: both producers and consumers change and evolve in interacting with each other. In conclusion, aggregation, social and mobilisation platforms all have the possibility to eventually become learning platforms where, in the end, we can observe an increased efficiency and effectiveness in the evolution process of the user.

1.9 Why building a platform business model?

Each business that wants to stay competitive must embrace a platform business model. Or, better said, in every industry where there are both pipeline and platform businesses, the second ones will always outperform the others. However, there are different reasons that may lead a company to shift to a platform business model. Following the John Hagel article on the Deloitte University Press, a platform can be built with the aim to accomplish different objectives:

1. Performance improvement: it is the equivalent of outsourcing because it consists in focusing on the activities that are better performed by the company, shifting all the others to external specialised companies to whom they are connected through the platform. This mechanism brings to an increase in the overall level of efficiency of the company and, consequently, a growing benefit for consumers.
2. Leveraged growth: in this scenario, platforms allow users to share their capabilities making them available to all participants. This mechanism constitutes the third growth path after the organic growth one and the growth by acquisition. In this framework, we can talk about “distributed innovation”: a form of crowdsourcing in which the most innovative solutions are rewarded.
3. Shaping strategies: the aim of the platform in this scenario is to create new sources of value creation and, above all, new ways to generate value. This kind of strategy allows for cost savings since the investment is divided among the parties rather than being borne by one single party.

Certainly, platforms are among the best tools to create value for both sides of the market. Nevertheless, they may also undermine the ability of a company participating to the network to gain its fair share of value. This happens especially when the company and the platform owner do not coincide. In fact, platform owners are exactly at the centre of the network. Their advantage comes from occupying an influential position, meaning a concentration of interactions between users. Platforms in this privileged position access a huge quantity of information that can be leveraged to boost value creation. Generally, platforms at the centre of a network conduct a brokerage function and they work as links between various companies that would otherwise be disaggregated.

In conclusion, this is just the beginning of a major macroeconomic shift which will completely revolutionise the way of conducting business. Above all, platforms are increasingly characterising more and more aspects of every industry and this both speeds up and disrupts processes and rules. On one hand, companies cannot avoid taking part in this shift, embracing digitalisation and creating platforms that allow them to stay competitive on the market. However, this technological evolution

needs a parallel business model adaptation. Considering that there are new sources of value creation, companies must shape strategies based on those sources, also redefining goals, rules and roles. The winners on the market will be the players that will ride the wave of the technological evolution and of the growing digitalisation and that will adapt accordingly. For example, big companies like Amazon, Google, E bay or Alibaba have been able to survive even after the 2000 downturn, when trillions of dollars' worth of paper valuation burned in a few months. Every company must analyse every component of the business model and the way those components change in the macroeconomic shift to a demand-side economy of scale. The company must comply with the new rules that the digital ecosystem dictates adapting its structure to them. On the other hand, companies that do not shift to a platform business model are mostly bound to fail.

Chapter 2

Defining platform governance, policy and strategy

2.1 Platform openness

Before introducing platform governance, it is important to define openness and understand how it impacts the platform in different ways. Geoffrey Parker and Marshall Van Alstyne, in collaboration with Thomas Eisenmann provide the following definition of openness: <<A platform is “open” to the extent that (1) no restrictions are placed on participation in its development, commercialization, or use; or (2) any restrictions – for example, requirements to conform with technical standards or pay licensing fees – are reasonable and non-discriminatory, that is, they are applied uniformly to all potential platform participants>> (Eisenmann, Parker & Van Alstyne, 2008).

The above definition shows how a platform is considered closed not only when the access to external participants is prohibited but also when potential participants are discouraged to take part to the transactions because of burdensome rules or excessive fees (Boudreau, 2010). On the other hand, an open platform easily leads to fragmentation, making intellectual property rights and monetisation difficult to control. Therefore, a delicate balance must be continuously calibrated, especially because the level of openness affects usage, developer participation, monetisation and regulation (Van Alstyne, Parker & Choudary, 2016, a).

For instance, at the beginning Steve Jobs created a closed system with Apple Macintosh and, although Microsoft had a less sophisticated operating system, the latter was able to gain a bigger share of the market of personal computers. This happened because it embraced innovation from different sources and opened its system to the knowledge of different developers. In the 2000s, however, Apple switched to an open operating system for the iPhone, making iTunes available on Windows and capturing the shares coming from big companies like BlackBerry and Nokia (West, 2003), thus outperforming Microsoft. Clearly, the trade-off between open and closed systems is quite a crucial issue and it may determine the success or failure of a platform (Chesbrough, 2007). In 2008, Myspace was the dominant social network but it presented poor features and inadequate content. In addition, engineering resources were limited and the closed system did not allow for external contribution and innovation. As a result, in 2004 Facebook started its climb, surpassing Myspace in 2008 and becoming the number one social network worldwide. Facebook, in fact, did not make the same mistake and opened to dot.com users in 2006 and to external developers in 2007. In fact, the platform ecosystem focuses on the external environment and if the platform is excessively closed, then the

mutually rewarding exchange of value becomes impossible (Huang, Ceccagnoli, Forman & Wu, 2013).

Going back to openness, there are mainly three kinds of decisions that managers of a platform deal with (Figure 13):

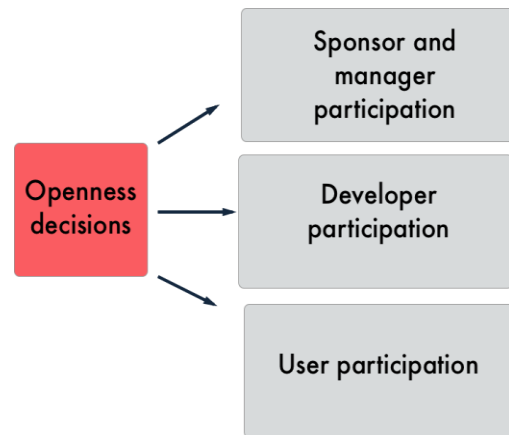


Figure 13– Three openness decisions that managers of a platform deal with. Inspired by the work of: Geoffrey G. Parker, Marshall W. Van Alstyne, Sangeet Paul Choudary (2016, a).

First, decisions regarding the participation of sponsors and managers are both requisites for the platform success. While managers deal with interactions and have a direct contact with users, sponsors take care of legal issues especially related to the intellectual property rights allocation. Speaking of which, there are mainly four types of platform management structures that represent different degrees of openness. First, in the *proprietary model* one single provider controls its technology, thus ensuring a great overall control of the interactions. In the *licensing model*, there is usually a single company developing a platform’s technology and licensing it to other firms as providers. On the contrary, in a *joint venture model* multiple firms cooperate in developing the platform but a single entity serves as its sole provider. Finally, in the *shared model* multiple firms collaborate in the development of the platform’s technology and then compete with each other to offer different but compatible versions of the platform (de Pablos-Heredero, Berzosa & Gonzalez, 2012). In sum, the proprietary model is a closed system, while the shared model is the opposite and in between there are the licensing and the joint venture models in which the system is open respectively for managers and sponsors (Figure 15).

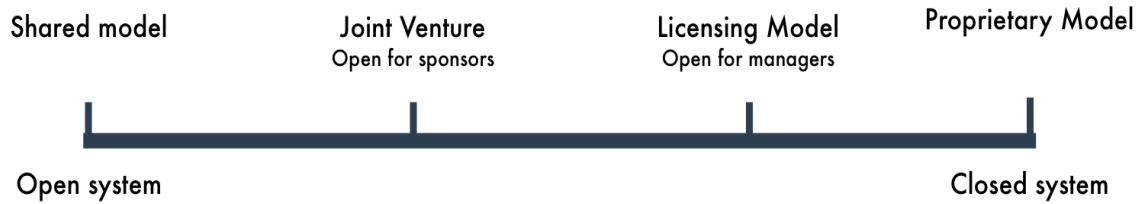


Figure 14 – Different models of platform governance, with different degrees of openness. Inspired by the work of: Geoffrey G. Parker, Marshall W. Van Alstyne, Sangeet Paul Choudary (2016, a).

The second element concerning openness is about developer participation and refers to the developers’ action in boosting new interactions to attract users and create value. There are three types of developers: core developers, extension developers, and data aggregators. Core developers provide core functions to the platform and create value for all the participants. Their main role is to bring the platform to a growing number of users, by making the core interaction as easy as possible. Extension developers, on the other hand, add features to the platform and enhance its functionality. They usually are external individuals who profit from offering complementary goods, mainly characterising open environments. Finally, data aggregators improve the matching functionality of the platform by adding data to it, hence increasing the overall value generated. In a well-balanced platform, extension developers do not control significant sources of user value, which, by contrast, are in the hands of the platform manager. This, in fact, ensures a more organic structure. Nevertheless, if the concentration of user value in the hands of external developers is too high, the platform manager could decide to buy the app or, otherwise, to buy the firm that provides the app.

The third kind of openness issue is represented by user participation, that is the right to freely contribute to the platform with new content. Usually platforms are two-sided markets, so producers become consumers and vice-versa. On one hand, this enables a quicker exchange of high-quality value; on the other hand, absolute openness must be mitigated in some way to ensure high quality content standards. This happens through a system of curation which takes the form of screening and feedback at critical points of access to the platform. Specifically, while screening decides who enters the platform, feedback encourages positive behaviour from those who participate to the interactions. Crucial here is user’s reputation that affects its chance to obtain free access to the platform. Curation can be managed via human gatekeepers who play an active role in screening users and approving content. Otherwise, the users themselves can directly curate the platform through software tools. There is not a unique method of curation and its effectiveness strongly depends on the platforms’ characteristics and on the users’ behaviour (Parker, Van Alstyne & Choudary, 2016, a).

The challenge is always to find the right balance to allow content generation and value exchange, while ensuring that external developers would not be too aggressive in controlling the sources of value on the platform.

2.2 Governance

Once that the platform manager decides the degree of openness of its platform, a proper governance must be ensured. Geoffrey G. Parker, Marshall W. Van Alstyne and Sangeet Paul Choudary (2016, a, p.158) define governance as: <<the set of rules concerning who gets to participate in an ecosystem, how to divide the value, and how to resolve conflicts>>. <<To understand good community governance is to understand the set of rules for orchestrating an ecosystem>> (Youngjin, Boland, Jr., Lyytinen & Majchrzak, 2012).

The platform manager needs to set rules to ensure a fair wealth distribution among all the participants who add value. For this reason, the authors of “Platform revolution” make a comparison between platforms and States because they both are entities that have long struggled with the issue of fairly creating and distributing economic resources. Facebook has 1.5 billion of users, the social network is currently managing a number of people higher than China’s population. This means that today, the platform’s businesses control economic systems bigger than national economies (Parker, Van Alstyne & Choudary, 2016, a). For instance, Google manages 64% of the online searches in the U.S. and 90% of those in Europe. Governance and regulation are an inevitable choice to ensure a high level of quality on the platform, especially because absolutely free markets do not automatically generate efficiency. Instead, the absence of rules and regulation usually creates unbalanced situations, such as when sellers provide counterfeited products on eBay, bought by unexperienced users who misidentify goods. Specifically, platforms may create situations in which good interactions (fair and mutually satisfactory) do not occur, or situations in which bad interactions occur. These two scenarios are gathered together under the name of “market failures” which also include: information asymmetry, externalities, monopoly power and risk.

The purpose of governance is to properly manage and solve those market failures and for this reason the market designer and Nobel Prize-winning economist Alvin Roth describes a model of governance which employs four levers (Roth, 2007). According to Roth, a well-designed system increases the *safety* of the market through transparency, hence boosting good interactions. It also provides *thickness* which allows easier matching between participants of different sides of the market. It reduces *congestion*, which hinder successful searches and finally it prevents *repugnant activity*, like pornography on iTunes or human organ sales on Alibaba.

Platform governance has been also studied by the constitutional law scholar Lawrence Lessing who mainly compares platforms to States. In his view, control involves four main tools: laws, norms, architecture and markets. Historically, people who wanted to control social behaviour, including platform managers, employed all four of these tools (Lessing, 1999). Transposing Lawrence's framework to the platform ecosystem, these four levers can be used as part of a governance system. Specifically, *laws* must always be explicit and well defined. These govern behaviour at both the user and the ecosystem level. Usually, the user level refers to the relationship between the platform manager and participants, mainly consumers. The ecosystem level refers to the relationship with external developers providing complementary goods, mainly apps. Laws must always obey the principle of transparency, except when they prevent negative behaviours and transparency may facilitate bad users, rather than block them. In this case, a subtler form of governance is recommended to avoid disclosing the mechanisms of prevention to the users who may easily learn how to escape from them. The underlying principle is: <<Give fast, open feedback when applying laws that define good behaviour, but give slow, opaque feedback when applying laws that punish bad behaviour>> (Parker, Van Alstyne & Choudary, 2016, a, p. 167). *Norms* generally represent widespread behaviours, so they can be analysed through the application of the discipline of behaviour design. According to Nir Eyal, who extensively worked on advertising and game development, behaviour design is a recurring sequence of trigger, action, reward, and investment (Parker, Van Alstyne & Choudary, 2016, a). The trigger is a signal coming from the platform, such as an email or a web link, a news item or an app notification. In response to the trigger, the user takes an action on the platform that brings him a reward. Finally, the platform asks the participant to make an investment in terms of time, data, social capital or money (Parker, Van Alstyne & Choudary, 2016, a). Behaviour design allows to predict how people will interact on the platform. Unfortunately, it can also be used to sell goods to participants or to manipulate them, the reason why it is important for users to gain a deep knowledge of governance mechanisms. Especially, it is desirable for them to participate in shaping the system that governs them, creating a more democratic environment. In the end, governance should be gradually distributed among the members of the community, with simple issues controlled by small groups of users and complex issues managed by more organised groups (Ostrom, 1990), in a way to create a balanced, effective and efficient system. Going back to Lessing's main tools, in the platform ecosystem *architecture* basically refers to the programming code. Its purpose is to encourage and reward positive behaviours to incentivise participants to repeat them, but it can also be used to correct market failures. In the end, architecture can level the playing field, making markets more competitive and increasing fairness. Finally, *markets* can guide behaviours by using mechanism design and different incentives in the form of money or in the form of a subjective value called social

currency (Parker, Van Alstyne & Choudary, 2016, a). This is a measure of the economic value of a relationship between users. Its foundation is giving away something to get something else in return. For example, when posting a picture on Facebook (so you are giving something), you hope people will share it (thus giving you something in return). Clearly, well-designed market mechanisms can not only generate economic growth, but also incentivise the creation and sharing of intellectual property rights and reduce the risk attached to interactions on the platform.

Whenever governance rules are applied to platforms, platforms' partners and participants there is a situation of self-governance. This stimulates a more efficient environment where people are incentivised to produce and exchange high-quality value. Self-governance is based on some principles; the first one is internal transparency. This requires that participants obey common rules and, above all, that they have a shared language and believe in the same values. Transparency creates integration among the different layers of a platform which, on the other hand, makes it easier to solve complex problems and allows external participants to effectively collaborate with the platform management team. Also, to avoid dysfunctionality within the platform, it is important that managers spread a clear and common view to all the business divisions. The devoted application of the principle of transparency by Amazon Web Service (AWS), made it extremely successful over time. Andrew Jassy, Amazon's vice-president of technology, explains how the different projects of the multiple divisions of Amazon should be combined in one single operation with a universal set of protocols. In this way, the huge amount of data owned by Amazon, would be accessible for everyone. In sum, a platform success strongly lies within the ability of the managers to create a uniform environment where all the business divisions play by the same rules and share a common vision. The second big principle of platform self-governance is participation. It is crucial to ensure a voice to external stakeholders in internal decisions equal to that of internal stakeholders, to avoid making them feel as alienated. Otherwise, decisions are only made by managers who inevitably favour the platform itself, causing external participants' defection. In addition, designing a fair governance system in the long-run incentivises users to innovate and to create more value than if the rules were to grant a platform owner the possibility to make arbitrary decisions, without being accountable for them. In other words, the decision to create a fair and stable governance system within a platform will give positive results in the long-run, whereas a more closed and arbitrary system based exclusively on the decisions of the platform owner, will generate inefficiency.

Nevertheless, governance is always imperfect because of information asymmetry and externalities. Moreover, if a platform allows for a continuous flow of innovation, together with new profit to manage, there will also be new conflicts. In this circumstance, the governance mechanism should

always promote innovation and evolution. Change must be supported but, most of all, properly managed.

2.3 Policy

Platforms are giving rise to an increasingly important social challenge: the need to balance internal governance with the external regulatory framework in a way to guarantee fairness and social justice (Figure 15).

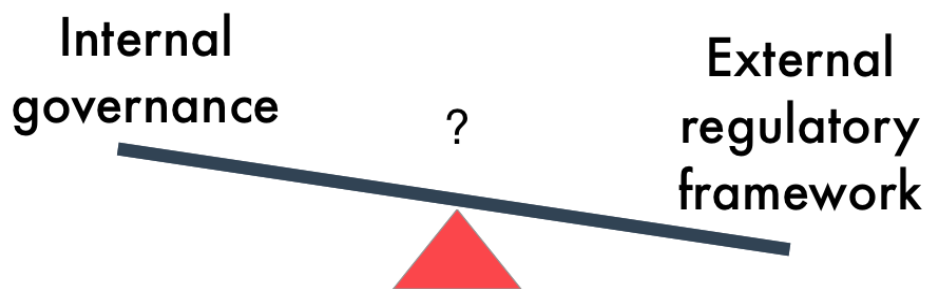


Figure 15 - A platform must always balance internal governance with the external regulatory framework to ensure fairness and social justice. Inspired by: Kevin Boudreau, Andrei Hagiu (2009)

Given the rapid growth of platforms and its significant impact on different sectors of the society, regulatory issues are brought to the front of the popular consciousness. This happens because, on one hand, promoting innovation and economic development requires a general *laissez-faire* policy, while on the other hand, ensuring equity and fairness, requires defined rules. It is therefore time for policymakers to face these new challenges by partially modifying the old assumptions. The impact of platforms, in fact, is disruptive on traditional industries, especially because these create both positive and negative externalities. Negative externalities create a cost that is borne not by the people who created them, but by third parties who are not involved in the transaction. This happened, for instance, when stories about Airbnb were published, concerning prostitutes who died stabbed and groups of young drunk people who completely demolished rooms. Of course, there are also positive externalities, economic benefits for third parties, like the fall of hotel prices after the entry of Airbnb that strongly relieved the tourism industry. Thing is that positive externalities are difficult to quantify, while negative externalities are usually more evident and measurable. Therefore, it is imperative to find a way to restrict negative externalities as much as possible by providing a framework of guidelines and rules for platforms' activity. Although there are several opponents to regulation, in fact, rules and regulatory control are required for marketplaces to succeed. Nobel Prize-winners Ronald Coase and George Stigler, members of the *laissez-faire* oriented Chicago School of Economics, claim that market failures are best addressed and solved by market mechanisms

themselves rather than by regulators who are often corrupt and tend to satisfy their own interests instead of pursuing the social benefit (Parker, Van Alstyne & Choudary, 2016, a). Today, on the other hand, the majority of battles in favour of platform business regulation comes from the traditional industry leaders who attempt to fight the competitive and innovative power of these new entities, by creating a ring-fenced framework of rules that platforms must obey. It is possible to find a balance between the two opposite views, by encouraging the design of specific political, social and economic systems to reduce the likelihood of what Coase and Stigler call the “regulatory capture”. The foundation of the regulatory capture is that market participants will struggle to influence regulatory authorities in their own best interests, further worsening market failures, rather than solving them. However, Andrei Shleifer explains that the presence of regulatory capture changes across countries, so in the absence of corruption, regulation can be compatible with the promotion of social welfare because rulers will not be influenced or biased. After all, regulation to prevent anti-competitive practices goes back to ancient Greece and Rome where authorities intervened with specific policies to mitigate the economic fluctuations caused by natural disasters or human actions (Parker, Van Alstyne & Choudary, 2016, a). In conclusion, an intermediate solution is required because if on one hand too much regulation causes corruption and undemocratic regimes, a loosely regulated system has high social costs (Figure 16).

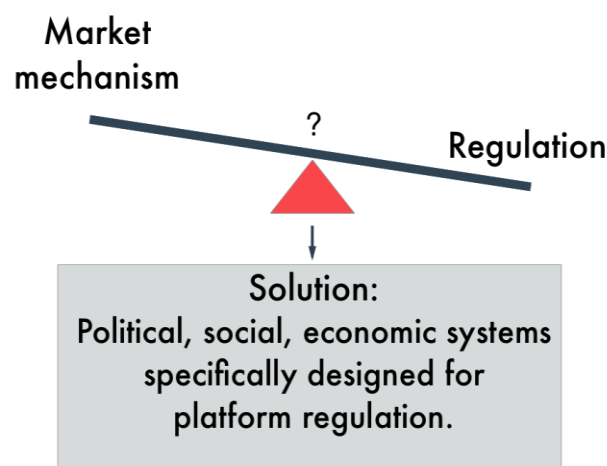


Figure 16 – A platform must always balance the free market mechanism with regulation. An intermediate solution suggests to create political, social, economic systems properly designed for platform regulation.

Geoffrey G. Parker, Marshall W. Van Alstyne and Sangeet Paul Choudary (2016, a, pp. 240-253) identify the following regulatory issues:

- Platform access: the possibility that platform access would be denied to specific participants, raises questions about whether and to what extent this exclusion is fair and what is its impact on the marketplace in the long run. The threat of exclusion is an important challenge mainly

for firms conducting business online and for every startup that tries to successfully penetrate the market. In addition, it strongly influences platform compatibility which is necessary to protect consumers' interests and benefits. Platform exclusion negatively impacts on industries characterised by network effects because it limits the probability for platforms to reach the critical mass and to match producers with consumers. In this context, the biggest problem is the phenomenon of *excess inertia* that refers to the power of network effects to prevent the adoption of new and better technologies (Katz & Shapiro, 1994). The excess inertia significantly slows the pace of innovation. Of course, a government intervention is considered fair whenever an arbitrary denial of access to a specific platform leads to excess inertia (Gandal, 2002). However, regulators should move with caution when considering platform access because it may happen that limited competition can actually benefit consumers in the long run by encouraging innovation (Parker & Van Alstyne, 2007).

- Fair pricing: in two-sided markets, the practice of predatory pricing takes new forms and forces regulators to retool their predation tests to incorporate network effects (Evans & Schmalensee, 2012).

First, predatory pricing refers to the situation in which goods and services are priced so low that it is impossible to profit from them. The temporary benefit for consumers is then outweighed in the long run with the possibility for the firm to drive competitors out of business, thus raising prices to monopoly levels. In markets with two-sided network externalities, however, firms can maximise profit by distributing services to one side of the market at zero price, while earning profits through the sales of goods to the other side of the market (Parker, Van Alstyne & Choudary, 2016, a). In this circumstance indeed, zero pricing becomes a rational choice for firms.

- Data privacy and security: data are considered today “the new oil” for firms and they play a key role. Therefore, regulation concerning data management is urgent. In the early stages, data security regulation only focused on providing clear explanations to consumers about the criteria used to compute credit scores. In 1974 Congress passed the Equal Credit Opportunity Act which prohibited discrimination based on sex and marital status. It was amended two years later to include also race, colour, religion, national origin, source of income and age (Parker, Van Alstyne & Choudary, 2016, a). Today, however, big data present new challenges concerning their management and privacy issues which are growing in complexity. Particularly, many firms, especially platforms, track consumers' web searches, web usage, subscriptions and much more, to create detailed profiles. These data are anonymous and they are usually sold to government agencies and marketers of all kinds and purchased through

data broker firms like Acxiom (Kroft, 2014). All these data aggregators and firms are establishing an ownership interest in data that would otherwise belong to individuals. Consequently, it is necessary to regulate data ownership through regulatory action, court rulings and industry self-regulation (Arthur, 2013), especially due to the recent trend towards the establishment of ownership rights over user data (Cook, 2014). This is an important element for firms to consider, as from now on these will be legally responsible for any breach of privacy terms against their customers. Hopefully, this will encourage firms to design more accurate privacy terms and to carefully manage the huge amount of collected data.

- National control of information assets concerns the duty for multinational enterprises to follow the local content regulations when they expand into less developed countries. These regulations are specifically designed to stimulate the local economy and to boost economic growth. Some industry observers also think that local content requirements can be extended to data services, meaning that data can be stored locally rather than internationally. However, this would dramatically diminish the value of the data which consequently will be more fragmented. National control of information assets also concerns privacy issues related to data management. In the EU, for instance, rules have been established to protect citizens' privacy and this results in numerous local data processing centres that, if aggregated, would have a more important economic value.
- Tax Policy: As platforms become more and more popular, it is important to define who benefits from the sales tax dollars generated. Specifically, it is usually hard to decide whether taxes should be allocated to local producers or to consumers. This situation makes local and State sales tax regimes obsolete and requires the approval for a national sales tax law for platforms. Amazon, for example, levies a national sales or value-added tax in most of the U.S. countries in which it operates. However, the U.S. tax legislation allows the world's second biggest online retailer based on revenues to minimise its tax collection obligations, hence keeping prices low. Today Amazon collects sales taxes in twenty-three U.S. states, while holding out against tax collection requirements elsewhere (Wood, 2013). The U.S. Congress is currently working on the elaboration of a uniform tax policy for online sellers to impose sales tax on goods purchased online from out-of-state sources. First, the Main Street Fairness Act failed to be approved due to the lobbying activity of Amazon representatives. A new version of the bill called Marketplace Fairness Act was passed in the Senate in 2013, this time with the support of Amazon. The online retailer giant, in fact, is now looking for a uniform tax legislation equally applied to all Internet merchants, in order to eliminate the advantage

of its smaller rivals who did not pay taxes on most of their sales (Parker, Van Alstyne & Choudary, 2016, a).

- Labour regulation takes new and different forms in the platform ecosystem. People who operate labour platforms, in fact, describe their systems as intermediaries that solve the problem of matching labour with demand for services. Furthermore, they describe whoever signs up for work on platforms as an independent contractor. As a consequence, the platform has almost no other responsibility than completing the match on either side of the market. This strongly differs from traditional industries, where regulators have the duty to establish clear and defined rules for the protection of workers. Nevertheless, online businesses must be very careful in managing their workforce, otherwise a bad reputation can seriously undermine the platform's ability to grow in the long-run. In addition, the court of public opinion, operating as an unofficial regulatory body, may have a negative impact on the brand reputation as well. On a different front, online labour platforms are also creating new challenges for regulators who must monitor and measure local labour markets. In fact, multi-homing and freelancers can easily switch from one platform to another over the course of the day, making difficult for government agencies to capture data relative to national labour status.
- Potential manipulation of consumers and markets is likely to occur whenever a platform reaches a significant market power. For example, Uber in 2015 was involved in the case of “phantom cabs” on the Uber passenger cab, meaning cars that seemed to be near the passenger but that did not actually exist. The study was conducted by FUSE Labs, a research organisation sponsored by Microsoft and caused an important loss of reputation for Uber. The company was also accused of other misleading practices, such as the one of creating impressions of high-demand areas to forecast higher prices.
Uber case shows how platforms with a strong market power can manipulate users' impressions by exploiting the huge amount of data they have access to, thus misleading people's behaviour with no consent.

As seen extensively before, the vast amount of data platforms can access, necessary requires a reorganisation of the traditional approach to regulation. Nick Grossman (2015), entrepreneur, investor and MIT Media Lab scholar calls for a transition from Regulation 1.0, which has prescriptive rules and certification processes, to a system called Regulation 2.0, based on open innovation and data-driven transparency and accountability (Figure 17).

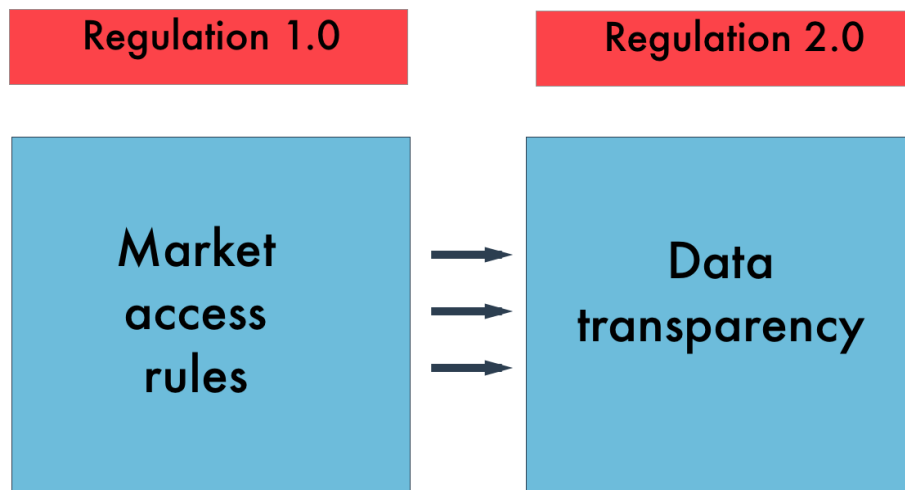


Figure 17 - Transition from Regulation 1.0 (based on pre-defined market access rules) to Regulation 2.0 (based on data transparency).

Both Regulation 1.0 and 2.0 aim at ensuring fairness and consumers' safety, even if with very different means. According to Grossman, restricted access makes sense in a world of scarce information, as in the traditional hotel or taxi industry. Here, data about the taxi drivers' diligence, or hotel cleanliness were usually scarce, therefore they required a defined regulation. In a world characterised by abundance of data and information, on the other hand, a regulation based on data-driven transparency is more effective and makes more sense. If we think about Airbnb, for instance, customers' history and information are constantly accessible and reachable, so that it becomes quite easy to understand who did what and when. In addition, Airbnb users can access information about host ratings and reputation and they can make a safe and sound choice. In Grossman's view, Regulation 2.0 should ensure data transparency, rather than establishing market access rules. In the platform ecosystem, in fact, protecting users' data and history becomes the most crucial issue for a firm. Furthermore, in a system driven by data, protecting transparency through a government mandate can supplement traditional forms of regulation and reduce the cost associated with government intervention, hence boosting innovation (O'Reilly, 2010). Independent outsiders monitored by government agencies should carry out this function.

The authors of "Platform revolution", in the end, present a balanced solution with a part of the current permission-based regulation and a part of data-driven accountability. Traditional regulatory practices do not work for new technologies and business models. This is because they do not incorporate the advances in the economic theory that show how firms can maximise profits even when they distribute products and services at zero price. Platforms revolution should be accepted among with the huge wave of innovation it brings. This requires the proper adaptation of the regulatory system which should now consider a data driven approach based on transparency and accountability.

2.4 Strategy

In addition to governance and policy adaptation, the platform ecosystem also requires new strategies to be designed in order to create value. During the last decade, Porter's five forces model dominated the strategic thinking, while today platform evolution and diffusion demands for new strategic moves. According to Porter, five forces affect the strategic position of a business: the threat of new entrants to the market, the threat of substitutes of goods and services, the bargaining power of buyers, the bargaining power of suppliers and, finally, the intensity of competitive rivalry in the industry. Whenever a company is able to properly control these five elements, it will gain a sustainable competitive advantage. Therefore, in this model firms try to avoid competition, while encouraging it for every other entity in the value chain. Here, a resource-based view is dominant and the more a business is capable of owning a huge quantity of rare, valuable, inimitable and properly organised resources, the more it is competitive on the market.

However, today's scenario is dominated by platforms. This completely changes this framework. First, there is a shift from an internal perspective to an external one, where the most valuable resource is represented by users and their interactions. Firms can now share value created and seize the best opportunities for their business, while leaving the others to their partners. In addition, thanks to the focus on network effects, the access to networks and the resulting interactions among participants are the most inimitable resources, so the value of physical assets strongly diminishes.

Considering all these elements, platforms compete in new and different ways with respect to past traditional industries. Specifically, they follow these patterns (Parker, Van Alstyne & Choudary, 2016, A, pp. 213-227):

1. Limiting platform access to control and capture more value created on the platform. The main purpose of a platform is, in fact, to gain exclusive access to indispensable assets. Usually, platforms' owners achieve that by designing rules to prevent multi-homing. This refers to the possibility for users to engage in the same type of interaction on different platforms, which clearly increases switching opportunities for participants. Understandably, multi-homing strongly decreases the value of a platform, the reason why it is considered one of its biggest threats. However, there are several ways to avoid it; Apple, for example, made its operating system incompatible with Adobe Flash, forcing developers to use similar tools created by Apple itself.
2. Boosting innovation and capturing its value. A platform business should always encourage innovation but it should also be able to capture the value created. This is why platforms always try to control the sources of value creation, by acquisition or duplication, while they defer less valuable resources to partners. Whenever a new platform with strong network effects and

social sharing power arises, other platforms seek to absorb its capabilities. This is exactly the strategy followed by Facebook in 2012 when the company acquired Instagram for \$ 1 billion thus assimilating its huge engagement capabilities.

3. Exploiting the power of data. There are mainly two different types of data: tactic and strategic ones. Tactic data are used in optimising platform performance, while strategic data, in a broader sense, are used to optimise the entire ecosystem. When a business can manage a huge quantity of data, it can also better match supply and demand on both sides of the market, in this way improving the overall performance of the platform. Therefore, it is in the best interest of the managers to improve platform design to optimise data generation mechanisms. A vast amount of data, in fact, creates what in the Porter's five forces model constitutes the barriers to entry and gives to the firm a strong competitive advantage.
4. Changing mergers and acquisitions rationale. In the Porter's five forces model, merger and acquisitions are usually addressed to firms that own valuable resources. Differently, in the platform ecosystem, M&A are driven by the will to acquire firms that create value that overlaps with the one they currently provide to their user base. In addition, firms also consider the profitability of the company and its ability to repeatedly generate interactions among users. Platforms also have the possibility to observe the behaviour of the target company in managing transactions, which allows to delay the acquisition in case of uncertainty. Anyway, considering the main objective of leading transactions, rather than owning resources, as long as they have access to the overall ecosystem, platform companies can pursue less M&A.
5. Platform envelopment strategy refers to the situation in which <<one platform effectively absorbs the functions-and the user base-of an adjacent platform>> (Parker, Van Alstyne & Choudary, 2016, a, p. 222). This is particularly effective when one platform offers considerable value to an overlapping user base and it allows to respond more rapidly to competitive moves.
6. Enhancing platform design is another strong tool to increase platforms' competitiveness. In some cases, a superior platform design enabled a platform to outperform its rivals, as Airbnb did with Craigslist. While the latter presents an unmanaged list of rooms divided by city and time of posting, the former is organised along characteristics such as quality, number of rooms and price and it permits a more systematic research.

In high technology markets, it is difficult for firms to maintain a durable competitive advantage, since the pace at which technology evolves is persistent. Nevertheless, it usually happens in *winner-takes-it-all-markets* characterised by four forces: supply side economy of scale, strong network effects,

high multi-homing or switching costs and lack of niche specialisation (Parker, Van Alstyne & Choudary, 2016, a).

Supply side economies are a result of the industrial era and they are characterised by high fixed costs, but very low marginal costs, which leads to powerful economies of scale with a focus on the volume of production. The greater is the supply side economy of scale, the higher is the market concentration rate. For what concerns network effects, they are a result of the Internet era; as we said extensively in the previous chapter, industries characterised by positive network effects present higher margins as the number of participants increases. Both multi-homing and switching costs can bring high monetary and non-monetary costs that while growing, push the market towards higher concentration of few companies. In markets characterised by high multi-homing and high switching costs, it is quite hard for later entrants to gain market share. This creates less fluid and closed markets. Finally, niche specialisation tends to weaken winner-take-all-markets because it creates a separate network which users seeking for different features may join.

In conclusion, the nature of competition in the platform ecosystem is very different from that in the world of traditional industries. It requires both governance and policy adaptation, as well as the shape of new strategies to capture value. Clearly, these elements strongly impact the business model which asks for innovation and undergoes a true revolution.

Chapter three will analyse this overturning in details and will present the shift from a pipeline business model to a platform one step by step. Also, it will examine the composing elements of a platform business model providing some practical examples.

Chapter 3

The platform business model⁴

3.1 From pipeline to platform

The Internet era had a profound impact on the mechanics used by businesses to create and deliver value. As business models shift from pipes to platforms, a new business design is required. While pipes characterise the industrial era, platforms are the result of the digital transformation that continuously asks for new methods and strategies of value creation and capture. As we can see from the figure below (Figure 18), in the pipeline business model, the value chain of the activities is linear: suppliers provide inputs that are transformed into a more valuable finished output.



Figure 18 - The value chain of the activities in the pipeline business model.

Here, there is a linear movement of value from a producer to one or multiple consumers; activities are produced upstream and consumed downstream (Choudary, 2015, d). Because of its simplicity, this business model is also referred to as “linear value chain”.

The platform business model, on the contrary, revolutionises this framework. Here, there are four main players. These usually change position, rapidly shifting from one role to another (Figure 19):

1. Producers: the creators of the platform’s offerings, like app developers on the Apple Store;
2. Consumers: the buyers and users of the offerings;
3. Providers: platforms’ interface with users, like smartphones for Apple;
4. Owners: control the intellectual property rights of the platform and its governance.

⁴ For the purpose of this thesis I decided to follow the theory presented by Sangeet Paul Choudary in his works, particularly in Platform scale: how a new breed of startups is building large empires with minimum investment. (2015). Printed in Germany by Amazon Distribution GmbH, Leipzig. Therefore, the framework used in this chapter is inspired by this book. Images are also taken from or adapted from Platform scale: how a new breed of startups is building large empires with minimum investment. (2015).

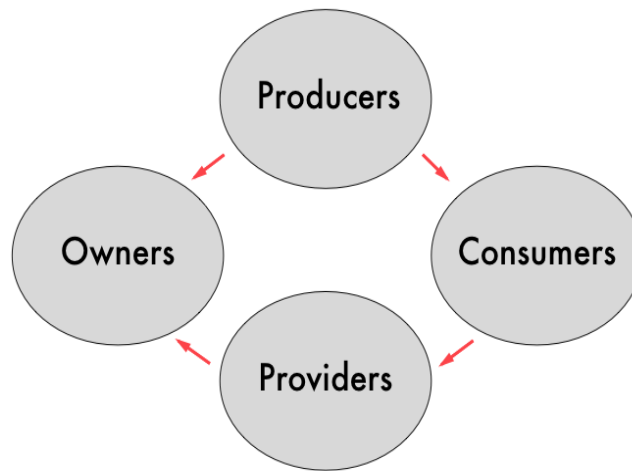


Figure 19 - The interconnection among the four players of a platform: producers, consumers, providers and owners.

Producers and consumers continually bring out and exchange data, giving feedback to providers and owners. On the other hand, providers and owners are always on the alert to catch these signals and exploit them in the best way to create value for the platform itself.

Hence, the platform business model strongly differs from the classical pipeline one. This is because as Sangeet Paul Choudary explains in his book, it involves a constant value co-creation (Figure 20):

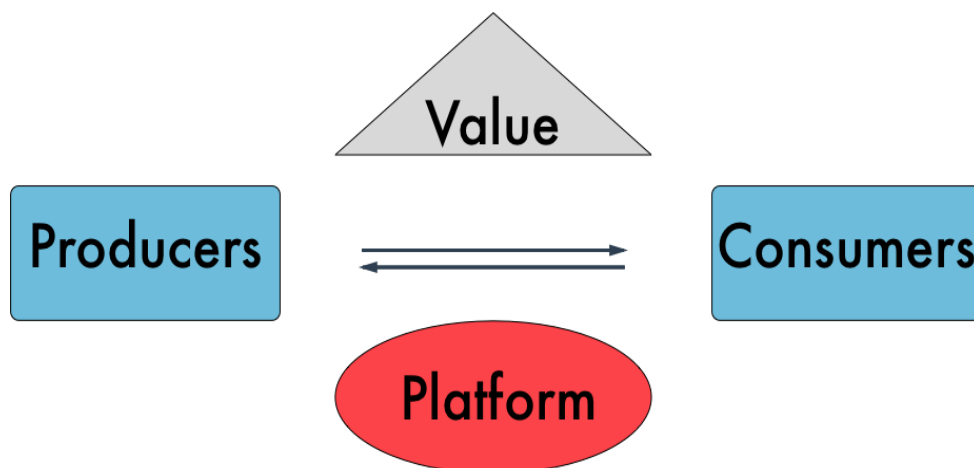


Figure 20 - Platforms involve a constant value co-creation from both producers (internal and external) and consumers.

As Figure 20 shows, a plug-and-play infrastructure requires a multi-directional flow of value between participants, these being both consumers and external producers.

For what concerns scalability, the ability of a business to scale is determined by its capacity to aggregate inputs - mainly labour and resources - and to coordinate them efficiently towards value creation and delivery (Choudary, 2015, d). The author of “Platform revolution” defines the Pipe Scale as a <<business scale powered by the ability to coordinate internal labour and resource toward efficient value creation and toward delivery of the created value to an aggregated consumer base. The management of pipe scale involves the design and optimization of this linear flow of value from the business to the consumer>> (Choudary, 2015, d, p.28). According to this definition, in the pipeline model, the focus is on internal resources, both tangible and intangible ones, and on the ability of the company to extract value from them. Once that the value is created, it is delivered straight to the customer base, following a linear and sequential process. Inversely, Platform Scale is defined as a <<business scale powered by the ability to leverage and orchestrate a global connected ecosystem of producers and consumers toward efficient value creation and exchange. The management of platform scale involves the design and optimization of value-exchange interactions between producers and consumers>> (Choudary, 2015, d, p.29). In the platform model, in other words, the focus is on the external dimension, constituted by the ecosystem of consumers and producers who interact and co-create value, being connected to the business through the Internet. The two roles of producer and consumer are not well-defined, instead participants on the platform constantly alternate production and consumption roles. In addition, while for pipes, competitive advantage is determined by resource ownership and control, for platforms it is determined by the quantity of data managed and by the ability to orchestrate digital and physical assets. This is strictly linked to the shift in value creation from processes to interactions. Basically, value is no longer created through processes that organise labour and resources, but especially through interactions that orchestrate users and resources in the ecosystem. This is the reason why new platforms like Uber or Airbnb focus on improving the algorithm that matches supply and demand, thus increasing the interaction frequency on the platform ecosystem. Therefore, although in a world of platforms value creation is still achieved through aggregation, the aggregation mechanism changes from the pipeline model. In “Platform Scale” Choudary (2015, pp.35-46) states some principles that specifically describe this shift. The author gathers them under the so called “platform manifesto”.

First, <<the ecosystem is the new warehouse>>: while in the pipeline model, competitive advantage was determined by the ownership of resources, in the platform model it is determined by the nature and frequency of interactions and by the value exchanged. In the former, processes are vertically integrated and centralised; in the latter, the platform represents the means through which all the interactions among consumers and producers are coordinated. The hotel industry is representative of a pipeline business model, while Airbnb is representative of a platform business model. This is

because the latter creates an ecosystem that links hosts and guests who mutually depend on each other. While hotels own their physical inventory, Airbnb just matches the virtual availability of accommodations with demand. This allows Airbnb to expand rapidly without incurring significant fixed costs. Consequently, platforms allow a general de-materialisation of the economic system.

<<The ecosystem is the new supply chain>>: in the pipeline model the value creation mechanism was a linear process, generated through the supply chain. In the platform model, on the contrary, the supply chain is replaced by the ecosystem. This is a more open and dynamic environment.

<<The network effect is the new driver for scale>>: this is linked to the platform scale which is achieved by leveraging interactions in the ecosystem: the more value is created and exchanged on the platform, the more users are attracted to the platform and a virtuous circle is activated. Generally, being the platform open to external influences, <<data is the new dollar>>: data are the source of monetisation because they allow to understand customers' needs and to create value accordingly. More specifically, data allow companies to provide a perfectly customised product to the users who become more willing to buy. Also, data are used to orchestrate interactions and to match supply and demand, the reason why organization must shift from a culture of dollar absorption to a culture of data absorption.

<<Community management is the new human resource management>>: in a pipeline model, marketing activities are addressed to influence an audience of customers, while the human resource management deals with the workforce training. In the platform ecosystem, however, the community of users must be scaled, in much the same way that employees are scaled within an organisation. This involves providing incentives to participants to plug into the platform repeatedly and keep on creating value and compliance.

Usually, platforms face some main challenges. The most important one is to ensure the right match between supply and demand: enough customers to absorb the level of supply; enough producers to satisfy the customers' demand. Consequently, <<liquidity management is the new inventory control>> and the main objective of a platform is to ensure that there is enough overlap between supply and demand, without demand going unfulfilled. Platforms, in fact, do not own inventory but it is fundamental to keep both producers and consumers incentivised to use the platform and iterate the virtuous mechanism.

<<Curation and repetition are the new quality control>>. Being the platform an open environment, a minimum level of quality must be ensured to customers to enforce their loyalty. While pipelines used strict hierarchical control, creating lock-in mechanisms in the world of platforms is essential to ensure the constant value generation. In fact, open systems encourage unchecked production which leads to abundance. Abundance, on the other hands, requires a great effort from customers to search and

effectively find relevant content, which strongly discourages participation. To avoid this, platforms build incentives for consumers to come back and plug into the platform. Facebook's news feed, for example, creates daily habit: customers keep on visiting it, and the value generated increases while attracting new users. This is strictly linked to the fact that <<social feedback is the new sales commission>>: employees are not encouraged through inorganic rewards like sales commission, but through social feedback. This is the engine that brings to bear social networks, where users post, share and interact with each other to create engagement. All these processes are driven by algorithms that stimulate both resource allocation and reputation assignment. Algorithms are also employed in purchase paths, which are no longer linear. Instead, in the platform ecosystem users interact with the business through multiple channels and experiences before making a purchase, so that <<user journeys are the new sales funnel>>. The browse and buy activities are now decoupled and driven by a huge quantity of data that allows to create a very personalised experience.

Since customers are usually connected to multiple channels simultaneously, firms must stop thinking in terms of destination and start thinking in terms of distribution. Basically, <<distribution is the new destination>>: business is not about bringing the customer to a specific store anymore, but it is about bringing the experience into the context of the user. In other words, the object of the business is to repeatedly expose the customer to different experiences related to the business itself.

Distributing content is one of the ways used by platforms to keep on attracting customers. In the world of pipes, in fact, businesses achieved customer retention and stickiness using loyalty programs and lock-ins. Now, in the world of platforms, characterised by open access to third party participants, lock-in mechanisms are substituted by opt-ins. The only way for platforms to ensure a constant participation is to invest in behaviour design. This consists in encouraging good and valuable behaviours and dissuade the negative ones. In addition to behaviour design, network effects also create stickiness: the more users keep on plugging into the platform, the more value is generated and both producers and consumers are incentivised to connect. Therefore, the ecosystem of interactions becomes the new source of value creation and <<data science is the new business optimization>>. In fact, while in the pipe world efficiency improved through the optimisation mechanisms implemented by managers, in the platform world the focus shifts to the enhancement of the platform's ability to orchestrate interactions, which in the end depends on data availability. This leads to the principle that <<algorithms are the new decision-makers>>: they are responsible for both resource allocation and reputation assignment and they replace traditional gatekeepers.

Moreover, while the pipeline model includes a slow segmentation based on research, for platforms' models <<real time customization is the new market research>> with the aim to provide producers and consumers with the right content in real time. This feature also benefits producers whose access

to the platform is determined by previous experience and performance tracked on the platform. Anyway, too much customisation may also damage user's activity that becomes poor and repetitive. <<Plug-and-play is the new business development>>: in the world of pipes, business development was based on contractual integration of information and resources, which was a long and intensive operation. In the world of platforms, on the contrary, everything is simplified thanks to the adoption of Application Programming Interfaces (APIs). These work both as contracts and integration interfaces. APIs enable a new form of business development as they depend on the openness degree of the platform. Therefore, anyone can use them to create value for the business. An increasing number of non-tech industries are adopting APIs to embrace innovation and to allow external developers to contribute to value creation. The final principle of the platform manifesto states that: <<the invisible hand is the new iron fist>>. Traditional industries, in fact, were organised through hierarchies based on rules and compliance. Here, there was a unidirectional flow of information from the top down. Now, platforms are only guided by the invisible hand that, being powered by data, APIs and algorithms, nudges producers to continue creating value on the platform (Choudary, 2015, f).

Putting all this information together, according to Marshall W. Van Alstyne, Geoffrey G. Parker and Sangeet Paul Choudary (2016, c) the progress towards a platform model involves three main shifts:

1. From resource control to resource orchestration: in the pipeline model, competitive advantage is reached by controlling resources that are valuable, rare, inimitable and organised, either tangible or intangible. The key asset in a platform model, on the other hand, is the network of producers and consumers itself. The most precious resources are the community of users and the assets they own and share on the platform, in a constant process of co-creation.
2. From internal optimisation to external interaction: in the platform model the focus is on persuading participants to be more active and to exchange value.
3. From a focus on customer value to a focus on ecosystem value: pipes try to maximise the value of individual customers through a linear process. Platforms, by contrast, aim at maximising the total value of an ecosystem that is in constant expansion.

Due to the three shifts mentioned above, the platform business model becomes more efficient compared to the pipeline one. The greater efficiency depends on several factors. First, platforms provide real-time access to information relative to consumers' preferences. This eliminates redundant gatekeepers that slow the production process in the pipeline model. Thinking about the entertainment industry, Netflix uses an algorithm that allows real time customers' segmentation and that proposes customised content with movie and TV series suggestions. As we will see in Chapter 4, the analysis

of the trends happens in milliseconds. On the other hand, this process is necessarily belated in the traditional movie industry. Value creation and supply accelerate as well. Let's think about the traditional hotel industry compared to Airbnb. In the former, inventory grew only as the number of rooms increased. This required to find new territory for new buildings, as well as high maintenance costs. Above all, this took a lot of time. On the contrary, Airbnb inventory grows in real time, whenever an individual decides to let its own house or rooms and connects to the platform. Consequently, platforms present lower marginal costs of production and distribution. Furthermore, being producers also consumers and vice-versa, value is created repeatedly, thus augmenting the power of network effects. Platforms also allow consumers to review products and services, encouraging high quality performance and transaction costs reduction. For example, Uber drivers may be rated by customers who can evaluate the quality of the ride. As a result, drivers are incentivised to keep a model behaviour because the overall condition of the platform will improve automatically. In general, feedback from other consumers makes it easy to better understand which product or service is likely to suit users' needs. Usually, in fact, products that are negatively rated disappear from the platform. Consequently, the overall system of interactions becomes extremely more efficient. One of the main challenges faced by platforms, however, is to ensure compliance. In a platform ecosystem, ensuring compliance means creating cues that encourage users to repeat the desired behaviour. Over time, bad behaviours are automatically discouraged and a new behaviour sets in. Before designing behaviours, it is important to decide how often consumers and producers must interact to maintain a florid and active environment. Behaviour design ensures compliance at the user level and it must be associated with community culture to ensure compliance also at the community level. Users who do not act in accordance with the community rules are flagged and their further participation is restricted. Finally, platforms benefit from *virality*, a phenomenon where the user of a system brings in new participants while interacting with the system itself. This relates to the fact that, whenever the user plugs into the platform, he creates value that may be consumed by a significant number of users of another connected platform. For instance, on Instagram the user may post a picture on this platform, deciding to share it also on Facebook. Here, value created on Instagram is consumed also on a third platform, thus becoming viral.

3.2 The interaction-first business model

The competitiveness of a platform is determined by its ability to facilitate and spur interactions and, above all, to its capability to sustainably ensure interactions. Hence, the platform business model is

considered as an enabler of interactions between consumers and producers, so the business design must always maximise the effectiveness and the efficiency of this mechanism. This is the reason why platforms are also called interaction-first business models, in contrast with the user-first business model which represents traditional pipe businesses. Here, since value linearly flows from producers to consumers, the single user's perspective rules the overall business decision making process. In the interaction-first business model, on the contrary, the interaction should be as efficient as possible in order to increase user engagement and satisfaction. The value of a platform, in fact, solely lies within the activity that a group of connected participants power on the platform. The platform itself has no standalone value. Value is created on top of it through interactions.

Generally, an interaction always involves an exchange of value between one or more producers and one or more consumers. The producer creates supply and tries to satisfy demand; the consumer generates demand and consumes supply. The exchange of value always implies some form of social or economic currency in return. Here, producers and consumers are considered as two roles, rather than segments, because they are not static and they usually shift from one role to another. This is the reason why it is important to design specific incentives for the two different roles to encourage interactions on the platform. Figure 21 shows this mechanism:

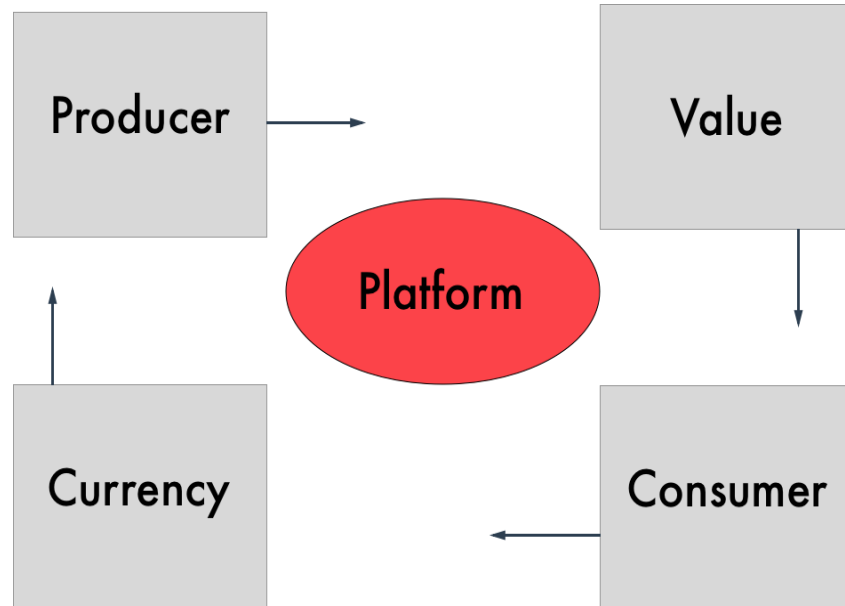


Figure 21 - The mechanism behind the interaction. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 50 (Choudary, 2015, d).

It is important to highlight that in the platform ecosystem, social currency becomes essential and it takes the form of attention, reputation, influence or goodwill that encourage producers to participate

further and to keep on creating value. Choudary (2015, d, pp. 52-59) writes about seven principles that specifically guide the design of interaction-first business models:

1. Plug-and-play business design. To incentivise interactions among participants the business design should create an open and participative environment. However, open access may lead to abundance which creates noise, preventing participants to find relevant content. Therefore, open access should be always balanced with the right governance to guarantee access control and filtered content. Figure 22 shows how the access control filter mechanism works.

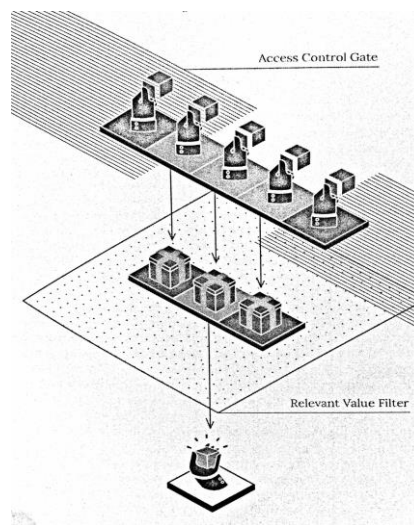


Figure 22 - The access control filter mechanism. The access control gate selects the producers who can participate to the interaction. They produce value that must pass through the relevant value filter. The selected value is finally delivered to consumers. From: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 53 (Choudary, 2015, d).

2. Balancing value creation for both consumers and producers. Platforms are two-sided markets, hence to allow value generation, both sides of the market must be contemporarily nurtured.
3. Strategic choice of “free”. Offering a service or a good for free can be only a temporary solution, unless it is part of a broader strategy that involves some form of monetisation. In the platform ecosystem, offering a service at zero price makes sense only if this strategy is used to ensure repeatability or to capture some form of data that can be monetised. Companies like Facebook, Google, WhatsApp or Twitter started out as free services and mostly remained the same. This was made possible because they managed to monetise data: user interests for Facebook and keywords for Google, for instance. Usually, on platforms at least one role is subsidised to participate on the platform. In fact, subsidising producers helps encouraging supply, while subsidising consumers helps spurring consumption and, consequently, demand.
4. Pull, facilitate and match. The platform must continuously *pull* participants towards it, then *facilitate* interactions and finally ensure the right *match* between demand and supply. This will be treated extensively later.

5. Layering on new interactions. This principle refers to the organisation of the platform which is built around a core interaction upon which multiple edge interactions arise. The core interaction is the pillar of the overall platform and all the other interactions depend on it. Whenever a business fails to power its core interaction, all the other edge interactions that the platform enables will also fail.
6. Enabling end-to-end interactions. There are several types of platforms and most of them match supply and demand allowing producers' and consumers' needs to align. However, there are also other kinds of platforms that enable the end-to-end interactions and that create higher levels of efficiency. The main purpose of LinkedIn, for example, is to allow professionals to connect. However, at the same time, the platform enables different interactions, such as the possibility to share posts, to actively write articles or to subscribe online courses. Hence, LinkedIn extends far beyond the sole purpose of matching supply and demand.
7. Creation of persistent value beyond the interaction. It is important for a platform to generate mechanisms that allow for a constant and repeatable value creation. Specifically, it is important that value created during single interactions persists in creating cumulative value. For what concerns TripAdvisor, for instance, reviewers and travellers converge to get information about an establishment. Similarly, on Airbnb both hosts and guests have the possibility to rate each other, contributing to the creation of reputation which boosts future interactions.

3.3 The platform stack

The foundation of the interaction-first business model does not lie within the technology, nor in user adoption. Rather, it lies within the value created by external producers and exchanged with consumers on the platform. This mechanism is enabled by a platform, which constitutes the infrastructure upon which participants create different units of value. The platform is built around a centre that is the starting point for additional features. The units of value become the inventory or supply of the platform and they serve as the power engine of the overall mechanism. Specifically, every core interaction is built on a core value unit which is the nucleus of every interaction. Before analysing it, however, it is important to define the platform stack and its characteristics.

First, from the point of view of software developers, every platform constitutes a plug-and-play business model built to facilitate interactions. In addition, every platform is an interaction-first business model. However, platforms carry out multiple functions, so they differ from one another in the core interaction. In order to unify and explain the multiple configurations of platforms, we need a common architectural framework called the platform stack.

Across every type of platform, there are three distinct layers that constantly emerge (Choudary, 2015, d, pp. 61-71) (Figure 23):

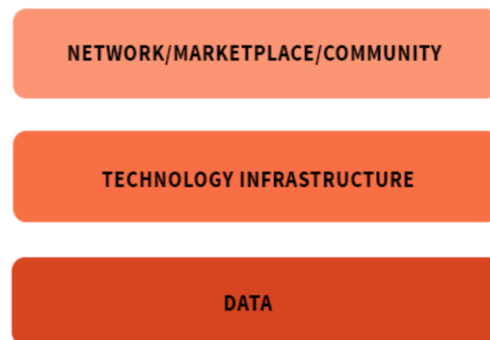


Figure 23 - The platform stack. From The platform stack: for everyone building a platform and for everyone else, (Choudary, 2015, g).

1. Network-Marketplace-Community layer: this layer represents the set of participants on the platform and their relationships. Although users normally have explicit connections among each other, there may be also platforms with an implicit community layer. This is the case of Mint.com where users are not connected with each other but every user's financial analytics is benchmarked against that of similar users. Hence, every user benefits from the community without actively connecting.
2. Infrastructure layer: this layer comprises tools, services and rules that enable value creation. Infrastructure is the means through which users interact and the tool that enables the plug-and-play mechanism. The infrastructure layer has no value unless users and partners create on top of the platform. External producers build on top of this infrastructure. For example, on Android developers build apps, or on YouTube video creators upload videos. An intensive activity of value creation may lead to the problem of abundance, which strongly increases search costs for consumers. This is the reason why platforms have also a third layer.
3. Data layer: data are fundamental for platforms to match supply with demand. Furthermore, data power relevance, providing consumers with the service, goods or content that they are looking for. Depending on the nature of the platform, data play a more or less relevant role. However, generally they contribute to increase the overall value of the platform.

Putting all this information together, it is easy now to understand how platforms may differ from one another even presenting the same business model. Platforms, in fact, function across these three layers, but the degree to which each layer is dominant may vary. This is why the platform stack takes three basic configurations that translate in just as many platform models. Of course, every platform has its own unique configuration, however it is possible to identify three dominant structures. First,

the marketplace/community platform, where the network is the key source of value and the marketplace/community layer is prevailing. Examples are Airbnb, Uber and most marketplace platforms such as EBay or Amazon.

Differently, a dominant infrastructure layer leads to a development platform that provides the structure upon which apps can be created. For instance, Android’s development infrastructure is the key source of value for developers who furnish apps through the Play Store. Usually development platforms work in tandem with a marketplace or community platform that becomes the distribution channel for the apps. Nevertheless, there are also development platforms that focus only on the infrastructure layer, without a marketplace for apps.

Generally, well-defined boundaries across platforms do not exist. There are only different representations of the platform stack. In the third configuration, data layer plays a dominant role. Usually, data are a primary element in every type of platform, even if in some cases they constitute the key value created. For example, wearables produce data that are transformed into analytics by the platform and sent back to the consumer once they have been analysed. Also, the platform pools data from many users, thus exploiting implicit network effects. The following Figure (Figure 24) show the three different hinges of the platform stack:

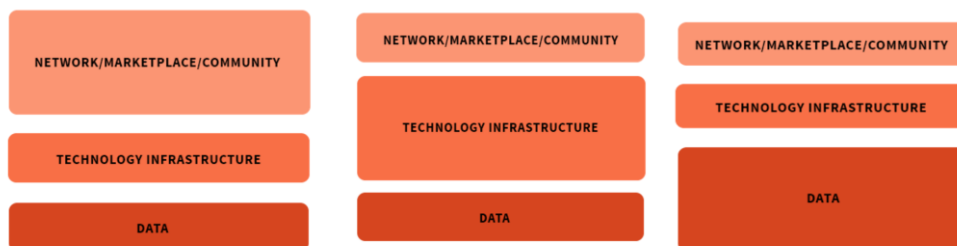


Figure 24 - From the left: network/marketplace/community platform, infrastructure platform and data platform. Each figure represents a different type of platform. As we can see, all platforms share common elements and they only differ in the predominant one. From: The platform stack: for everyone building a platform and for everyone else, (Choudary, 2015, g).

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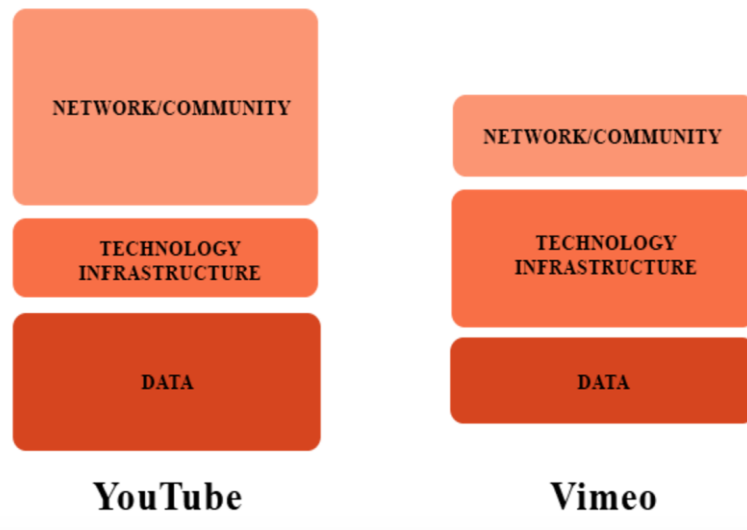


Figure 25 - YouTube and Vimeo stacks. From: The platform stack: for everyone building a platform and for everyone else, (Choudary, 2015, g).

3.4 The core value unit

At this point, it is possible to state at least two principles characterising the platform ecosystem. First, all platforms present a common business model and they differ among each other almost exclusively in the dominant layer. Hence, we may have marketplace-community-network platforms, infrastructure platforms or data platforms. Second, an efficient and sustainable business model is also a scalable one and it must be continuously optimised. Before doing so, however, the business model must be designed. For platforms, design and architectural issues are particularly complex because of multiple factors. Many user roles require to balance value, costs and incentives across all the user bases and often, failing to balance for just one user base, leads to the overall platform breakdown. For this reason, the platform business model design is quite a complex issue that asks for several rules and principles.

One of the most important things to know when dealing with platforms is that the value created has very little to do with the technology and much to do with the value that the external ecosystem of producers and consumers constantly creates and exchanges. Basically, the platform solely constitutes the infrastructure upon which value is created through a series of interactions. Therefore, value resides only in the activity that participants generate on the platform, thus enlarging the inventory of value units. The platform itself has no value in the absence of interactions. For what concerns value, we have already talked about the core value unit in Chapter 1, but it is time now to differentiate among the three configurations of platforms. Considering that each platform has a different configuration of the three layers, it is important to distinguish the function of the core value unit within each of the three models. In a network/marketplace/community-dominated platform, the core value unit may be

either a good, or a standardised service, or a non-standardised service. Infrastructure-dominated platforms, on the other hand, present a very clear core value unit, which is tangible and easy to identify. Apps, for instance, form the core value unit of a development platform, or videos are the core value unit of YouTube. Finally, on data dominated platforms, the data itself are the source of value. This is the case of omni-channel shopping platforms that track and aggregate customers' data to serve deals back to them or to integrate their shopping experience. Here, while shoppers create value, merchants consume it: this is the reason why data are considered as the core value unit. As any strategy to achieve platform scale, platform design and architecture must always start from the core value unit. As Choudary (2015, d) writes in his work, from a producer point of view, a platform is an infrastructure to create and store value or, alternatively, a marketplace to find customers for the value units (mainly goods or services). From a consumer's perspective, on the other hand, a platform is a depository of value units that filters the most relevant content to the consumer. Clearly, the value proposition for both roles focuses on the core value unit: a platform with no core value unit has almost zero value.

In the end, platforms present a structure similar to the one of pipes, because value units are produced and then transferred to consumers. However, the main difference between pipe and platform is that in the former value is created internally, while in the latter it is the result of the effort of multiple participants, especially external ones. As a result, platforms do not control the quality and quantity of their core value unit, i.e. there is no control over inventory. This is the real challenge for platforms: managing an infrastructure where it is not possible to exert a direct control over the source of value produced.

3.5 The nature of the interaction

The main duty of a platform is to transfer the core value unit from a source to a destination. Therefore, the success or failure of a business model depends on its ability to execute this transfer. The exchange of the core value unit happens through social or economic interactions which, on the other hand always involve the trade of: information, goods or services and currency. Across all the platform-enabled interactions it is possible to identify some trends. First, only some exchanges occur through the platform, while others are just tracked by the platform. Second, the exchange of information always takes place on the platform, while the exchange of goods or services and currency may or may not occur through it. Finally, all the other exchanges start as a consequence of the initial exchange of information. Depending on which exchanges the platform captures and which ones it does not, Choudary (2015, d, pp. 108-115) identifies four patterns. In the first one, the platform captures both

the exchange of information and currency, but not the exchange of goods or services (Figure 26).

This is the case of Airbnb where three exchanges occur:

1. The transfer of information on accommodation availability from the host (producer) to the guest (consumer);
2. The transfer of money from the guest (consumer) to the host (producer);
3. The transfer of the accommodation (service) from the host (producer) to the guest (consumer).

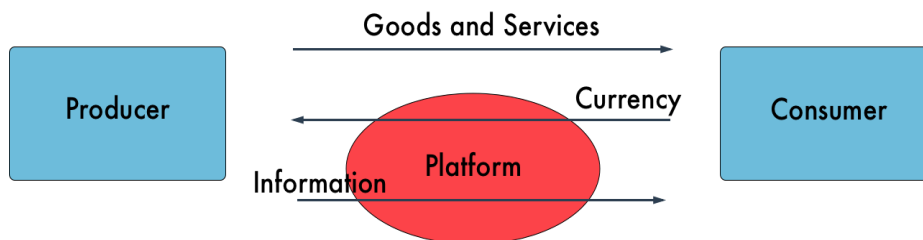


Figure 26 - The platform captures both the transfer of information and currency. The flow of information goes from the producer to the consumer. The consumer pays the producer with some kind of currency. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 110 (Choudary, 2015, d).

The second pattern involves the only exchange of information through the platform (Figure 27). Neither the exchange of goods and services nor the exchange of money is controlled by the platform, hence monetisation models are based on subscription, paid promotion or lead generation fee.

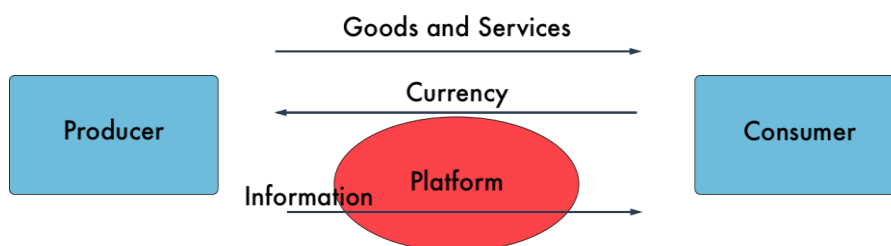


Figure 27 - The platform does not capture neither the transfer of goods and services nor the transfer of currency. The flow of information goes from the producer to the consumer. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 112 (Choudary, 2015, d).

In some cases, the platform can capture the transfer of information, as well as goods or services and currency (Figure 28). Of course, given the increasing digitisation, this model applies to the exchange of virtual goods. This is the case of Uber business model where three exchanges occur:

1. Transfer of information on cab availability from driver (producer) to traveller (consumer) in response to the transfer of a request;
2. Transfer of transportation (service) from the driver (producer) to the client (consumer);
3. Transfer of money from the client (consumer) to the driver (producer).

It may happen that even if the transfer of goods or services happens outside the platform, the infrastructure is able to track information to better manage transactions.

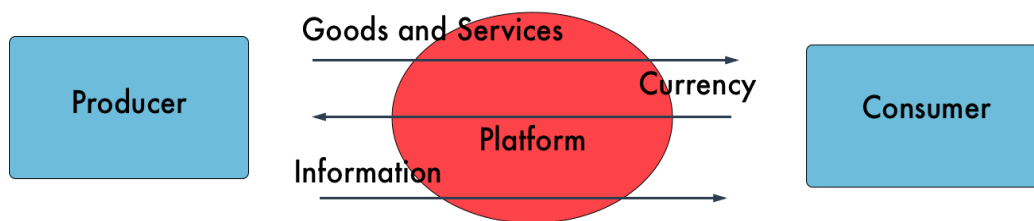


Figure 28 - The platform captures the transfer of goods and services, currency and information. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 114 (Choudary, 2015, d).

Finally, the fourth pattern involves the exchange of social currency as a reward. This is the case of the tweeter who gains influence when other users read his tweets. It is a form of compensation that does not involve the exchange of money, rather the exchange of attention, reputation or engagement.

3.6 The core interaction

We have already talked about the core interaction in Chapter 1. It is now useful to recall its main components to better understand the platform business model design. The core interaction is <<a set of actions that producers and consumers engage in repeatedly to derive value from the platform>> (Choudary, 2015, d, p.122). Of course, users perform multiple actions on the platform; nevertheless, the core interaction is the one that gives meaning to the platform itself. Without its core interaction, the platform would cease to carry on its functions. Platforms usually share a common structure of the core interaction and, specifically, the actions that form the core interaction are: creation, consumption, customisation and curation. These must be permanently and simultaneously performed on the platform, otherwise there is no value creation. If a platform fails at encouraging value creation, in fact, it breaks down because there is no supply and, therefore, consumers would have nothing to get out of the platform. If a platform fails at encouraging consumption, on the other hand, there is a lot of value creation without a corresponding value consumption, which further disincentives creation and activity on the platform. A platform that fails to encourage curation does not offer relevant content to its customers, rather poor and useless elements which are not engaging. Finally, if a platform fails to encourage customisation, there will be higher search costs for the consumer who will find the experience irrelevant. This mechanism shows how all the interactions are strictly interlinked among each other, the reason why failure to encourage any one of these actions may lead to failure of the entire core interaction.

The actions of creation, curation, consumption and customisation are determined in relation to the core value unit. The final step of the platform design process requires to define the actions that are performed in the core interaction. These actions must be continuously repeated for the platform to

scale and solve the problem it is meant to solve. The minimum viable platform should in fact ensure the right design of the four actions in the core interaction in order to enable the end-to-end interaction. In addition, to boost the core interaction, a platform must be organised in a way to leverage all three layers of the business model appropriately: the network layer, the infrastructure layer and the data layer. These three layers are aligned with the platform priorities to:

- *Pull* producers and consumers to the platform on an ongoing basis. This ensure an active and booming network layer (Figure 29):

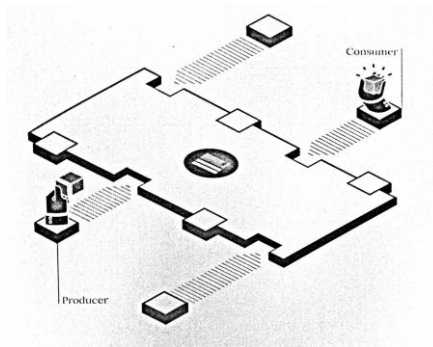


Figure 29 - The main duty of a platform is to pull consumers and producers to the platform on an ongoing basis. This is possible using both organic and inorganic elements. From: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 131 (Choudary, 2015, d).

Creating pull involves both organic and inorganic elements. This is particularly important considering the chicken-and-egg problem that platforms suffer at the beginning of their activity. In addition, it is important to create viral mechanics to generate pull on an ongoing basis. Furthermore, platforms must ensure long-term investments to keep producers and consumers loyal. The provision of reward schedules also helps encouraging the user's participation. Finally, to achieve platform scale, it is fundamental to constantly monitor all these elements.

- *Facilitate* the interactions among participants (Figure 30). This involves setting rules of access to encourage desirable interactions and discourage undesirable ones, as well as providing tools that enable the interaction. For what concerns rules, specifically, there are various methods to encourage desirable behaviours. Social curation and community feedbacks are explicit ones, but there are also more silent methods. In fact, there are platforms with a centralised moderator, as well as platforms in which rules are incorporated into algorithms that prevent users from negative behaviours. This improves the functionality of the infrastructure layer.

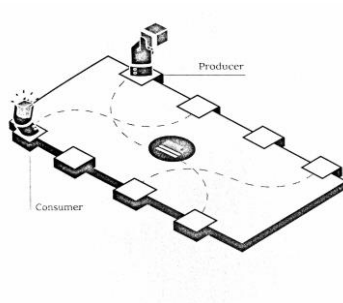


Figure 30 - The platform must facilitate interactions between producers and consumers. From: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 133 (Choudary, 2015, d).

- *Match* supply and demand (Figure 31). Users must be provided with relevant content, otherwise they may defect. Improving the platform matchmaking ability involves acquiring new data about the core value unit, so in the end it is related to the data layer.

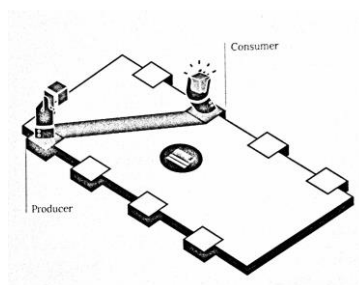


Figure 31 - The platform must ensure that the inventory supplied by producers match consumers' demand. From: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 135 (Choudary, 2015, d).

<<Pull, facilitate and match: three roles that must be performed repeatedly to power platform scale>> is what Choudary (2015, d, p.129) writes in his book. Failing to perform one of these actions, in fact, will lead the platform to fail achieving scale. On one hand, failing to pull participants to the platform, will block the network effect and the *virality* mechanisms which are the power engines of a platform business. Similarly, network effects will be obstructed by frictions in access and usage of the platform which will lead participants to abandon the platform. On the other hand, platforms that fail to match relevant content with participants will fail to engage users.

Adjustments of the organisational focus may be needed during the life cycle of the platform. For instance, a huge investment in creating pull is necessary only at the beginning of the activity, while as the platform ability to scale increases, the investment in creating pull may decrease. Similarly, the platform ability to match consumers with producers may decrease as the user base grows. In conclusion, it is important to review the organisational focus throughout the life cycle

of the platform, considering that the three activities mentioned above can be progressively automated in some way.

3.7 Filters

Consumption filters are used by platforms to solve the abundance problem and to ensure an efficient level of consumption. Implicitly, this means ensuring also an efficient level of production.

To better understand the importance of consumption filters, let's make the example of Uber. Whenever a user plugs into the platform to book a ride, he creates a filter based on the time and location needed. Contemporarily, the producer (the taxi driver) creates a core value unit by providing information relative to his availability and his location. The value unit that best corresponds to the filter is delivered to the consumer and the interaction is matched. Therefore, on platforms, core value units are produced and delivered to consumers based on how well they correspond to the filter. In other words, core value units are served based on how relevant they are to the user. Let's think about Facebook's newsfeed. Here, likes, comments, status updates and so on are considered the core value unit of the platform. The newsfeed shows core value units based on the previous activity of the user, creating a customised newsfeed. This means that content is provided based on units that pass through a user's consumption filter. The filter, on the other hand, is built on the previous activity (likes, comments) of the user.

The filter is needed to ensure that consumers are served only content that is most relevant to them. This basically involves two key factors: first, ensuring the overlap between what producers offer and what consumers demand. Second, data about core value units. By combining these two elements we can get three different types of filters:

- 1) Filters that *pull* units to themselves, like search queries;
- 2) Units *pushed* through filters, like newsfeed;
- 3) Finally, *point-in-time* or *cumulative* filters, like Netflix's recommendation engine.

Filters may also be either based on active intent (search query) or passive context (a user using a location-based app may not actively request deals, however he may get them based on his passive context). Context, on the other hand, can be static or dynamic: it is dynamic whenever it is based on data captured on an ongoing basis through user's actions. On the contrary, the Web 1.0 presented a static context where filters were created by filling out long application forms. Filters can also be standalone or collaborative where collaborative filters are based on a "people like you" parameter and take into account other users' activity on the platform.

Finally, the network itself is considered a filter. The Facebook newsfeed for instance, is nurtured by the activity of the user itself. This means that the activity of the user on the platform determines the content showed (Choudary, 2015, d).

3.8 The platform canvas

The purpose of this thesis is to analyse how the business model changes in digital platforms in comparison with traditional industries. So far, the shift from the pipe model to the platform one was presented. In doing so, all the elements that make up a platform were discussed. This paragraph aims to put all this information together, to finally build the business model of a digital platform.

For this purpose, the study of Sangeet Paul Choudary was chosen because it represents a complete and systematic model. Therefore, his platform business model framework will be presented here⁵. Subsequently, in Chapter 4 this framework will be used to analyse Netflix business model. In particular, the shift from (respectively) a pipe business model to a platform one will be analysed in the context of the movie rental industry through Blockbuster and Netflix case studies.

The platform canvas represents here the central planning framework of an interaction-first platform business. Before starting analysing the platform business model, let's recall some basic characteristics of a platform. First, the unit of value creation is the interaction between producers and consumers. Although there may be platforms that enable multiple interactions, every platform presents a core interaction which is the nucleus of the entire activity. All the interactions are built upon the core interaction and usually strengthen it. Finally, platform architecture starts with building the interaction. Once the interaction is structured, the platform business can be built.

It is important to understand that, if a platform enables multiple interactions, the business model and the architecture must be planned out following one interaction at a time, starting from the core interaction. In fact, while in the pipe model the focus was on the user (user-centricity), here in the platform model the focus is on the interaction itself (interaction-centricity). Choudary highlights three essential elements of an interaction centric business model:

1. The value creating interaction;
2. The platform that enables the interaction;
3. A mechanism for value capture.

⁵ The model presented in this paragraph comes from the work of Sangeet Paul Choudary. Specifically, I referred to pp. 137-148 of Platform Scale: How an emerging business model helps startups build large empires with minimum investment. (2015). Printed in Germany by Amazon Distribution GmbH, Leipzig.

The platform constitutes the infrastructure for value creation and it also enables the transfer of value from producers to consumers and vice-versa. Figure 32 illustrates the four main elements composing a platform business model:

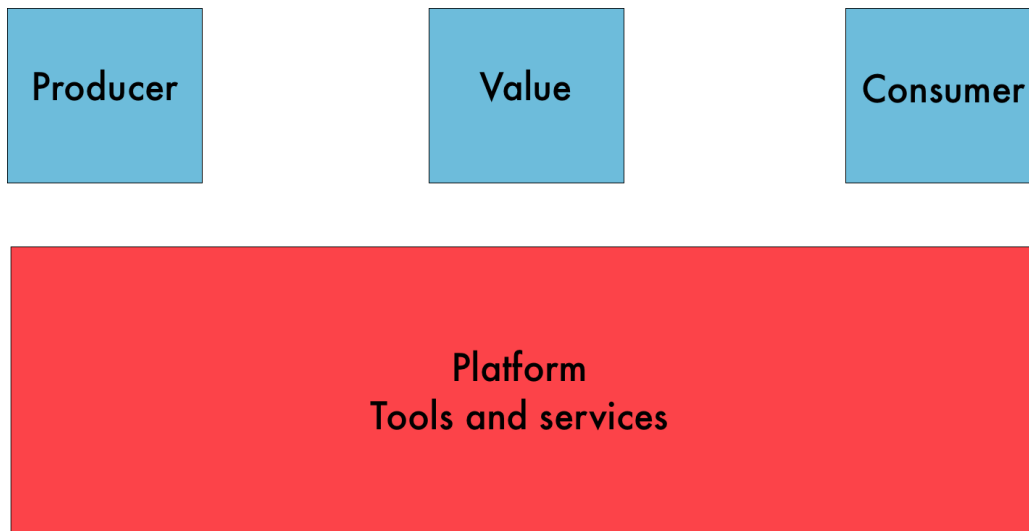


Figure 32 - The four main elements of the platform canvas: producer, consumer, value and platform. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 139 (Choudary, 2015, d).

As we can see, producers and consumers plug into the platform to create and exchange value. Although the same person may contemporarily act as a producer and as a consumer, in a single interaction each person may perform just one role at time.

Four steps are needed to design a platform business model canvas.

Phase 1: first, the design of a platform should start by defining the role of producer and the role of consumer. Second, it is important to show their motivations for interacting with each other. For what concerns value, it refers to the supply or inventory of the platform. It could be either a physical or a digital good, as well as a service or a service provider. This depends on the nature of the platform. For instance, on a platform like Facebook, status updates and other content constitute value. Again, on a data platform like Nest, the data itself captured by the thermostat creates the supply of value.

Phase 2: building a platform canvas also requires enabling the plug-and-play business model (Figure 33). On one hand, this means creating an open and participative infrastructure; on the other hand, this also needs the enablement of quality control mechanisms. There are two main elements that guarantee this balance on an ongoing basis. First, channels that enable participants to plug into the platform in an open manner. Channels involve: websites and apps, distributed access mechanisms like widgets, browser plug-ins, share buttons, but also the provisioning of APIs and Software Development Kits (SDKs). Other forms of access involve channel partners who help some kinds of producers and consumers to participate. Channels must be always combined with access control and filters to

balance open access with quality control and relevance. Access control may be designed to apply to both platform access and post-access rights and it can be editorial, algorithmic or social. Access control aims at selecting the producers who are allowed to participate to the interaction. Post-access control aims at creating consumption filters to serve relevant and customised content to consumers. This may happen through different mechanisms that require access control for producers or filter creation for consumers. To create such filters, it is important for the platform to acquire significant data about its consumers on an ongoing basis. Figure 33 illustrates the plug-and-play nature of the platform and the necessity to always balance open access with curation and quality control mechanisms.

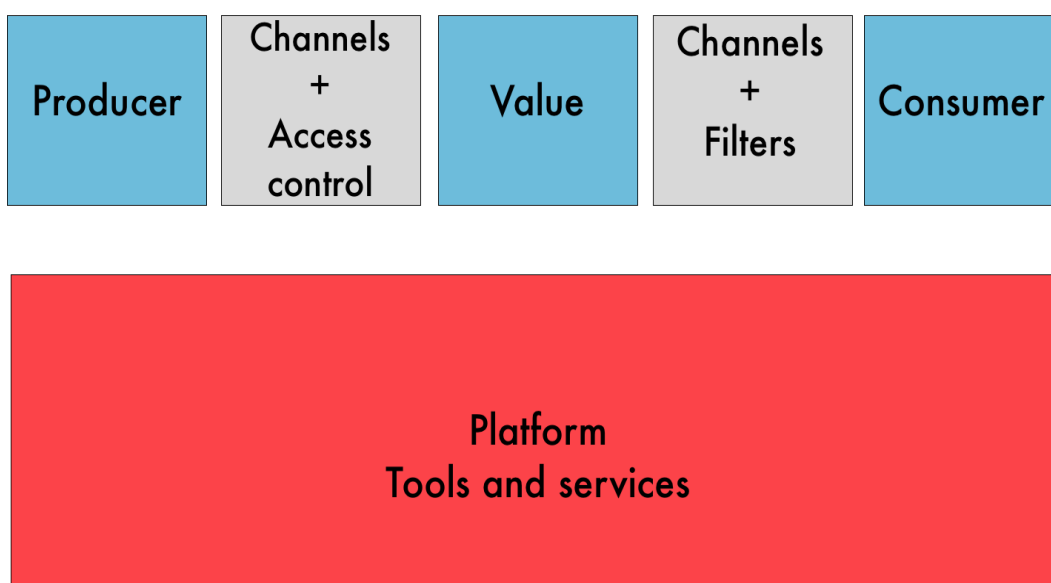


Figure 33 - The platform canvas must account for channels that enable participants to plug into the platform, as well as filters that ensure that relevant content is distributed to consumers. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 141 (Choudary, 2015, d).

Clearly, every platform has its own structure. Although the components of the platform canvas are common to every platform, the relation of the platform tools, services, channels and filters to their ecosystem is demonstrated by how the building blocks of the canvas interact with each other.

Phase 3: building the infrastructure that enables the interaction. In order to do so, the platform must provide tools and services that both producers and consumers can leverage. There are three different types of tools and services:

1. Tools and services of creation: they include specialised creation tools for producers like SDKs and content creation interfaces. Usually, platforms that enable the exchange of virtual goods (content) or remote services, present the most sophisticated tools of creation. However, not all platforms need such specialised tools.

2. Tools and services of curation and customisation: this kind of tools may be both in-house or partner-driven mechanisms, as well as internal or external algorithms or social feedbacks. They constitute the services and features that enable curation and customisation mechanisms.
3. Tools and services of consumption: they are required to serve value to consumers. This may involve the creation of consumption interfaces, newsfeed, external widgets, as well as static interfaces.

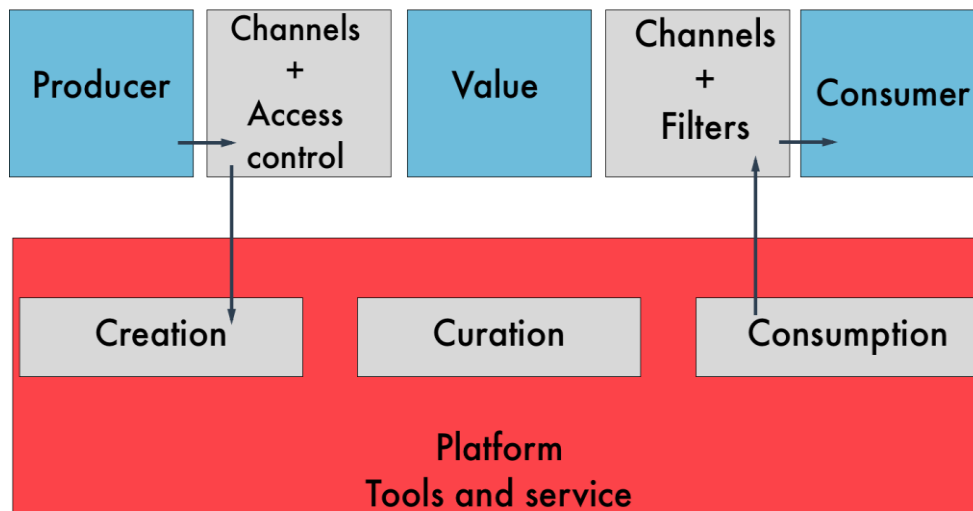


Figure 34 - The platform canvas must provide tools and services that both producers and consumers can leverage for the interaction. There are tools and services of creation, curation and consumption. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 143 (Choudary, 2015, d).

It is important to highlight that the design of tools and services must always be aligned with the three roles of a platform: pull, facilitate and match the interaction. Therefore, tools and services must be built on top of the platform accordingly.

Phase 4: this is the final step of building out the platform canvas and it is focused on the value captured by the platform. It involves two factors. First, the currency used by consumers to pay producers. It may be money, but also social currency, in terms of attention, reputation, influence or other forms of non-monetary currency. Second, the platform must be able to capture value in some way. Here, we must differentiate between actual money exchange and non-monetary currency exchange. In the former, the platform usually captures a cut of the transaction. In the latter, the platform may capture value in five different ways:

1. Charging one side to access the other;
2. Charging a third party for advertising;
3. Charging producers and consumers for premium tools and services;

4. Charging consumers for access to high-quality, curated producers;
5. Charging producers for an ability to signal high quality.

It is very important to understand how the value capture mechanisms work as the platform derives value from every interaction, even if it may not be money. For example, the capture of attention or data from one interaction may lead to the ability to monetise another interaction.

In conclusion, going through the four phases presented above, leads to the creation of the platform canvas (Figure 35):

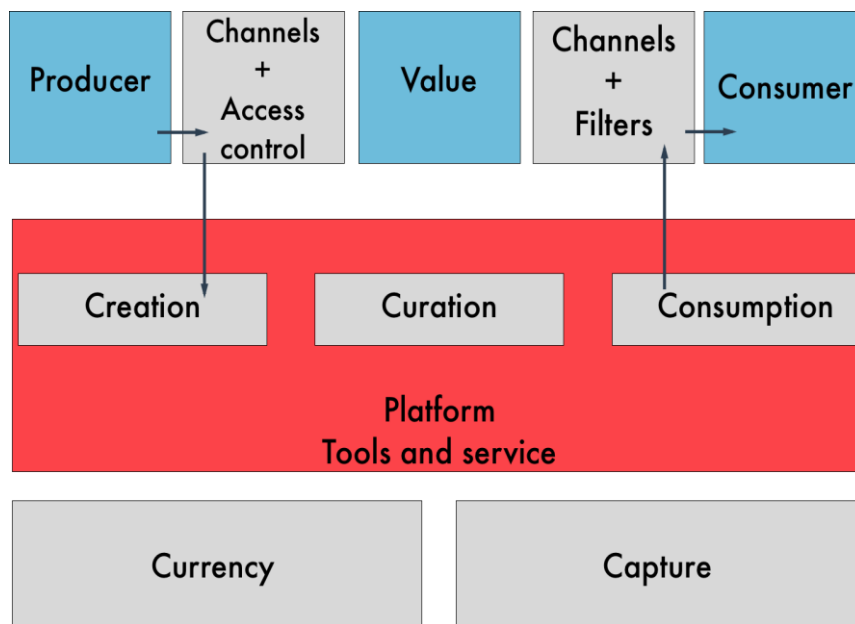


Figure 35 - The complete platform canvas. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 145 (Choudary, 2015, d).

Up until now, the basic platform canvas as theorised and designed by Paul Choudary was presented. Let's spend some words about multi-sided platforms with multiple interactions. Some platforms, in fact, do not focus on just one single interaction. On the contrary, they present one core interaction and multiple edge interactions around the central one. In this case, the platform architecture must be designed around the core interaction and, subsequently, the canvas may be leveraged to lay out an edge interaction. Here, the edge interaction benefits both from platform elements that have already been laid out for the core interaction, as well as from the value captured by the core interaction itself. In Chapter 4 the Blockbuster case study will be analysed to recall a traditional business model. Subsequently, Netflix's current business model will be studied by employing the Choudary's framework. The main differences between Blockbuster and Netflix will be highlighted in order to demonstrate how platforms increase the overall efficiency of a business.

Chapter 4

A comparison between Blockbuster's and Netflix's Business Model

4.1 The home entertainment industry: an overview⁶

The description of the history of the home entertainment industry requires starting from the U.S. scenario of the 70s. In this decade, the first home video rental store was opened in Los Angeles and contemporarily movie studios started releasing movies in VHS format. In 1985 David Cook founded Blockbuster and the company went public a year later.

In the 1980s, major retailers formed the Video Software Dealers Association. This allowed video stores to defend their right under U.S. copyright law to rent movies. In 1988, the company was the top video retailer in the U.S., with \$200 million in revenue and more than 500 stores. 1988 is a crucial year for the home video rental industry because for the first time annual video rental revenues exceeded theatrical box office receipts. In 1989, then, Blockbuster started expanding outside the U.S. and in 1991, it acquired Erol's, the third largest video retailer, obtaining more than 1500 stores. In 1994, the company was acquired by Viacom.

In March 1997, DVDs entered the U.S. market and, starting from that moment, the DVD player was rapidly adopted. According to Randy Hargrove from Blockbuster: "DVD has been the fastest-growing commercial electronic in history" (The Washington Times, 2003). In the same year, Netflix, a DVD-rental-by-mail firm was co-founded by Reed Hastings and Marc Randolph in Los Gatos, California (Xavier, 2014; Netflix Inc., 2017, c, d). Reed Hastings, who started the company, was a former high school maths teacher, who sold its software company for \$2.5 million. Randolph founded the computer mail-order company MicroWarehouse and was the vice-president for marketing for Borland International. The main object of Hastings and Randolph was to exploit the power of the Internet to displace the traditional home video rental market, the reason why they named their company "Netflix". The concept behind it was that, rather than shop at physical retail locations, consumers could browse Netflix's website to select titles, receiving the DVDs by mail among with a red return envelope (Wired Staff, 2009). In April 1998, Netflix launched the world's first online DVD rental service in the U.S., offering more than 900 titles. The lightweight DVDs allowed to use the U.S. Postal Service to deliver a DVD in a single package. In December 1998, Netflix formed a

⁶ Data from the archive of the entertainment merchants association were used, relative to the years 1975-1979, 1980-1989, 1990-1999. Accessed in: <http://www.entmerch.org/industry/1975---1979.html>, <http://www.entmerch.org/industry/1975---1979.html>.

partnership with Amazon.com Inc. Customers were now re-directed from Netflix's website to Amazon.com if they wished to buy the movies they have seen. Amazon, in return, promoted Netflix. In August 1999 Blockbuster went public. On December of the same year, Netflix introduced the subscription model (Netflix Inc., 2002). According to Randolph, Netflix tested three different concepts: subscription billing, the queue and the unlimited rental program. The company was then able to offer its services for a very affordable price and the service was called Netflix Unlimited Rental Service (NURS) (Antonoff, 2015). Both the website and the software were re-engineered by Barry McCarthy, former CEO at Netflix, to support the subscription model (Sandoval, 2010). The website presented then a search engine that allowed customers to search movies based on genre, title or actors. Customers could also create a queue of movies: subscribers received a new title from Netflix as soon as the previous one was returned. So, from the very beginning, Netflix's strategy went beyond the DVD rental, offering its recommendation system to everyone.

When Netflix introduced the subscription plan, the U.S. video rental and sales market was estimated to be greater than \$17 billion (Netflix Inc., 2002). Blockbuster owned almost 6,500 store locations worldwide and it had an estimated market share in the U.S. of 27%: it was the leader on the market. The rest of the home video market was highly fragmented. The advantage of Netflix lied especially within the fact that it did not charge its users with late fees (which constituted the major source of revenue for Blockbuster).

In addition, the company relied on revenue sharing models to acquire content from the studios. Historically, video providers purchased rental copies from Hollywood studios at wholesale prices. Video rental chains benefitted from heavy turnover of tapes to monetise their library. However, by the late 1990s, through revenue sharing models, studios provided DVDs at discounted prices in exchange for a cut of revenues. By adopting this model from the very beginning, Netflix minimised up-front costs for content acquisition and inventory risk. The exclusive window for home video sales and rentals typically lasted 30 to 90 days and came in between the theatrical and Video On Demand/Pay Per View windows (VOD/PPV) (Blockbuster Inc., 2010).

In 1999 Amazon.com was ranked as the number one retailer of video and DVDs. In 2000 Hastings realised that his company was losing money so he proposed an alliance to Blockbuster: he offered Blockbuster to sell 49% stake in order to take the name Blockbuster.com and to become Blockbuster's online service. However, the movie-rental giant refused the deal (Auletta, 2014).

On the same year, Netflix developed CineMatch, a personalised recommendation system that compared customers' rental patterns and then used information to recommend titles to people with similar profiles. After the 2002 Netflix's IPO, the company had 600,000 subscribers and more than

11,500 titles of television and movies (Netflix IPO gains on Nasdaq, 2002). The revenues from subscriptions touched \$150.8 million (Netflix Inc., 2013).

Between June and November 2004, Netflix increased the price and then retreated it. In fact, according to Brian Bolan, an analyst from Marquis Investment Research, the key challenge for Netflix was to maintain its current price structure (La Monica, 2005). In 2005, Netflix entered a partnership with Wal-Mart (What's next for Netflix?, 2006) and in 2007 the company introduced its streaming video service. Broadband and Wi-Fi started proliferating on laptops when Netflix introduced the "watch instantly" feature (Liedtke, 2007). This was a critical innovation that allowed the company to save on distribution costs. Netflix in fact had to pay the postal service \$0.80 for mailing the DVD to the subscriber and return. Also, it had to build distribution centres across the country to meet its goals of having the DVDs in the mailboxes within one day of placing the order. It would cost only \$0.05 to stream a movie and a little more for HD. Although it required a personal computer and high-speed Internet connection, this constituted another step towards the Netflix's objective to become a global streaming service. The studios contributing to Netflix's new service included: NBC Universal, Sony Pictures, MGM, 20th Century Fox, Paramount Pictures, Warner Brothers, Lionsgate and New Line Cinema (Liedtke, 2007).

However, the release window slightly changed. Renting DVDs was in fact covered by the "first sale doctrine": once that Netflix paid full price for a DVD from the studio, the company had the right to rent it out as many times as it wanted. Moreover, Netflix could acquire the latest DVDs as soon as they became available for purchase (typically two-three months after the theatrical release). Within the new streaming service, movies were available simultaneously with the DVD release. Netflix owned the rights of unlimited streaming and not pay-per-view. After one year, the pay television had access to the content too, but they had the right to broadcast the movie only up to 18 months.

In September 2011, Netflix radically changed its business model. The company carried two different businesses: the DVD rental by mail (renamed Qwikster) and the Internet streaming service (which remained as Netflix). To sustain the increasing costs, Netflix announced new, higher subscription charges. Specifically, it did not offer anymore a plan including both unlimited streaming and DVD-by mail, rather they offered two different plans: DVD-by mail only and streaming only. If customers wanted to keep both services, they had to pay two different subscription fees (Sandoval, 2012).⁷ This caused discontent among consumers and a lot of subscribers left. In addition, Starz, a pay TV company that has been providing content to Netflix since 2008, refused to renew the contract. Netflix,

⁷ "We are separating unlimited DVDs by mail and unlimited streaming into separate plans," wrote Jessie Becker, a Netflix marketing manager, "to better reflect the costs of each and to give our members a choice: a streaming-only plan, a DVD-only plan or the option to subscribe to both. With this change, we will no longer offer a plan that includes both unlimited streaming and DVDs by mail."

in fact, had a very strong competitive advantage over premium TVs. These started obstructing this power (Sandoval, 2012). Netflix's stock price dropped by nearly 77% in four months and Hastings was forced to kill Qwikser a few weeks later it was announced (Sandoval, 2012).

In 2013, although there were a lot of opponents, Netflix kept on following its strategy. The company, in fact, had a great success in transforming a product-centric business model based on inventory and movies, into a customer-centric business model. Since the focus has always been on customer's satisfaction, Netflix apologised for the two subscription fees introduced in 2011. Besides, the company kept on focusing on "core base of good customers". The aim of the company was not to acquire new customers, rather than to nurture its already existent ones. In order to do so, it started producing original content for streaming service. The first original series, House of Cards, won three PrimeTime Emmy Awards out of nine nominations (the first time in history that a non-TV network won these awards) (Netflix wins three Emmys, 2013). In the same year, Hastings decided to start working directly with producers to develop content (On Wall Street Netflix is a come-back kid, 2013). In 2013, Netflix was operating in three segments: domestic streaming, international streaming and domestic DVD business. From 2010 on, it also started its international expansion into Canada (2010), Latin America and Caribbean (2011), as well as into European Countries like the UK, Ireland and Scandinavia (2012), Netherlands (2013), Germany, Austria, Switzerland, France, Belgium, Luxemburg (2014), Australia, New Zealand, Japan, Spain, Portugal, Italy (2015) (Netflix Inc., 2016). It also wanted to expand to Asia, even if it faced multiple challenges there. In Asia, in fact, Netflix had to acquire the right mix of content (global and local) and stipulate deals with local media houses (Trefis Team, 2013). Here, real competition came from local linear TV, which was the dominant source of entertainment. Today Netflix is present in about 200 countries: it entered the first Asian market when it launched into Japan. South Korea, Singapore, Hong Kong, Taiwan and India were part of the expansion strategy. China was the exception, even if today the company is doing all that it can to enter this market.

In Europe, Netflix faced battles with the local premium TVs (especially in Britain, France and Germany) that dominated the home entertainment industry (Scott, 2014). According to industry experts, Netflix had to expand internationally to overcome slow growth in the U.S., increasing international subscribers' base at a very incremental cost. The expansion strategy consisted in acquiring content, penetrating broadband services, and offering U.S. content with local language subtitles. The company exploited individual services' providers in the local markets for technical and logistic support on a contract base (Dixon, 2013).

Currently, Netflix has the most nominated series of any network. In Q2 2017, the company premiered 14 new seasons of global Netflix original series, 13 original comedy specials, 6 original

documentaries, 2 original documentary series, 9 original feature films and 7 seasons of original series for kids (Netflix's Shareholder Letter, 2017). Competition for entertainment times is fierce, but fortunately the market is vast and diversified. In addition to the many Service Video On Demand (SVOD) players around the world (Blim, Globoplay, FilmStruck, Hooq, iflix, Stan, etc.) the large-cap tech companies, especially Amazon, are investing heavily in original and licensed content (Netflix's Shareholder Letter, 2017).

4.2 A focus on Blockbuster's history

In this dissertation, two companies that are representative of two very different business models are analysed: Blockbuster and Netflix. While the former has a traditional business model, the latter presents all the characteristics of a platform one.

First, using Osterwalder's and Pigneur's canvas (2010) the Blockbuster's business model canvas will be built. Subsequently, using the Choudary's framework presented in Chapter 3, Netflix's business model will be analysed. Finally, highlighting the major similarities and differences between the two business models I intend to illustrate step by step the transition from a traditional pipe model to a platform one.

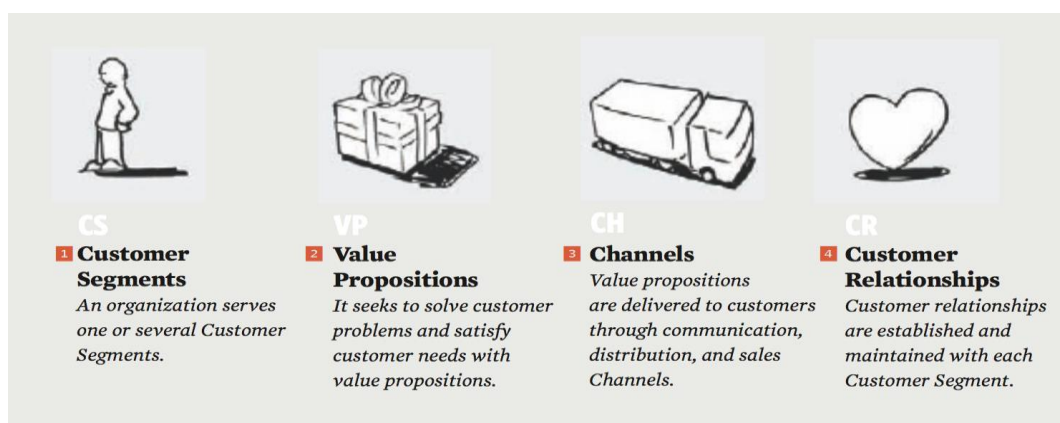
The first Blockbuster store opened in October 1985 in Dallas (Texas), starting as a small neighbourhood business. In 1994, Blockbuster was acquired by Viacom, the telecom conglomerate, for \$8.4 billion. By the 2000 it had 9,199 stores with revenues greater than \$6 billion. In the same year, the future Blockbusters' CEO John Antioco refused to acquire Netflix and starting from 2004 the company began to fall. At that time, Blockbuster was still a very strong business, however Antioco did not consider the next-future advent of the DVD and streaming businesses. In 2002, a new rival, Redbox, introduced the revolutionary concept of using automated rental kiosks to offer DVDs. In the meantime, Netflix began to make a profit. In 2004, Blockbuster split from Viacom and it introduced Blockbuster.com, the new online service. Nevertheless, by the time that Blockbuster entered the DVD-by-mail service, Netflix had already reached \$270 million in revenue and 1 million subscribers. In 2007 Blockbusters' revenue dropped to \$5 billion and 5,100 stores, compared to 9,100 stores in 2004. Reed Hastings proposed Blockbuster to acquire Netflix, but this was again denied by Antioco. Meanwhile, the rental market was becoming saturated and Blockbuster did not react. The new CEO, Jim Keyes decided to keep on focusing on a brick-and-mortar business model, while Netflix introduced the video streaming service, strongly innovating its business model. By the end of 2011, revenue was down below \$1 billion and a lot of stores were closed. By the same year the online

mail-service was shut down and, in April Blockbuster was acquired in bankruptcy court for \$320 million. In 2013, Dish Network, the buyer of Blockbuster, announced to close all the remaining stores (Holpuch, 2013). Today, Blockbuster is still active with Blockbuster on-demand streaming which is part of the Dish Network service package (Bennington & Samuel, 2015; International Directory of Company Histories, 2000). There is not a monthly subscription fee for unlimited content, rather a pay-as-you-go account. Basically, the user pays a minimum of \$2,99 for renting a movie which expires after 24 hours. Currently, the service is available only through the Sling TV app which also requires a subscription to Sling TV (Weinberger, 2015).

4.3 Blockbuster’s Business Model

To analyse Blockbuster’s business model, the framework presented by Osterwalder and Pigneur in their work “Business model generation” (2010) is adopted. The company, in fact, had a very traditional brick-and-mortar business model: it owned physical stores where customers had a face-to-face relationship with the employees (Investopedia). For this reason, Blockbuster is taken as a pipe, where value is produced upstream and delivered downstream to the customer through a linear process. In this paragraph, the Blockbuster’s business model canvas will be built. In order to do so, the financial statements and investor relations published by Blockbuster especially from 2000 on (Wikinvest) are used.

According to Osterwalder: “A business model describes the rationale of how an organization creates, delivers and captures value” (Osterwalder & Pigneur, 2010, p. 20). Specifically, there are nine building blocks to analyse and to understand the logic behind the value creation of a company (Figure 36):



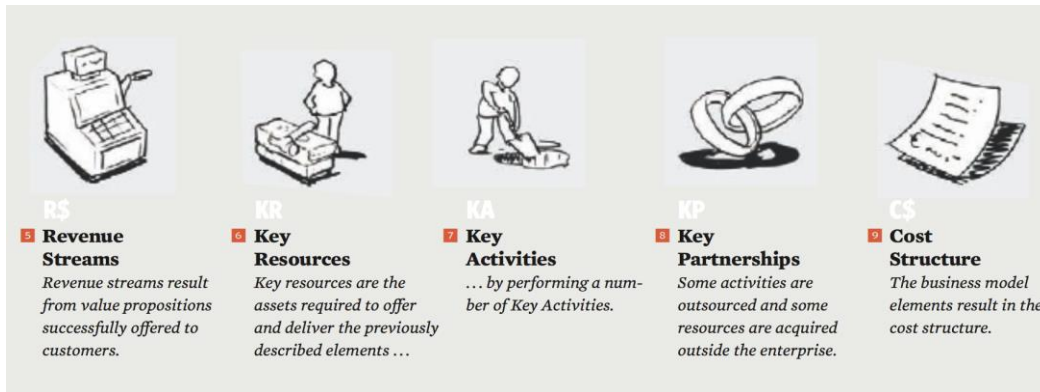


Figure 36 - The nine building blocks that constitute a business model. From: Business model generation, pp. 22-23 (Osterwalder and Pigneur, 2010).

Putting all these blocks together, it is possible to create the business model canvas (Figure 37):

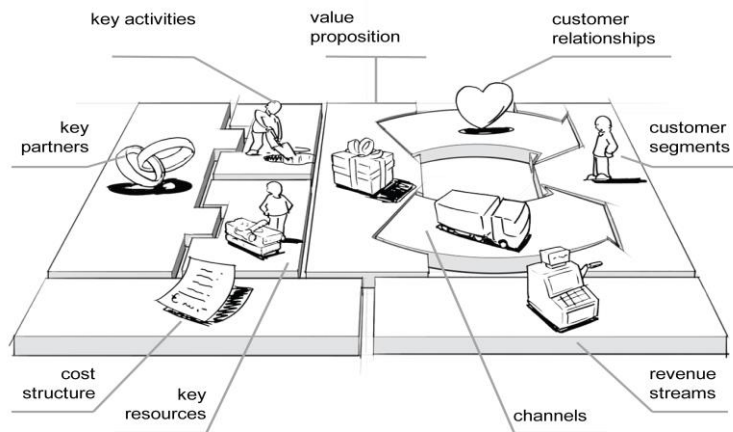


Figure 37 - The business model canvas. From: Business model generation, pp. 24-25 (Osterwalder and Pigneur, 2010).

Let's now analyse step by step the Blockbuster's business model.

Customer segments: this building block defines the groups of people the company intends to serve. The company distinguished between different segments of the market, with slightly different needs. Indeed, I would define it a segmented business model. Specifically, Blockbuster targeted both everyday movie watchers and game aficionados. Demographically, the company considered all age groups to be potential customers but mainly targeted the lower and middle class environment. Upper classes, in fact, preferred buying, rather than renting movies or games (Acton, 2010-2011).

Value proposition: this building block refers to the core value that the company delivers to its customers, as well as to the needs that it tries to satisfy.

Blockbuster targeted customers who decided at the last minute that a given night was a “movie night”. Therefore, it satisfied the need of a person who wanted to quickly obtain the newest movie release. In the Blockbuster overview, we can read:

“Our mission is to provide our customers with the most convenient access to media entertainment, including movie and game entertainment delivered through multiple distribution channels such as our stores, by-mail, vending and kiosks, online and at home. We believe Blockbuster offers customers a value-priced entertainment experience, combining the broad product depth of a specialty retailer with local neighbourhood convenience” (Blockbuster Inc., 2009, p.2).

Moreover, part of its value proposition is to open new locations, both to expand geographic coverage and to increase penetration and share in existing markets. According to Osterwalder’s and Pigneur’s work, I think that the Blockbuster’s business model creates value for its customers by allowing them to obtain home entertainment while reducing costs. Rather than buying VHS or DVDs, in fact, they could rent them for a very convenient fee. Hence, another strong point of the company lied within the affordable price it proposed. This created a very high level of accessibility through multiple channels (stores, by-mail, vending and kiosks, online, at home).

Distribution channels: this is the building block that refers to the channels that the company uses to reach its customers. Osterwalder and Pigneur distinguish different phases in which multiple channels can be employed. First, VHS/DVDs delivery to the store was accomplished by motion picture studios at different times known as “release windows”. The first distribution channel after the theatrical release was home video on DVD or VHS. This window lasted 45 days and excluded most other forms on non-theatrical distribution such as PPV, VOD, premium TV, cable and network syndicated TV. Thereafter, movies were made available to TV distribution channels.

To create awareness, Blockbuster used commercials, its own website, social networking websites, telephone, mail, in-store promotions and applications for smartphones and tablets (Clarck, McKelvey, Robinson & Sampson, 2012). They were almost exclusively owned and direct channels, which produced high margins even if they were costly to implement. Direct mails were sent to subscribed customers through circulars, coupons and flyers. In 2011, Blockbuster also announced two free in-store rental coupons that Blockbuster Online customers received each month for both game and movie rental. In addition, they also received coupons good that could be employed for other in-store Blockbuster products and programs, including discounts on new, used and traded retail movies and games. As Antioco declared:

"With this lower online price point and new consumer incentives, we intend to drive customer awareness and new subscriptions for our online service. We've been extremely pleased with the

launch of Blockbuster Online, and in fact in the first six weeks since the service launched we've signed up more subscribers than Netflix signed up in its first year and a half of existence" (Blockbuster Inc., 2004).

Word-of-mouth was also something that Blockbuster relied on: customers discussed their likes and dislikes of the products and this impacted on the customer base satisfaction because responses were helpful in improving Blockbuster's services and products themselves. For what concerns purchase, Blockbuster used different channels: in-store purchase, on-line purchase, by mail and through kiosks. Starting from 2004, the website contributed to a huge part of the sales, as renting online was introduced as a new service. Blockbuster also engaged in personal selling through its stores sales associates and it completed special events and in-store demonstrations to promote the company's image while giving away coupons and contests to celebrate and promote the brand (Clarck, McKelvey, Robinson & Sampson, 2012).

Customer relationships: this building block refers to the type of relationships that the company creates with each of its customer segment.

Blockbuster had both personal assistance and self-service relations with its customers. The company, in fact, wanted to create very familiar relations: employees were always willing to help customers in their choice, giving them suggestions in the in-store locations. On the other hand, especially after the introduction of the online subscription service, customers were more oriented towards a "self-service" personalised experience. People looked for a title in the online catalogue and received the DVD by mail.

Revenue stream: this is the building block which refers to the cash that the company produces from each customer segment. It depends on the value customers are willing to pay for.

A significant part of Blockbuster's revenue came from the late fees that consumers payed whenever they returned the DVD with delay. In 2005, however, the company abolished the late fees. This was one of the moves Blockbuster did to give customers more ways to rent. However, to balance the losses coming from this change, in 2005 the company launched in-store movie, in-store games and online DVD subscription programs with no due dates (one-week grace period, after which Blockbuster would have sold the product to the customer subtracting the rental fee), no late fees and an unlimited number of movie or game rentals (up to three at a time depending on the program) (Blockbuster Inc., 2005).

For what concerns the online service, Blockbuster required its customers to pay a subscription fee to get movies by mail choosing from a broad online catalogue. Customers could rent unlimited DVDs

by mail, up to three movies at a time, for one low monthly fee of \$19.99 in 2004 (that became \$14.99 in 2005). The service did not include return dates or extended viewing fees and subscribers received two free in-store movie rental coupons each time. From 2005 on, Blockbuster also offered a subscription fee for its in-store customers: they could rent an unlimited number of movies for a \$14.99 monthly fee (with an introductory fee of \$9.99 for the first month), one DVD at time with no late fees (Blockbuster Inc., 2005). After the demand for a movie fell, the store remarketed the DVD to reduce the inventory and generate additional income.

In sum, until 2005 the major revenue stream came from the late fees: Blockbuster's profit focused on maximising the period a DVD or a game were out for rent. From 2005 on, however, Blockbuster had to face a fierce competition from Netflix and decided to eliminate this feature. Revenues now came from subscription fees, both for the in-store movie-rental and for the online service. In addition, a significant part of the profit came from DVDs' or games' sales.

Key resources: they are the key assets used by the company to create value.

Blockbuster owned both physical and intellectual key resources. The broad catalogue of movies and games represented one of the major physical resource. Specifically, the company had about 2,500 titles per store, a substantial part of which was represented by hit movies, with new releases receiving the most prominent display. Stores usually acquired 100 copies of a new release and they had an estimated 75%-80% of demand, compared to 20%-25% for catalogue releases.

A key resource was also the network of stores owned by Blockbuster. By 2006, the company had 5,195 U.S locations, 4,255 of which were company owned (the rest of the locations was part of a franchise).

For what concerns intellectual key resources, Blockbuster made multiple partnerships to get digital rights management for the on-demand service, as well as deals to obtain franchise rights to operate all around the globe through Blockbuster's subsidiaries. However, licensing deals with the studios were the most important intellectual resource, because they were the only source to get movies and games (through revenue share model and purchase model). In particular, Blockbuster benefitted from the possibility to get movies before its competitors (28 days after the DVD release), which gave the company a substantial competitive advantage (Carr, 2010). Finally, Blockbuster stipulated partnerships with device manufacturers to make the On-Demand service available on multiple platforms.

Key activities: this building block represents the main activity the company must perform to make the overall business work.

Certainly, the key activity for Blockbuster was the VHS, DVD, Blue Ray and game rental or sale in-store. The Blockbuster's business has been built around this activity from the very beginning and part of the strategy included creating a strong network of stores. From 2004 on, however, the DVD-by-mail service was introduced to compete with Netflix.

For what concerns the revenue stream, the key activity for Blockbuster was to obtain new releases as soon as possible to be competitive in the entertainment industry. In fact, usually consumers wanted to rent them during the first three weeks of the studio distribution windows.⁸

Key partners: they are the key partners or suppliers of the company.

The "Suppliers and purchasing arrangements" (Blockbuster Inc., 2010, p.13) reports that:

"Our goal in purchasing domestic rental inventory is to design purchasing strategies with each individual studio or game publisher that will provide us with the most appropriate level of copy depth at the best available price in order to satisfy our customers' demands and, eventually, to increase our customer traffic. In some instances, those deals involve our purchasing rental inventory on a title-by-title basis. In other instances, we may negotiate a revenue-sharing arrangement."

Therefore, studios and game publishers were the main partners for Blockbuster. The company's main source of revenue, in fact, lied within the catalogue of available titles. Partnerships were indeed driven by the objective to acquire new key resources. Blockbuster also partnered with new media and e-commerce companies to expand beyond its store - based business and move into other home entertainment technology. (Blockbuster Inc., n.d.). For what concerns marketing and advertising, in 2002 Blockbuster created a Global Marketing and Product Alliance with The Coca-Cola Company: "Blockbuster to distribute Coca-Cola products in up to 8,000 stores around the world. The Coca-Cola Company to purchase media assets from Blockbuster for business-to-business and promotional purposes" (Blockbuster Inc., 2002).

Cost structure: this building block describes all the costs incurred by the company to operate the business model.

I would consider Blockbuster as a value-driven business model, because its strategy always focused on delivering the best home entertainment experience to its customers, rather than on minimising costs. I would split the cost structure between fixed and variable costs. Occupancy and payroll were two of the most significant fixed costs, among with the maintainance costs of the stores. For what

⁸ The first distribution channel after theatrical release was home video on DVD and VHS. The window lasted 45 days and excluded most other forms of non-theatrical distribution such as pay-per-view, video-on-demand, premium TV, cable and network syndicated TV. Thereafter, movies were made available sequentially to TV distribution channels.

concerns variable costs, these were mainly related to the purchase of the inventory. Blockbuster acquired almost half of the inventory under a purchase model in which it would pay the studios \$15-\$18, rent it 9-10 times for \$4 per rental, and then resell the DVD for an average of \$8 per unit. The cost of the in-store rental library was subsequently amortised over 3-12 months, to an estimated residual value ranging from \$2-\$5 per unit, depending on the product category. The other half of the inventory was acquired through a revenue sharing model in which Blockbuster paid the studio about \$5 per copy, rented 9 times and resold it for an average of \$8, sharing 30% of the revenues with the studio.

Regarding international markets, 54% of the movie and game rental inventory units were purchased on a title-by-title basis directly from the studios or through sub-wholesalers appointed by the studios to distribute the product in specific countries. The inventory was purchased under revenue-sharing agreements as well, even if they changed country by country. Blockbuster also acquired them through trading programs. The general merchandise (complementary to the rental and retail movie and video game inventory) was acquired from a variety of suppliers on a product-by-product basis. Finally, franchisees typically obtained movies from their own suppliers and they were also responsible for obtaining part of the complementary products on their own. However, if Blockbuster purchased the distribution rights to a movie or if a franchisee participated under the same revenue-sharing arrangement, the franchisee could obtain the same product from the franchisor itself (Blockbuster Inc., 2009).

Next page shows the Blockbuster business model canvas.

Key Partners <ul style="list-style-type: none"> • Studios and game publishers • Media and e-commerce companies • The Coca-Cola Company (2002) 	Key Activities <ul style="list-style-type: none"> • VHS, DVD, Blue Ray, games rental • DVD-by-mail service (from 2004 on) • Obtain new releases 	Unique Value Proposition <p>“Provide our customers with the most convenient access to media entertainment (movies, games)”</p>	Customer Relationship <ul style="list-style-type: none"> • <i>Personal assistance</i>: very familiar relationships with customers • <i>Self-service</i>: personalised, independent experience through the online catalogue 	Customer Segment <ul style="list-style-type: none"> • Everyday movie consumers • Game aficionados • All age groups, low-middle class environment
	Key Resources <ul style="list-style-type: none"> • <i>Physical</i>: broad catalogue of titles (about 2500 titles per store), network of stores • <i>Intellectual</i>: digital rights, franchise rights, licensing rights from the studios and from device manufactures 		Channels <ul style="list-style-type: none"> • <i>Awareness</i>: commercials, website, social networking websites, telephone, mail, in-store promotions and apps • <i>Purchase</i>: online, in-store, by mail, kiosks • <i>Delivery</i>: specific “release windows” 	
Cost Structure <ul style="list-style-type: none"> • Value - driven business model • <i>Fixed costs</i>: occupancy and payroll, maintainance costs of the stores • <i>Variable costs</i>: half of the inventory acquired through a specific purchase model and half purchased under a revenue sharing model • <i>International markets</i>: inventory acquired on a title-by-title basis directly from the studios or through sub-wholesalers; merchandise acquired on a product-by-product basis 		Revenue Streams <ul style="list-style-type: none"> • Late fees (until 2005) • Online and in-store monthly subscription fees (from 2005 on) • Sale of DVDs or games to reduce inventory 		

4.4 Netflix's platform business model analysis

Before designing the Netflix's business model using Choudary's canvas, I would like to clarify some concepts. First, it is important to highlight that starting from 1997, Netflix changed its core business three times. Initially, it offered a DVD-by-mail service through a very basic website with a rudimentary recommendation engine. In 2007, the company decided to offer video streaming service in addition to the DVD-by-mail service in the U.S. Finally, in 2011 it expanded its business with a DVD-by-mail service plus a streaming service in the U.S. and a streaming service in the rest of the globe. In this paragraph, using the Choudary's canvas, I will analyse the current Netflix's business model, in order to highlight the differences with the Blockbuster's traditional one. I chose Blockbuster to present a traditional business model (instead of the first Netflix's business model) because, if we consider Choudary's definition of a platform⁹, Netflix can be considered a platform from the very beginning. Both producers and consumers, in fact, co-create value with their own activity: while producers offer content (in terms of DVDs or streaming movies and TV series), consumers with their activity produce metadata that power the recommendation engine. Data are the most important source of value for Netflix, because they allow the company to deeply understand consumers' patterns of consumption and offer a personalised and engaging experience. Following Choudary's framework, then, they are almost strategic data used to optimise the entire ecosystem (Parker, Van Alstyne & Choudary, 2016, a).

I had an exchange of emails with Mr Choudary and he agrees with me in considering Netflix as a data platform, meaning a platform with a significantly dominant data layer. In my opinion, in fact, data themselves represent the core value unit. "Provide compelling value to subscribers" and "enhance customer experience using technology and operate efficiently", are just two of the sentences used to describe Netflix's strategy. To deliver relevant value to its customers, indeed, the company built from the very beginning a recommendation system, named CineMatch. It was a software for customisation: people were encouraged to rate titles they rented and CineMatch, in turn, suggested those titles to other subscribers with similar patterns of consumption. As Patt Wyatt, President of Fox Home Video said: "Netflix offers more personalised communication. The more customer shares, the better Netflix is able to customize" (O'Brien, 2002). Therefore, the company invested a lot in the website technology. Its system could capture huge quantities of empirical data, to apply relevant analytics and predict customers' desires. The website was personalised for each single customer creating a "one-of-a-kind" experience that provided recommendations, ratings, offered customers' reviews and created customer-specific genre names. The more customers were active on the website, the more

⁹ <<A plug-and-play business model that allows multiple participants (producers and consumers) to connect to it, interact with each other and create and exchange value>>.

they could benefit from a tailored experience. Netflix, on the other hand, had access to a lot of metadata: information about customers' preferences and purchasing trends enabled it to improve its service and to leverage suppliers and advertisers. This virtuous cycle resulted in a strong subscribers' loyalty. Recommendations were based on customers' feedback, both individually and in the aggregate. Netflix needed to continually improve its search, queues, recommendations, ratings and other social media features so its subscribers became reliant on Netflix for services they required. For all these reasons, I would consider data as the major source of value for the company. Data about consumers' activities are a key resource for Netflix as they are the means to provide a personalised service by making recommendations to the users. Furthermore, the analysis of consumers' behaviour allows the company to predict what type of content would appeal to most of its subscriber's base (Schmitz, 2015).

For what concerns the platform technology, I would insert Netflix in the third pattern described by Choudary in his work (2015, d): a platform that captures either the exchange of information and currency, and the exchange of goods and services (Figure 39):

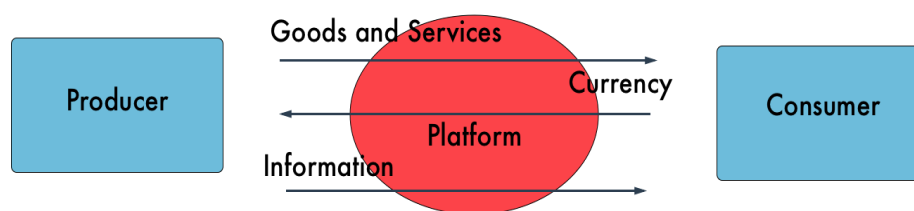


Figure 38 - The platform captures the transfer of goods and services, currency and information. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 114 (Choudary, 2015, d).

Everything concerning the core interaction, in fact, happens through the platform:

1. Consumers plug into the platform, look for content (good) to stream and eventually up vote or down vote it;
2. Consumers' activity creates meta data (information) that are captured by the platform and then analysed to improve customers' experience;
3. Consumers' pay a monthly fee (currency) directly through the platform, with no intermediaries.

Regarding the core interaction, I want to break down the four main activities that constitute a platform's core interaction, to demonstrate how Netflix is extremely efficient in creating value. First, *creation* is executed both by Netflix itself and by external producers. When Hastings introduced the streaming service, in fact, it faced high expenses to acquire content from production companies. Nevertheless, negotiating licensing deals with content providers was very expensive. Therefore, the company started producing original content in 2013. It strongly believed that offering original content

would have meant offering high quality service that satisfied consumers' preferences. As a matter of fact, from 2013 on, the subscription base grew all around the globe. People were more and more incentivised to go back to the platform and stream more content: creation nurtures *consumption*. For what concerns *curation*, I think that for Netflix it is strictly linked to *customisation*. The platform, in fact, presents filters in the form of recommended movies and TV series. The recommendation engine analyses consumers' patterns of consumption and suggests movies and TV series based on genre, actors, plot and more.

In conclusion, Netflix's core interaction is composed by four actions that are strongly coordinated among each other: this ensures value creation and consumption on an ongoing basis.

4.5 Netflix's platform business model canvas

In this paragraph, the Netflix's platform business model canvas will be built following the four phases presented by Choudary in his work (2015, d, pp. 137 – 148) and reported in Chapter 3.

Let's start by defining the role of producer and consumer. For what concerns producers, Netflix has been stipulating licensing agreements with studios and right holders to obtain titles since the very beginning. The long - term view (2017) states that: "Our licensing is generally time-based, so that we might pay for a multi-year exclusive subscription video-on-demand (SVOD) license for a given title. In each market, we license content from multiple suppliers, mirroring the fragmentation of the content industry. Typically, our bids are for exclusive access to the SVOD rights, and we are up against various cable and broadcast networks, as well as online video competitors. As a rule, content owners always want another bidder, and never want one bidder to become too strong".

The company now has expensive partnerships with multiple content providers. Specifically:

- Time Warner, CBS, CW (Schuker & Woo, 2011): close to \$1 billion over eight to ten years;
- DreamWorks (Barnes & Stelter, 2011): \$30 million per picture;
- NBC Universal (Pepitone, 2011): estimated \$275 million per year;
- Disney/ABC (Netflix Inc., a, 2010): estimated \$200 million;¹⁰
- Fox (Netflix Inc., c, 2010): financial terms not disclosed;
- The Weinstein Company (Lawler, 2012).

It also has direct partnerships with premium networks like HBO, Showtime or Starz:

- Epix: \$900 million over five years (\$200 million annually);
- Relativity (Netflix Inc., b, 2010): \$100 million per year.

¹⁰ Disney will launch its own subscription service in 2019, so Disney films currently streaming on Netflix will be removed from the platform at the end of 2018.

Most content licenses are region-specific or country-specific and they are often held to terms for years at a time. The main Netflix's goal is to enable members all around the world enjoy the same content through global licensing, but currently the catalogue varies between countries (Raimond & Basilico, 2016). From 2013 on, Netflix itself started producing original content to stream, so the company can be considered as a producer too.

Regarding consumers, they are active on the platform up voting and down voting content streamed and creating movie playlists. They also produce value (switching to the role of producers) in terms of metadata that are processed through analytics and then used to power the recommendation engine.

Currently, Netflix is available in 190 countries. It is not yet available in China, though the company continues to explore options for providing service there. It is also not available in Crimea, North Korea and Syria due to U.S. government restrictions on American Companies. The domestic streaming service counts 47.905 million paying members, while the international streaming segments has 41.185 million paid memberships at the end of 2016 (Netflix Inc., 2016). As I will explain later, due to cultural differences across countries, Netflix does not stream the same content worldwide, but adapt it to customers' preferences and tastes.

Value is represented by content streamed and the relative intellectual property rights owned by the company, as well as by data produced by consumers.

Regarding the content produced, from 2013 Netflix started producing original content to reduce its dependence on third-party studios and distributors. House of Cards was the first original show produced. Subsequently, the company produced more TV series to attract culturally different segments both in the U.S. and around the world. This included providing audio and subtitles in multiple languages. For instance, the TV series Sense8 was about eight individuals located in different countries who had a paranormal connection to each other. The show was filmed on site all around the world (USA, Germany, UK, Kenya and others) with local actors, in order to attract and satisfy multiple customers' segments. Again, in 2015, Narcos became the top foreign-language TV of all times (Newall, 2015). The same year, Netflix started producing and funding content by itself. This has been a huge source of value creation that allowed the company to expand the subscriber base. Currently, Netflix has local content in 23 languages and it is filming in 19 countries (Donadio, 2017). Anyway, this has been possible only thanks to the significant amount of data produced by consumers and accessed by the company. There is, in fact, a deep research behind content production, which considers consumers' cultural preferences worldwide. Mr Sarandos declared, in fact, that about 30% of the content streamed by subscribers on an average day was local. At the UBS Global Media and Communications conference (2016), Netflix stated that in different territories, it was in "different life cycles" and it was streaming different content accordingly, to appeal to a broader audience (Pelts,

2016). Therefore, Netflix diversified its production, introducing multiple original dramas, such as *Lillehammer*, *Hemlock Grove*, *Orange is the new black*. At the conference, it also declared that it intended to produce value not only through the production of original content, but also by bringing intellectual property owned by other companies to its subscribers. For example, *Gilmore Girls*' rights are owned by Time Warner's Warner Bros but Netflix currently streams the revival four episodes on its platform (Pelts, 2016).

For what concerns the acquisition of global content rights, Netflix follows a specific strategy. In July 2016, the company entered a content licensing agreement for *Star Trek* with CBS Studios International. Now, in 188 countries, excluding the U.S.A. and Canada, Netflix has exclusive streaming rights on *Star Trek*. Furthermore, thanks to a licensing agreement with 21st Century Fox, Netflix has exclusive streaming rights on *American Crime Story* series (Pelts, 2016).

Although movie production is expensive, Netflix believes it is worth it to spend \$1 billion on producing original movies. This is to offer additional value to its customers and attract them back to the platform. However, licensing deals with movie studios still constitute a key resource for the company. In the 2016 annual report we can indeed read: "we regard our trademarks, service marks, copyrights, patents, domain names, trade dress, trade secrets, proprietary technologies and similar intellectual property as important to our success" (Pelst, 2016, part VI). In an effort to acquire Intellectual Property Rights (IPRs) and ownership of appealing stories, Netflix completed its first acquisition on August 2017, acquiring Millarworld, the comic book publishing powerhouse founded by Mark Millar. Together, Netflix and Millar will bring Millarworld's portfolio of critically and fan-acclaimed character franchises to life through films, series and kids' shows available exclusively to Netflix members globally (Netflix Inc., 2017, b). For what concerns data, meaning the value produced by consumers, they will be discussed extensively later, in the context of the recommendation engine.

The analysis of the channels, in my opinion, should be divided into two parts: the first one regarding the channels used by customers to reach the platform, the second one concerning the channels used by Netflix to reach the customers. Customers plug into the platform directly through Netflix website. About the platform, originally Netflix tried to develop its own set-top box to stream content to TVs and PCs. The device was called Netflix Player. Subsequently, the product development team kept on working on the device not independently, rather as part of the Roku company (Carr, 2013). Hastings took this decision because he thought that by developing its own hardware, Netflix could complicate the future partnerships with other hardware makers. Conversely, Netflix wanted to become the first player in subscription streaming video market and such partnerships could have been of strategic importance for the company. Today, Netflix is available on multiple devices: computers,

smartphones, tablets, Internet-connected TVs, Blu-ray players, set-top boxes and video game consoles (Netflix's website). During the last decade, the company stipulated some important partnerships that made the streaming service available on multiple devices produced by companies such as (Netflix's website): LG, Panasonic, Philips, Samsung, Sharp, Sony, Toshiba, Apple, Google. Netflix also exploits multiple channels to reach its customers. The company, in fact, built its own Content Development Network (CDN) and now has its own network of video warehouses around the Internet that it is used to deliver content. Therefore, the company just seeks deals that directly connect it with broadband providers to deliver content (Reardon, 2015).

Netflix also needs channels to reach the worldwide local markets characterised by multiple regulations. In Europe, for instance, a common strategy could not be implemented due to a lack of a uniform law. In addition, people were more willing to pay for a local video streaming service which better met cultural peculiarities (Scott & Peltier, 2015). Therefore, Netflix worked on deals to produce local language content in Spain and Italy and it developed partnerships with cellular providers to deliver the streaming content. For example, Telecom Italia offered Netflix to its customers to strengthen customers' loyalty and satisfaction (Accordo Netflix-Telecom Italia TV via Internet: i contenuti arrivano in Tv con Timvision, 2015). China (and the Asian landscape) placed strict limits on deliverable content: movies and TV series are strongly censored for political content or violence. To operate in China, Netflix should obtain a government license and each original content should get preventive approval from censors (Greenberg, 2016). In 2014, Netflix managed to stipulate a licensing deal with Sohu, another streaming service, to stream House of Cards. Chances to penetrate the Chinese market are poor, especially because regulators placed a 30% cap over foreign content streamed (Shu Ng, 2017). However, the company signed a licensing deal with popular video streaming platform iQIYI, a subsidiary of the Chinese search engine Baidu. In 2016, in fact, regulators blocked Netflix in China, so the company decided to license its content directly to local companies (Pham, 2017). The iQIYI deal is the first of such agreements.

The process of entering Japan required a different strategy: offering a 40% of local programming (compared with the 20% offered in other countries). It was the result of a cultural adaptation: usually in Japan the main channels saw fewer foreign broadcasts compared to other nations. This is why scrolling down Netflix's main Japanese page, a significant focus on local programming can be seen (Figure 40) (Mogg, 2015).



Figure 39 – Netflix main page in Japan. As we can see, there is a prevalence of local shows. The company’s strategy, in fact, focuses on penetrating the home entertainment streaming market worldwide meeting cultural preferences. In Japan, the main channels saw fewer foreign content compared to other nations, reason why Netflix decided to offer 40% of local programming (rather than 20%). Source: Digital Trends (Trevor Mogg, 2015).

In conclusion, the company has many agreements with various cable, satellite and communication operators to make the service available through the television set-top boxes of these service providers (Netflix Inc., 2016). In addition, there are many differences across countries regarding the number of TV series/movies available also because Netflix’s catalogue strongly depends on licensing deals. The U.S. catalogue is the largest one, with 5,087 titles (37% of all titles Netflix has the rights to stream). Worldwide, Netflix has the rights to 13,612 titles, but they only have the rights to each of those titles in certain countries. That means that each of Netflix’s individual library is much smaller than 13,612 titles (Lovely, 2016).

Nowadays, access control is becoming a critical issue for Netflix, especially if linked to piracy. As a matter of fact, Netflix has full control over the content streamed and over data produced by consumers. However, as a video streaming service, it may be indirectly affected by piracy which, in the end, consists in distributing content without holding the rights for it. So, piracy becomes a competitor for entertainment companies in many international markets (Netflix Inc., e, 2017). Netflix had to find a way to face it. Generally, the strategy followed by the company is to offer high quality streaming for a low price, so that people prefer HD video streaming rather than low quality DVDs and streaming. In 2015, however, Netflix and Amazon started offering 4k streaming, but video pirates managed to break the video copy protection to redistribute content in its original resolution (Newman, 2015). Generally, Netflix expansion contributed in fighting piracy, especially in Latin America. According to Bloomberg, in fact, the subscription model allows to stream HD content without the risk to watch invasive ads or to get malware infection (Bershidsky, 2017). Nevertheless, the still active geographic restrictions tend to encourage piracy, so the only way to fight it is to release the same content simultaneously in all markets. Starting from June 2017, Netflix is part of an association that fights video piracy: the Alliance for Creativity and Entertainment (ACE), which includes

Amazon, HBO and Twentieth Century Fox (and other 28 companies).¹¹ The goal is to build on ongoing efforts to curtail piracy and in that regard, the group will utilise its members' expertise as well as the that of the Motion Picture Association of America (Locklear, 2017). In conclusion, I would consider the ACE and all the efforts put in place by Netflix to fight piracy, as a form of access control and, specifically, a post-access control aimed at ensuring that relevant and high quality content is served to the customers.

One of the most peculiar element that characterises Netflix is its recommendation engine. This creates a lot of value added for the company. I would consider it as the main tool for curation and customisation. The strength of this software lies within its ability to get data on actual viewing patterns in real-time. This means that Netflix does not need consumers to rate a movie to know their tastes. However, consumers may also play an active role on the platform, by up-voting or down-voting a movie or a TV show. A few months ago, this new system replaced the old one, where consumers could rate movies selecting from 1 to 5 stars. Since 2013, 800 engineers are working on the recommendation engine, improving its algorithm. Netflix's strategy consists in predicting

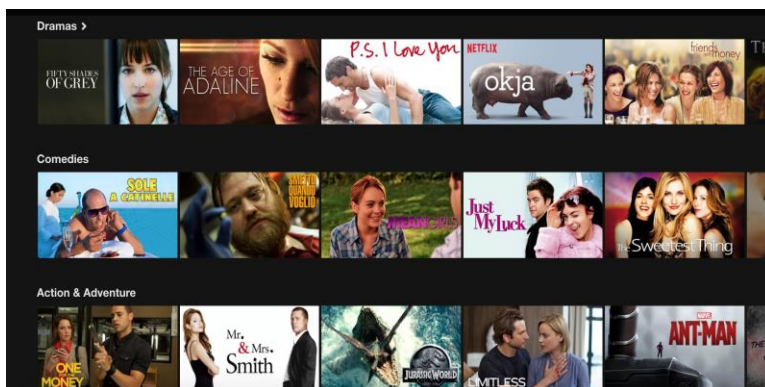


Figure 40 - This is a screenshot of my personal Netflix main page. As we can see, there are three genre rows (dramas, comedies and action and adventure) driven by the personalised video ranker.

customers' preferences by comparing the patterns of consumption. Metrics used include what users watch, when and through what device. Search is personalised too: results are influenced by consumers' watching history and by the popularity of a specific title (O' Reilly, 2016). Typically, the videos in a single row come from a single algorithm. Genre

rows are built by the *Personalised Video Ranker* (PVR) algorithm which creates the order of the entire video catalogue for each member in a personalised way (Figure 41). As a consequence, rows related to the same genre show different videos to different users. *The Top N Ranker* (TNR) algorithm is responsible for the videos shown in the top pick: this section hosts the best few recommended movies in the entire catalogue. Shorter- term temporal trends (few minutes-few days) are predictors of videos that the user will watch with high probability: these videos are shown in the *Trending Now* section. Other categories include: *Continue Watching* row and *Because You Watched* row. Together,

¹¹Amazon, AMC Networks, BBC Worldwide, Bell Canada and Bell Media, Canal+ Group, CBS Corporation, Constantin Film, Foxtel, Grupo Globo, HBO, Hulu, Lionsgate, Metro-Goldwyn-Mayer (MGM), Millennium Media, NBCUniversal, Netflix, Paramount Pictures, SF Studios, Sky, Sony Pictures Entertainment, Star India, Studio Babelsberg, STX Entertainment, Telemundo, Televisa, Twentieth Century Fox, Univision Communications Inc., Village Roadshow, The Walt Disney Company, and Warner Bros. Entertainment Inc.

these algorithms constitute the complete Netflix recommender system. Furthermore, there are other algorithms called *Evidence selection* that help Netflix in powering its software. These are responsible for the evidence items displayed for every recommendation. For example, evidence algorithms select the image that best matches consumers' preferences, among several ones (Gomez-Uribe & Hunt, 2015). The following images (Figure 42) show the rows that result from the above-mentioned algorithms:

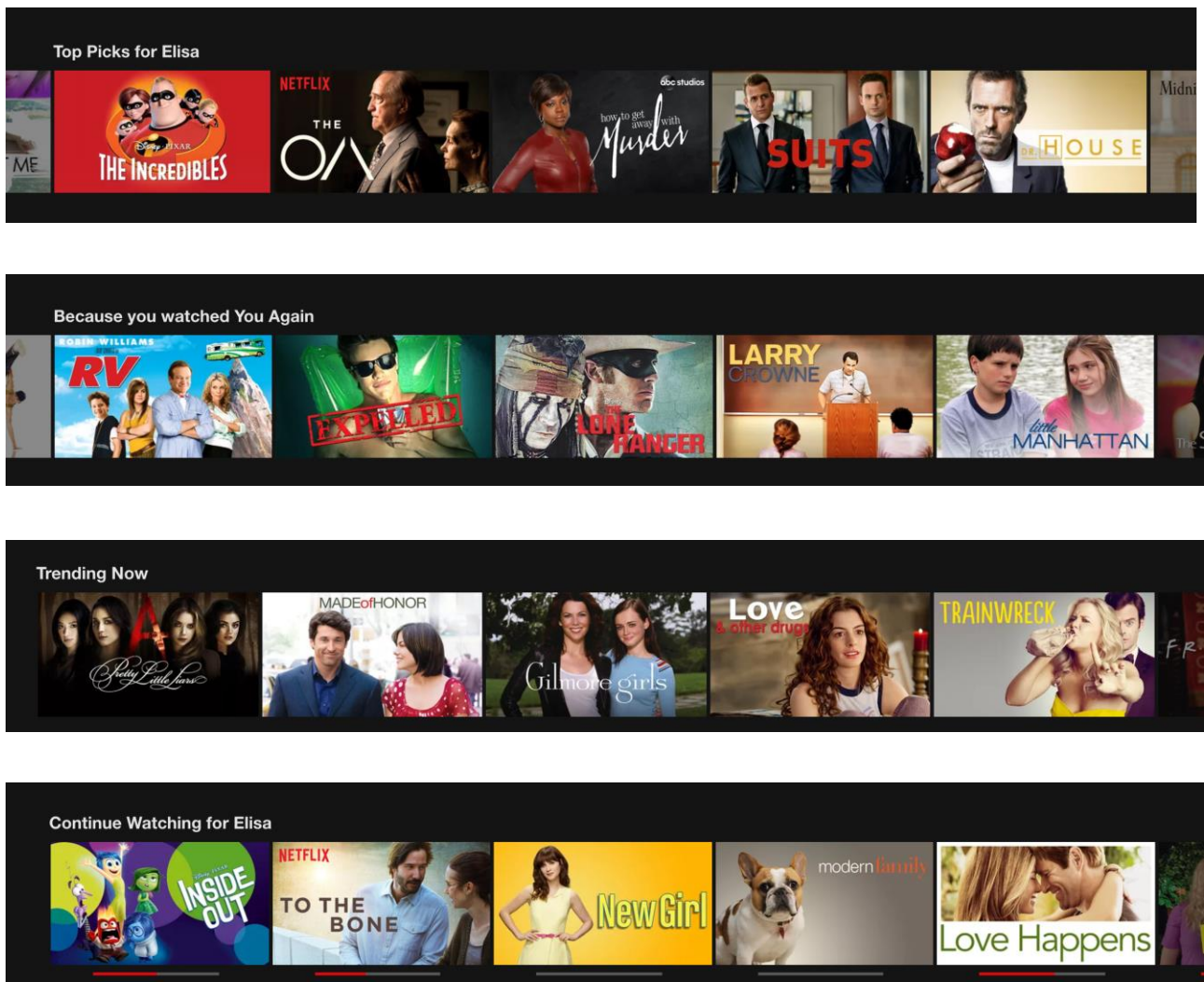


Figure 41 - From the top down: Top pick (resulted from the Top N Ranker algorithm), Because you watched, Trending now and Continue Watching rows. Source: my personal Netflix main page.

Netflix knows to have just 90 seconds to convince the user that there is something to watch for him. Therefore, the company also personalises the graphical interface in order to keep the user on the platform. For what concerns product innovation, in fact, Netflix conducts about 200 tests each year. It picks 300,000 users from all around the world to A/B test everything from images to the size of the font. Personalisation is key to the company. Revenue streams relies in fact on: the number of

members, member cancellation rates and the rate at which the latter members re-join. Offering a more customised service strengthens the retention rate and makes the customers keep on returning to the platform (Gomez-Uribe & Hunt, 2015).

So far, I described the tools for curation and customisation. For what concerns the tools for consumption, I would consider the platform itself as the means through which users consume value. Specifically, from a consumer perspective, the interface that allows the user to stream a video is the only tool of consumption for Netflix. From a producer perspective, I would consider metadata as the main tool for consumption. Metadata, meaning “data about data” allow to perform very specific queries about customers’ patterns of consumption. As a consequence, thanks to this huge quantity of information, Netflix can offer customised content, which is pretty appealing to its customers (Dance, 2015).

The last phase of my analysis regards currency and value capture. Netflix works through a pure subscription model offering three different streaming plans: basic, standard and premium. The additional prices payed for the standard and premium plans depend on the number of screens (of the same account) that can simultaneously stream a video. Money is then captured by the platform system itself. For what concerns data, as seen before, they are captured and analysed by Netflix through specific algorithms and metrics.

Figure 43 shows the Netflix’s platform business model canvas, which I built following Choudary’s framework depicted in Chapter 3:

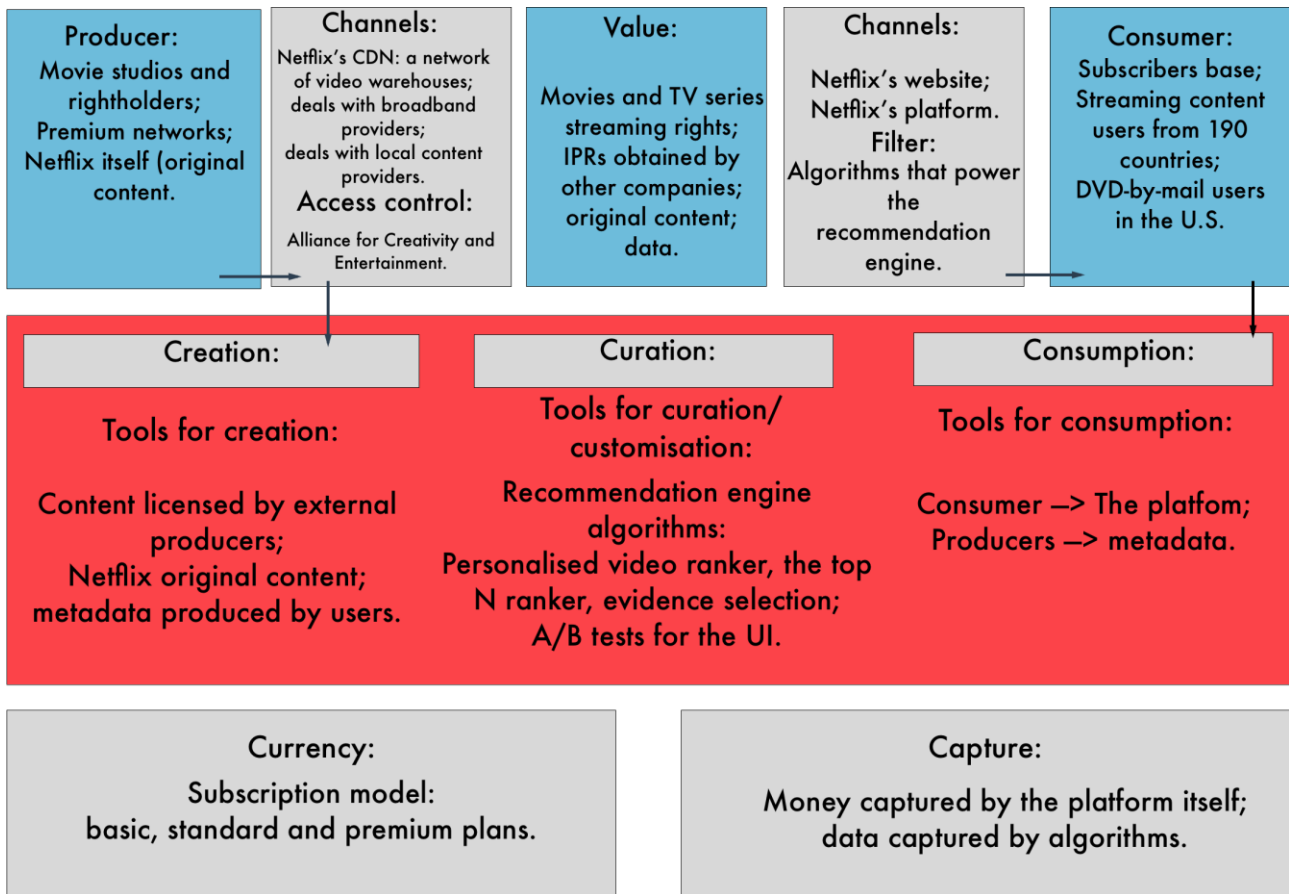


Figure 42 - Netflix's platform business model canvas. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 145 (Choudary, 2015, d).

4.6 Traditional business model versus platform business model

In the previous paragraphs, both Blockbuster and Netflix business models have been analysed. Despite these two companies were born to satisfy the same customers' need of home entertainment, they present very different features. On one hand, Blockbuster represents the traditional pipe, where value is produced upstream and consumed downstream. In fact, it has all the characteristics of a pipe business model, as described in Chapter 3. On the other hand, Netflix represents a born-platform where consumers play an active role in co-creating value with producers.

Blockbuster's and Netflix's case studies clearly show that pipes and platforms have two very different business models. This distinction has a critical importance for entrepreneurs, because building a platform following a pipe business model will lead to failure. Platforms, in fact, are the result of the Internet advent and they require a brand-new business model. The power of these new entities to profitably disrupt industries continues to impress. These ask for a re-definition of the value-generation and value-capture mechanisms. Their success requires traditional companies to revisit their core

business elements. To better understand this, let's now highlight the main differences between Blockbuster's and Netflix's business models.

First, for Blockbuster, producers and consumers constituted two separate segments of the market with distinct functions. Netflix transforms them into roles: consumers shift to the role of producers and vice-versa. This means that consumers participate in co-creating value, producing metadata that are employed by the platform to power the recommendation engine. Furthermore, Netflix benefits from strong network effects. Specifically, from Netflix investor relations site it is possible to read:

“Our primary competitive advantage is our large and growing subscriber base, which gives us tremendous operating efficiencies and which we believe, drives the following virtuous cycles:

- More subscribers means more money to license content, which drives more subscriber growth.
- More subscribers means more word of mouth from subscribers to those who are not yet subscribers, which drives more subscribers growth.
- More subscribers means we could increase R&D spend to improve our user experience [which] drives more subscriber growth.” (Netflix Inc., 2011, p.2).

This virtuous life-cycle only works when both producers and consumers participate to the interaction. Therefore, successful platforms usually invest in improving the users' capabilities, which leads to a more sustainable growth.

Since platforms are the result of the Internet era, platform business models present a more de-materialised structure. This means that many physical elements that contributed in creating value for pipes, are now transformed. For instance, Blockbuster's inventory of VHS, DVDs, Blue-Ray and games represented the major source of value for the company. Key resources for Netflix, on the contrary, are especially movies and TV series streaming rights, among with the intellectual property rights of other companies' content. From 2011 on, in fact, Netflix maintains its DVD-by-mail service only in the U.S., while it delivers streaming services worldwide. Netflix's strategy, indeed, focuses on acquiring an increasing number of streaming rights from movie studios.

For what concerns distribution channels, while for Blockbuster they were mainly physical (stores, kiosks), for Netflix they are completely de-materialised. The company, in fact, has its own Content Development Network which it exploits due to multiple deals with local broadband providers. Indeed, channels used by customers to stream videos are exclusively constituted by Netflix's website and Netflix's platform themselves.

Less physical goods mean lower costs. Blockbuster faced high fixed costs for payroll and store maintenance, among with variable costs depending on the inventory acquired. Netflix is able to save

on both of them. Rather, since the payment terms are not tied to member usage or to the size of the membership base, the company faces high fixed costs to enter multi-year commitments with studios and content providers. These agreements strongly depend on factors such as titles licensed and/or theatrical exhibition receipts. For these reasons, if membership acquisition and retention do not meet the expectations, margins may be adversely impacted (Netflix Inc., 2016). Also, while Blockbuster had fixed costs related to the physical maintenance of stores and employees, Netflix faces fixed costs related to the acquisition of intellectual property rights over content streamed. In the end, both Blockbuster and Netflix face high fixed costs. However, they have a very different nature, with Netflix's fixed costs attached to more de-materialised elements.

On the other hand, the revenue model is similar between Blockbuster and Netflix, as the two companies both adopted a subscription model. Netflix's strength, however, lied within its ability to offer unlimited and strongly personalised content to its customers who could watch a movie or a TV series from their laptop with no need to go out for renting a DVD.

In the end, the most powerful element of Netflix was its own value proposition. The company, in fact, has been able to catch all the opportunities coming from the digital revolution that characterised the late 90s and the early 2000s. Key success lied within managers' ability to adapt Netflix's business model to the innovations coming from the international scenario (DVDs first, streaming service then). On the contrary, Blockbuster, was stuck in its own original structure, thus creating a closed and not agile company. Not embracing a business model innovation led the movie-rental company to failure. A platform business model, in fact, involves new features and elements not considered in a traditional pipe. These elements are not physical and they are especially tools for content control and filters. These require the design of a brand-new model to properly generate and capture value. For example, Netflix created very powerful filters for customisation. What makes the company a powerful business, in fact, is especially its ability to customise in real-time the content offered to its users. As stated before, the company conducted A/B tests to understand cultural differences and preferences among countries, with the aim to offer a very appealing service worldwide. Furthermore, continually improved algorithms allow Netflix to recommend different content to each single customer. The recommendation engine, indeed, strongly strengthens the retention rate of the company. Among with the tools of curation and customisation, Netflix innovated also the tools for consumption. The company, in fact, has been able to capture the value of the technological innovation which started in the late 90s since the very beginning, and it adapted its business to the new Internet-era accordingly.

When Netflix launched its DVD-by-mail service, it also introduced a website with a recommendation engine that allowed customers to create queues of movies. Therefore, Hastings founded the company with the clear intent to evolve to an Internet-based service in the future. Blockbuster, on the contrary, created its own website only in 2004, when Netflix already had 1 million subscribers. The latter has not been able to capture the huge opportunities coming from the Internet era, hence failing the overall business.

Netflix has been able to switch from a pipe model to a platform one employing a hybrid model (Zhu & Furr, 2016). Starting as a DVD-by-mail service, the company built a large user base in the U.S.A. through a product-based business model. At that time, its strength mainly lied within the differentiated library of titles. However, the company also launched its online service from the very beginning, hence adopting a platform mind-set. The dual nature of its business model has been its key success factor. In 2007, in fact, Netflix introduced its streaming service, quickly gaining a competitive advantage over Blockbuster. Hence, Netflix successfully shifted from the objective to meet specific customers' needs, to the objective of conquering the mass market, thus strengthening the network effects mechanism. On the contrary, Blockbuster did not open to innovation. It adopted a traditional business model which remained the same over the years. Its attempt to introduce a website was not accompanied by a business model innovation. Its incapability to capture the value coming from the Internet-era has been its biggest mistake.

In conclusion, due to the current trend towards digitisation, every company in the future will become a tech company. This means that the same service will be delivered through a completely different way, which can be implemented only by shifting to a platform business model. All businesses will need to shift to this new model at some point, otherwise they will be disrupted. Startups that do not realise the difference between pipe and platform and that do not design the business model accordingly, will collapse. It usually happens that startups with the best technology do fail because they build the wrong business model. In the end, understanding the difference between pipe and platform is key to the success of a business. Platform business model, although sharing common elements with pipes, present brand new features that power the overall efficiency of the business. Blockbuster's and Netflix's history teaches that every new business should understand and adopt these tools, otherwise it won't be able to face the fierce competition coming from the current international scenario. Businesses that succeed in exploiting these new features, on the other hand, are demonstrated to have high probabilities of success.

Conclusion

Through the research conducted for my thesis, I found that platforms present multiple advantages. First, due to the current trend towards digitisation, these new entities lead to a general dematerialisation of processes and resources. In this context, physical assets completely lose relevance. Rather, new sources of value creation arise. These are mainly digital assets that, if on one hand allow the firm to save on both distribution and maintenance costs, on the other hand pose new challenges. Digital assets, in fact, are mainly data produced by users who interact on the platform, thus creating value. Due to their nature, data require new forms of regulation mainly because of privacy issues. However, they also constitute the most important source of value for the platform. These allow the company to access a huge quantity of information and to provide a fully customised service. For instance, the possibility for Netflix to access data about its customers, led the company to build a state-of-the-art customer-centric business. Its strength especially lied in the ability to provide a personalised service for each of its customers all around the globe.

Moreover, digital assets allowed Netflix to save on the fixed costs coming from store maintenance and payroll and on the variable costs coming from the inventory acquisition. This increased the overall efficiency of the company. Furthermore, platforms benefit from the phenomenon of network effects. While for pipes value creation follows a linear path, for platforms this comes from multiple actors who interact with each other. On one hand, this gives a strong competitive advantage to digital companies. On the other hand, this requires the design of new value capture mechanisms.

For all these reasons, I presented the Choudary's business model canvas as an alternative to traditional business models, such as the Osterwalder's and Pigneur's one. This framework is able to capture all the value coming from the interactions that use to power platforms. Considering new elements and processes, this business model allows companies to succeed in the current scenario. Startups and companies that own a state-of-the-art technology must contemporarily build a proper business model in order to capture the value produced. Otherwise, even well-established companies such as Blockbuster will not be able to stay ahead of their competitors. This happens because they fail at managing disruptive innovation, a phenomenon defined by Clayton Christensen as the "Innovator's dilemma" (1997). Basically, there are two types of innovation: sustaining and disruptive. A company faces sustaining innovation when it improves products based on feedbacks from past and current customers. This consists in reducing defects and making the product more powerful. In contrast, disruptive innovation always leads to lower performance and makes the product less effective. Disruptive innovation comes from needs that exist in niche markets, neglected by current market

offerings and it usually makes the company appearing as if it is doing everything wrong. The main difference between sustaining and disruptive innovation is that, while the former satisfies customers' current needs, the latter evolves in business models that are able to meet future customers' needs. These two types of innovation are the core of the innovator's dilemma. While sustaining innovation has positive effects in the short-term, it will bring the company to failure in the future. On the contrary, although dedicating resources to niche and unproven opportunities causes temporary losses for the company, it will be a winning strategy in the future. Disruptive innovation does not care about traditional performance key indicators. Rather, it looks at the future of the company. This type of innovation usually comes from outsiders. Well-established companies, in fact, prefer maintaining their current technology, instead of facing high switching costs and incurring losses. On the other hand, startups own the advantage of focusing on a very small, target market which can be the start of something very big. For example, Google Maps replaced very expensive systems of navigation, Skype outperformed big phone companies and, of course, Netflix drove Blockbuster and many other movie rental companies out of competition. Therefore, it is fundamental for companies to always look at niche markets and identify potential disruptive innovations to embrace them (Video Book Club, 2015). Once that a proper business model has been designed, platforms become extremely efficient both in terms of value creation and cost savings.

In conclusion, the purpose of this thesis was to provide an overview of the platform ecosystem and to show how each business that wants to stay competitive in the current scenario, must necessarily open to innovation. Nevertheless, as the Blockbuster and Netflix case study demonstrate, this does not automatically lead the company to succeed. In fact, every company in the future will be a tech company and it will present brand new elements that do not exist in a pipe business. Therefore, in order to properly capture the value of innovation, the company must shift to a platform business model. Firms that do not realise it are bound to fail.

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PLATFORM ECOSYSTEM: AN ANALYSIS OF THE BUSINESS MODEL EVOLUTION THROUGH BLOKKBUSTER AND NETFLIX CASE STUDIES

Abstract

In the last decades, a deep technological revolution radically changed the way of doing business. Across many industries and sectors, digital technology has been transforming business strategy, processes, products and services as well as interfirm relationships. In this context, platforms made inroad in the economic scenario, becoming the main source of value creation. To maintain competitive advantage, these entities demand the design of new business models, which are often difficult to implement. In fact, widely adopted frameworks, such as Osterwalder's and Pigneur's business model canvas, while adequate to represent traditional business models, are not the best tools to support business model innovation.

The purpose of this thesis is to demonstrate that each business that wants to stay competitive must embrace a platform business model. Platforms present, in fact, huge economic opportunities in terms of performance, efficiency and overall growth. However, in order to properly capture value, these require the design of new tools.

Chapter 1 defines platforms and describes their main constitutive elements. Unfortunately, there is not a univocal definition for the term "platform". In general, a platform helps connecting participants and resources on an as-needed-basis very effectively. Its main purpose is to connect producers and consumers to enable value-creating exchange activities. For my thesis, I decided to follow the framework of Sangeet Paul Choudary, co-chair of the MIT Platform Strategy Summit at the MIT Media Labs and one of the top 30 emerging thinkers globally. He defines a platform as <<a plug-and-play business model that allows multiple participants (producers and consumers) to connect to it, interact with each other and create and exchange value>>.

Hence, a platform's business model must consider not only internal but also external sources of value creation. From a macroeconomic point of view, this leads to the shift from a supply-side economy, to a demand-side economy of scale. In the former, the company focuses on the internal dimension with the aim to optimise the value chain and to accumulate resources, hence creating barriers to entry. The latter, on the other hand, focuses on the external dimension and aims at maximising interactions between consumers and producers, thus powering the network effects. Here, the value is created from both sides of the market.

Specifically, new business models follow three basic rules:

1. Network effects: Consumers and producers are two different actors playing on the same market field and they are mutually dependent for value creation, meaning that consumers benefit from producers and vice-versa;
2. Distribution power law: it relates to the fact that platform business models allow for continuous profit generation due to the power of network effects, whereas in the past profit was created only at the end of the value chain through sales of products or services;
3. Asymmetric growth and competition: two companies catch the same market opportunities but with completely different resources and approaches.

When consumers connect to the platform, their demand matches with the producers' supply and a virtuous cycle of value creation is triggered. Therefore, interactions are the key element of a platform because they allow participants to connect, create and exchange value. Each platform has a Core Interaction, a series of actions that participants constantly perform to pull value out of the platform. Core interactions involve three elements: participants, the value unit and the filter. Participants are both producers, thus creating value, and consumers, thus consuming value. In building the core interaction, both roles must be defined, otherwise the platform does not create value. In addition, despite everyone specialises either in the role of consumer or in the role of producer, participants may simultaneously perform both roles. Among the actions performed in the Core Interaction it is possible to observe the following: creation, consumption, curation and customisation. Creation means that there is at least one user who produces value; similarly, consumption refers to the fact that there is at least one consumer of the above-mentioned value. Since creation increases the amount of supply, a good system of curation is required to ensure the right quantity and quality of value. Finally, customisation refers to the platform's ability to create a relevant experience for the consumer. Another important element for a platform is the core value unit. This is defined by Choudary (2015, d, p.95) as <<the minimum standalone unit of value that is created on top of the platform. It represents supply or inventory created on top of the platform>>. Finally, the filter is a software-based tool to ensure the exchange of appropriate value units between participants. It is a quality check instrument to guarantee that participants receive only relevant value units.

To ensure core value interactions, platforms should play three different activities. They should *pull* producers and consumers towards the platform; *facilitate* their interactions, thus favouring value exchange; *match* supply and demand effectively, by exploiting available information.

One of the most important features of a platform is the network effect. This means that the higher is the volume of platform participants, the greater is the value of the platform itself. This is because, the larger the network, the higher the availability of data used to match supply and demand. Furthermore, as the network grows, more users are attracted by the virtuous mechanism, thus connecting to the

platform and contributing to market expansion. There are both positive and negative network effects. Moreover, there is a subsystem of network effects called two-sided market effects. These arise in two-sided markets where two different actors are needed for the platform to create value. As a matter of fact, the platform has no stand-alone value unless participants plug into it and start interacting with each other, thus creating value. In sum, network effects are the focal point of modern platform technologies and their value must be now considered in the financial evaluation of a company. Key strengths for a platform are the number of interactions and the relative network effects which create competitive advantage. This is the reason why it is important to create a design which repeatedly attracts both producers and consumers.

For what concerns the platform ecosystem, all platforms share the same basic structure and they present four main players who easily switch from one role to another: owners (who control intellectual property rights and governance), providers (the platform's interface with users), producers (who create the offering) and consumers (who use the offering). A good platform always induces participants to create value by sharing resources and ideas. Nevertheless, free access may destroy value, the reason why it must always be balanced with an efficient mechanism for quality control. Speaking of which, there are mainly three curation mechanisms: algorithmic curation, social curation (based on consumers' ratings and votes), editorial curation (basically a manual curation which usually takes place in the early stages of the platform creation).

Platforms also have an impact on the organisation of the firm. While in the past, pipeline firms outsourced part of their internal activities, now companies aim at managing an entire external network which complements or substitutes internal functions. This is a revolution for the organisation of the firm, as boundaries disappear and value is created both inside but especially outside, with no direct control of the firm itself. The platform owner, in fact, does not have control on the resources. Its activity is limited to the orchestration of the value exchanges between producers and consumers. As a consequence, the value of a platform increases proportionally with the number of users. However, it must reach the so called critical mass to start generating value. This is why, one of the most common problem faced by platforms is the chicken-egg problem. This refers to the fact that in two-sided markets both producers and consumers need to be on the platform to seed it. They must be brought simultaneously on the market, as no consumers will connect to the platform without producers and vice versa. As a matter of fact, platforms do not have any standalone value; rather, they acquire value by attracting more and more users. This is particularly challenging in the initial stage of the building process, when the platform is a ghost town. The strategy used by platforms' owners is usually to focus on one side at a time, starting from producers or from consumers. However, there are also different strategies to simultaneously focus on both consumers and producers.

Platforms can be classified in four main categories. According to Hagel (2015), there are: aggregation platforms, social platforms and mobilisation platforms. Aggregation platforms aggregate resources and match the user with the right resource. On the contrary, social platforms' main objective is to aggregate people. These aim at creating and strengthening social relationships among users. Finally, mobilisation platforms, by definition, push people to act together to reach a shared goal. In addition, each type of platform may eventually evolve in a learning platform. Learning platforms aim to facilitate learning and increase knowledge of the participants.

Chapter 2 presents multiple governance models and proposes an intermediate solution for platform management. The concept of platform governance is strictly linked to the one of platform openness. A platform is considered closed when a) the access to external participants is prohibited and b) potential participants are discouraged to take part to the transactions because of burdensome rules or excessive fees. Considering that in the platform ecosystem the focus is on the external environment, if the platform is excessively closed, then the mutually rewarding exchange of value becomes impossible. On the other hand, an open platform easily leads to fragmentation, making intellectual property rights and monetisation difficult to control. There are mainly four types of platform management structures that represent different degrees of openness. First, in the *proprietary model* one single provider controls its technology, thus ensuring a great overall control of the interactions. In the *licensing model*, there is usually a single company developing a platform's technology and licensing it to other firms as providers. On the contrary, in a *joint venture model* multiple firms cooperate in developing the platform but a single entity serves as its sole provider. Finally, in the *shared model* multiple firms collaborate in the development of the platform's technology and then compete with each other to offer different but compatible versions of the platform. Usually platforms are two-sided markets, so producers become consumers and vice-versa. On one hand, this enables a quicker exchange of high-quality value; on the other hand, absolute openness must be mitigated in some way to ensure high quality content standards. This happens through a system of curation which takes the form of screening and feedback at critical points of access to the platform. The challenge is always to find the right balance to allow content generation and value exchange, while ensuring that external developers would not be too aggressive in controlling the sources of value on the platform. Geoffrey G. Parker and Marshall W. Van Alstyne (2016, a) define governance as: <<the set of rules concerning who gets to participate in an ecosystem, how to divide the value, and how to resolve conflicts>>. The platform manager needs to set rules to ensure a fair wealth distribution among all the participants who add value. Platforms, in fact, may create situations in which good interactions (fair and mutually satisfactory) do not occur or bad interactions occur. These two scenarios are gathered together under the name of "market failures" which also include: information asymmetry,

externalities, monopoly power and risk. The purpose of governance is then to properly manage and solve those market failures. For this reason, governance has been widely studied by multiple economists, such as Alvin Roth or Lawrence Lessing who elaborated different frameworks. Generally, governance should be gradually distributed among the members of the community, with simple issues controlled by small groups of users and complex issues managed by more organised groups (Ostrom, 1990) to create a balanced system. Whenever governance rules are applied to platforms, platforms' partners and participants there is a situation of self-governance. This stimulates a more efficient environment where people are incentivised to produce and exchange high-quality value. Self-governance is based on two basic principles: internal transparency and participation. Internal transparency involves creating a uniform environment where all the business divisions play by the same rules and share a common vision. Participation requires ensuring a voice to external stakeholders in internal decisions equal to that of internal stakeholders. In the end, the decision to create a fair and stable governance system within a platform will give positive results in the long-run, whereas a more closed and arbitrary system based exclusively on the decisions of the platform owner, will generate inefficiencies. Nevertheless, if a platform allows for a continuous flow of innovation, together with new profit to manage, there will also be new conflicts. It is therefore time for policymakers to face these new challenges by partially modifying the old assumptions. The impact of platforms, in fact, is disruptive on traditional industries, especially because these create externalities. Also, platforms generate new regulatory issues, such as: platform access, fair pricing, data privacy and security, tax policy, labour regulation, potential manipulation of consumers and markets. Therefore, it is necessary to encourage the design of specific political, social and economic systems. In conclusion, an intermediate solution is required because if on one hand too much regulation causes corruption and undemocratic regimes, a loosely regulated system has high social costs.

For what concerns data management, the vast amount of data platforms create, necessary requires a reorganisation of the traditional approach to regulation. The entrepreneur Nick Grossman calls for a transition from Regulation 1.0, which has prescriptive rules and certification processes, to a system called Regulation 2.0, based on open innovation and data-driven transparency and accountability. Both Regulation 1.0 and 2.0 aim at ensuring fairness and consumers' safety, even if with very different means. According to Grossman, restricted access makes sense in a world of scarce information, while in a world characterised by abundance of data and information a regulation based on data-driven transparency is more effective and makes more sense. The authors of "Platform revolution", in the end, present a balanced solution with a part of the current permission-based regulation and a part of data-driven accountability.

All these elements, strongly impact the business model which asks for innovation and undergoes a true revolution. Chapter 3 illustrates step by step the transition from a traditional “pipe” business model, to a “platform” one and presents Choudary’s platform business model canvas. The Internet era had a profound impact on the mechanics used by businesses to create and deliver value. As business models shift from pipes to platforms, a new business design is required. In the pipeline business model, the value chain of the activities is linear: suppliers provide inputs that are transformed into a more valuable finished output. Because of its simplicity, this business model is also referred to as “linear value chain”. The platform business model, on the contrary, revolutionises this framework and creates a plug-and-play infrastructure where producers and consumers interact with each other, constantly creating value. A plug-and-play infrastructure, in fact, requires a multi-directional flow of value between participants, these being both consumers and external producers. According to Choudary, in the pipeline model the focus is on internal resources, both tangible and intangible ones, and on the ability of the company to extract value from them. Once that the value is created, it is delivered straight to the customer base. Inversely, in the platform model the focus is on the external dimension, constituted by the ecosystem of consumers and producers who interact and co-create value, being connected to the business through the Internet. Furthermore, while for pipes, competitive advantage is determined by resource ownership and control, for platforms it is determined by the quantity of data managed and by the ability to orchestrate digital and physical assets. This is strictly linked to the shift in value creation from processes to interactions. Basically, value is no longer created through processes that organise labour and resources, but especially through interactions that orchestrate users and resources in the ecosystem. This is the reason why new platforms like Uber or Airbnb focus on improving the algorithm that matches supply and demand, thus increasing the interaction frequency on the platform ecosystem. Moreover, the platform business model becomes more efficient compared to the pipeline one. The greater efficiency depends on several factors. First, platforms provide real-time access to information relative to consumers’ preferences. This eliminates redundant gatekeepers that slow the production process in the pipeline model. Value creation and supply accelerate as well so that platforms present lower marginal costs of production and distribution. Furthermore, being producers also consumers and vice-versa, value is created repeatedly, thus augmenting the power of network effects. Platforms also allow consumers to review products and services, encouraging high quality performance and transaction costs reduction. One of the main challenges faced by platforms, however, is to ensure compliance. In a pipe model, rules and hierarchies are established to contractually bound participants. In a platform ecosystem, ensuring compliance means creating cues that encourage users to repeat the desired behaviour. Over time, bad

behaviours are automatically discouraged and a new behaviour sets in. Finally, platforms benefit from virality, a phenomenon where the user of a system brings in new participants while interacting with the system itself. In the end, the competitiveness of a platform is determined by its ability to facilitate and sustainably ensure interactions. The business design must always maximise the effectiveness and the efficiency of this mechanism, the reason why platforms are also called interaction-first business models, in contrast with the user-first business model which represents traditional pipe businesses. In the interaction-first business model, the interaction should be as efficient as possible in order to increase user engagement and satisfaction. In fact, the platform itself has no standalone value. Value is created on top of it through interactions. The units of value become the inventory or supply of the platform and they serve as the power engine of the overall mechanism. Since platforms carry out multiple functions, they differ from one another in the core interaction. However, across every type of platform, there are three distinct layers that constantly emerge and that form the so-called platform stack: network-marketplace-community layer, infrastructure layer, and data layer. Platforms function across these three layers, but the degree to which each layer is dominant may vary. It is therefore possible to identify three dominant structures. First, the marketplace - community platform, where the network is the key source of value and the marketplace - community layer is prevailing (i.e. Airbnb, Uber). Differently, a dominant infrastructure layer leads to a development platform that provides the structure upon which apps can be created (Android's development platform). Finally, in the third configuration, data layer plays a dominant role (wearables).

The platform business model presents multiple elements. For what concerns the core value unit, it has a different function across the three models of platforms. In a network - marketplace - community - dominated platform, the core value unit may be either a good, or a standardised service, or a non-standardised service. Infrastructure-dominated platforms, on the other hand, present a very clear core value unit (videos on YouTube), which is tangible and easy to identify. Finally, on data dominated platforms, the data itself are the source of value (Netflix).

For what concerns the core interaction, it is formed by four actions: creation, consumption, customisation and curation. These must be determined in relation to the core value unit. Finally, different types of filters are needed to ensure that consumers are served only content that is most relevant to them. This basically involves two key factors: a) ensuring the overlap between what producers offer and what consumers demand, b) data about core value units.

The platform canvas represents here the central planning framework of an interaction-first platform business. Consequently, the platform must be built as an open system that enables producers and consumers to plug into the platform and co-create value. If a platform enables multiple interactions, the business model and the architecture must be planned out following one interaction at a time,

starting from the core interaction. Although in the platform ecosystem the same person may contemporarily act as a producer and as a consumer, in a single interaction each person may perform just one role at time.

Four steps are needed to design a platform business model canvas.

Phase 1: the design of a platform should start by defining the role of producer and the role of consumer. Second, it is important to show their motivations for interacting with each other. For what concerns value, it refers to the supply or inventory of the platform. It could be either a physical or a digital good, as well as a service or a service provider.

Phase 2: building a platform canvas also requires enabling the plug-and-play business model. This involves designing two elements. First, channels that enable participants to plug into the platform in an open manner. Channels involve the following: websites and apps, distributed access mechanisms like widgets, browser plug-ins, share buttons, but also the provisioning of APIs and Software Development Kits (SDKs). These must be always combined with access control and filters to balance open access with quality control and relevance. Access control may be designed to apply to both platform access and post-access rights and it can be editorial, algorithmic or social.

Phase 3: building the infrastructure that enables the interaction. In order to do so, the platform must provide tools and services that both producers and consumers can leverage. There are three different types of tools and services:

1. Tools and services of creation: they include specialised creation tools for producers like SDKs and content creation interfaces.
2. Tools and services of curation and customisation: this kind of tools may be both in-house or partner-driven mechanisms, as well as internal or external algorithms or social feedbacks.
3. Tools and services of consumption: they are required to serve value to consumers. This may involve the creation of consumption interfaces, newsfeed, external widgets, as well as static interfaces.

The design of tools and services must always be aligned with the three roles of a platform to pull, facilitate and match the interaction.

Phase 4: it is focused on the value captured by the platform. It involves two factors. First, the currency used by consumers to pay producers. It may be money, but also social currency, in terms of attention, reputation, influence or other forms of non-monetary currency. Second, the platform must be able to capture value in some way. It is very important to understand how the value capture mechanisms work as the platform derives value from every interaction, even if it may not be money.

In conclusion, the four phases presented above lead to the creation of the platform canvas. In Chapter 4 I use this framework to analyse Netflix's business model and then I compare it to the more traditional Blockbuster's one. Blockbuster and Netflix were born to satisfy the same customers' need of home entertainment. However, they present very different features. On one hand, Blockbuster represents the traditional pipe, where value is produced upstream and consumed downstream. In fact, it has all the characteristics of a pipe business model, as described by Osterwalder's and Pigneur's model. On the other hand, Netflix represents a born-platform where consumers play an active role in co-creating value with producers.

To analyse Blockbuster's business model, the framework presented by Osterwalder and Pigneur in their work "Business model generation" (2010) is adopted. The company, in fact, had a very traditional brick-and-mortar business model: it owned physical stores where customers had a face-to-face relationship with the employees. According to Osterwalder: "A business model describes the rationale of how an organization creates, delivers and captures value" (Osterwalder & Pigneur, 2010, p. 20). Specifically, there are nine building blocks to analyse and to understand the logic behind the value creation of a company: customer segments, value proposition, channels, customer relationship, revenue streams, key resources, key activities, key partnerships, cost structure. By analysing the financial statements, investor relations and annual reports published by Blockbuster from 2000 on and adopting the Osterwalder's and Pigneur's framework, I built the company's business model.

<p>Key Partners</p> <ul style="list-style-type: none"> • Studios and game publishers • Media and e-commerce companies • The Coca-Cola Company (2002) 	<p>Key Activities</p> <ul style="list-style-type: none"> • VHS, DVD, Blue Ray, games rental • DVD-by-mail service (from 2004 on) • Obtain new releases 	<p>Unique Value Proposition</p> <p>“Provide our customers with the most convenient access to media entertainment (movies, games)”</p>	<p>Customer Relationship</p> <ul style="list-style-type: none"> • Personal assistance: very familiar relationships with customers • Self- service: personalised, independent experience through the online catalogue 	<p>Customer Segment</p> <ul style="list-style-type: none"> • Everyday movie consumers • Game aficionados • All age groups, low-middle class environment
<p>Cost Structure</p> <ul style="list-style-type: none"> • Value - driven business model • Fixed costs: occupancy and payroll, maintainance costs of the stores • Variable costs: half of the inventory acquired through a specific purchase model and half purchased under a revenue sharing model • International markets: inventory acquired on a title-by-title basis directly from the studios or through sub-wholesalers; merchandise acquired on a product-by-product basis 	<p>Key Resources</p> <ul style="list-style-type: none"> • Physical: broad catalogue of titles (about 2500 titles per store), network of stores • Intellectual: digital rights management, franchise rights, licensing rights from the studios and from device manufactures 		<p>Channels</p> <ul style="list-style-type: none"> • Awareness: commercials, website, social networking websites, telephone, mail, in-store promotions and apps • Purchase: online, in-store, by mail, kiosks • Delivery: specific “release windows” 	
	<p>Revenue Streams</p> <ul style="list-style-type: none"> • Late fees (until 2005) • Online and in-store monthly subscription fees • Sale of DVDs or games to reduce inventory 			

Before analysing Netflix's business model, it is important to clarify some concepts.

First, starting from 1997, Netflix changed its core business three times. Initially, it offered a DVD-by-mail service through a very basic website with a rudimentary recommendation engine. In 2007, the company decided to offer video streaming service in addition to the DVD-by-mail service in the U.S. Finally, in 2011 it expanded its business with a DVD-by-mail service plus a streaming service in the U.S. and a streaming service in the rest of the globe. Therefore, Netflix experienced three different business models: a more traditional one between 1997 and 2007, an intermediate solution between 2007 and 2011 and finally a platform business model starting from 2011 on. Using the Choudary's canvas, I will analyse here the current Netflix business model, in order to highlight the differences with the Blockbuster's traditional one. I chose Blockbuster to present a traditional business model (instead of the first Netflix's business model) because, if we consider Choudary's definition of a platform, Netflix can be considered a platform from the very beginning. Both producers and consumers, in fact, co-create value with their own activity: while producers offer content (in terms of DVDs or streaming movies and TV series), consumers with their activity produce metadata that power the recommendation engine. Data are the most important source of value for Netflix, because they allow the company to deeply understand consumers' patterns of consumption and to offer a personalised and engaging experience. These are almost strategic data used to optimise the entire ecosystem. I had an exchange of emails with Mr Choudary and he agrees with me in considering Netflix as a data platform, meaning a platform with a significantly dominant data layer. In my opinion, in fact, data themselves represent the core value unit. To deliver relevant value to its customers, indeed, the company built from the very beginning a recommendation system, which has been continually updated during the last decade. Its system can capture huge quantities of empirical data, to apply relevant analytics and predict customers' desires. The website is personalised for each single customer creating a "one-of-a-kind" experience that provides recommendations, ratings, offered customers' reviews and creates customer-specific genre names. The more customers are active on the website, the more they can benefit from a tailored experience. Netflix, on the other hand, has access to a lot of metadata: information about customers' preferences and purchasing trends enables it to improve its service and to leverage suppliers and advertisers. 800 engineers constantly work for improving the recommendation engine and this software is able now to get data on actual viewing patterns in real-time. This means that Netflix does not need consumers to rate a movie to know their tastes. The company is able to customise the service just exploiting data produced by users while streaming content. In addition, Netflix customise the service not only on a user-base but also on a country-base. This means that the content streamed varies country by country in order to reflect cultural tastes and preferences. Hence, Netflix currently has local content in 23 languages and it is

filming in 19 countries. This virtuous cycle results in a strong subscribers' loyalty. For what concerns the platform technology, I would insert Netflix in the third pattern described by Choudary in his work: a platform that captures either the exchange of information and currency, and the exchange of goods and services. Everything concerning the core interaction, in fact, happens through the platform. Regarding the core interaction, I want to break down the four main activities that constitute a platform's core interaction, to demonstrate how Netflix is extremely efficient in creating value. First, creation is executed both by Netflix itself (original content) and by external producers (licensed content). As a matter of fact, when Netflix started producing its own original content in 2013, the subscription base grew all around the globe. People were more and more incentivised to go back to the platform and stream more content: creation nurtures consumption. For what concerns curation, I think that for Netflix it is strictly linked to customisation. The platform, in fact, presents filters in the form of recommended movies and TV series.

In conclusion, Netflix's core interaction is composed by four actions that are strongly coordinated among each other: this ensures value creation and consumption on an ongoing basis.

The following figure shows the Netflix's platform business model canvas built following the four phases presented by Choudary in his book.

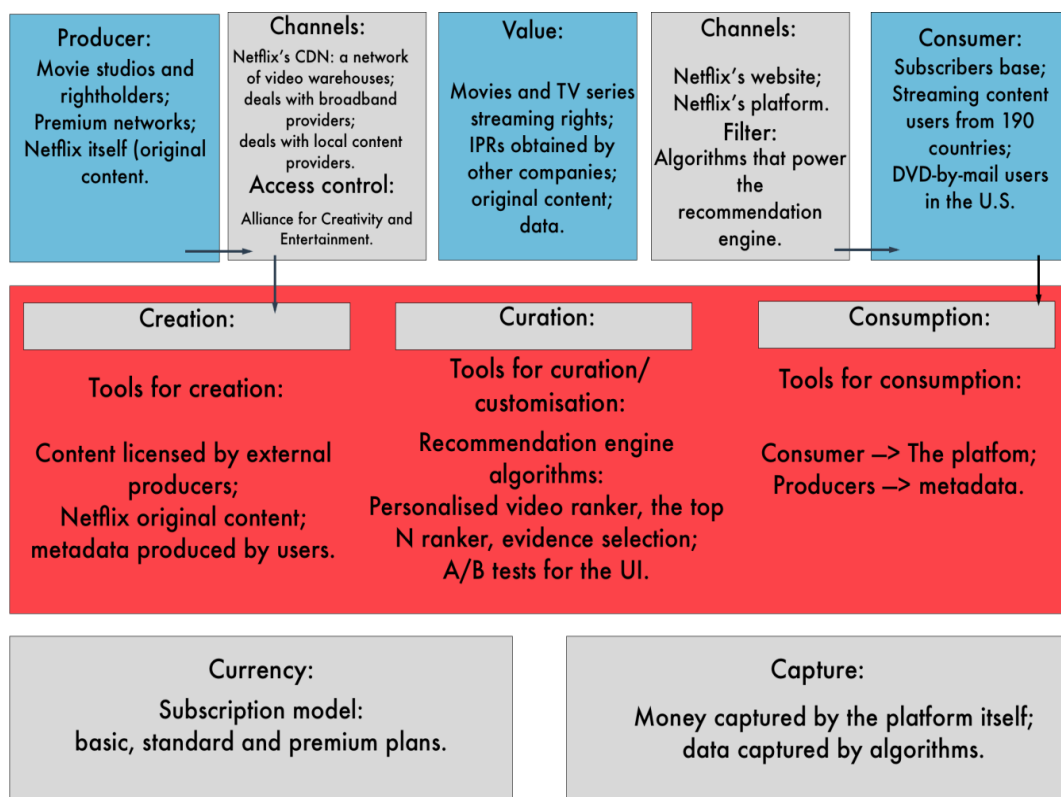


Figure 1 - Netflix's platform business model canvas. Adapted from: Platform Scale: How an emerging business model helps startups build large empires with minimum investment, p. 145 (Choudary, d, 2015).

Blockbuster's and Netflix's case studies clearly show that pipes and platforms have two very different business models. This distinction has a critical importance for entrepreneurs, because building a platform following a pipe business model will lead to failure. Platforms, in fact, are the result of the Internet advent and they require a brand-new business model. These new entities ask for a re-definition of the value-generation and value-capture mechanisms. Their success requires traditional companies to revisit their core business elements. To better understand this, let's now highlight the main differences between Blockbuster's and Netflix's business models. First, for Blockbuster, producers and consumers constituted two separate segments of the market with distinct functions. Netflix transforms them into roles: consumers shift to the role of producers and vice-versa. This means that consumers participate in co-creating value, producing metadata that are employed by the platform to power the recommendation engine. Furthermore, Netflix benefits from strong network effects.

In general, being platforms the result of the Internet era, platform business models present a more de-materialised structure. This means that many physical elements that contributed in creating value for pipes, are now transformed. For instance, Blockbuster's inventory of VHS, DVDs, Blue-Ray and games represented the major source of value for the company. On the contrary, key resources for Netflix are especially movies and TV series streaming rights, among with the intellectual property rights of other companies' content. Also, starting from 2013 on, Netflix started producing its own original content, to reduce dependence from movie studios providers and to attract culturally different segments in the U.S. and all around the globe.

For what concerns distribution channels, while for Blockbuster they were mainly physical (stores, kiosks), for Netflix they are completely de-materialised. The company, in fact, has its own Content Development Network which it exploits due to multiple deals with local broadband providers.

Less physical goods mean lower costs. Blockbuster faced high fixed costs for payroll and store maintenance, among with variable costs depending on the inventory acquired. Netflix is able to save on both of them. Rather, since the payment terms are not tied to member usage or to the size of the membership base, the company faces high fixed costs to enter multi-year commitments with studios and content providers. On the other hand, the revenue model is similar, as the two companies both adopted a subscription model. Netflix's strength, however, lied within its ability to offer unlimited and strongly personalised content to its customers who could watch a movie or a TV series from their laptop with no need to go out for renting a DVD. In the end, the most powerful element of Netflix was its own value proposition. The company, in fact, has been able to catch all the opportunities coming from the digital revolution that characterised the late 90s and the early 2000s. Key success lied within managers' ability to adapt Netflix's business model to the innovations coming from the

international scenario (DVDs first, streaming service then). On the contrary, Blockbuster was stuck in its own original structure, thus creating a closed and not agile company. In other words, Blockbuster experienced what Clayton Christensen (1997) defined the “Innovator’s dilemma”. Innovating requires, in fact, for the company to face temporary losses in order to succeed in the long run. Blockbuster refused to open to disruptive innovation and this led the movie-rental company to failure. It adopted a traditional business model which remained the same over the years. On the contrary, Netflix successfully shifted from the objective to meet specific customers’ needs, to the objective of conquering the mass market, thus strengthening the network effects mechanism.

In conclusion, due to the current trend towards digitisation, every company in the future will become a tech company. This means that the same service will be delivered through a completely different way, which can be implemented only by shifting to a platform business model. All businesses will need to shift to this new model at some point, otherwise they will be disrupted. Startups that do not realise the difference between pipe and platform and that do not design the business model accordingly, will collapse. Platforms, in fact, present multiple advantages. First, these new entities lead to a general dematerialisation of processes and resources. In this context, new sources of value creation arise. They are mainly digital assets that allow the firm to save on both distribution and maintenance costs. Digital assets are especially data produced by users who interact on the platform, thus creating value. Due to their nature, these require new forms of regulation. However, data allow the company to access a huge quantity of information and to provide a fully customised service to the user. Furthermore, platforms benefit from the phenomenon of network effects. While for pipes value creation follows a linear path, for platforms this comes from multiple actors who interact with each other. On one hand, this gives a strong competitive advantage to digital companies, on the other hand, it requires the design of new value capture mechanisms.

In conclusion, Blockbuster’s and Netflix’s history teaches that every new business should understand and adopt these tools, otherwise it won’t be able to face the fierce competition coming from the current international scenario. Businesses that succeed in exploiting these new features, are demonstrated to have high probabilities of success.