



**Aalto University  
School of Business**

# **TRENDS IN DIGITAL ENTERTAINMENT**

**A Multiple Case Study of Video and Digital  
Comic Service Platforms**

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**Abstract**

This research involved trends in video and digital comic service platforms. Four existing video and comic players were analysed by gathering information from publicly available sources. The aim was to create a picture of the existing market by looking at the differences and similarities among the existing players. The existing players were then compared with a new upcoming service platform, which combines both videos and digital comics. Information from this player was gathered by interviewing the company behind the service.

A literature review of platforms, digital platforms and platform theories was completed, followed by a theoretical platform leading to the choice of framework for analysing the case companies. Data collection, methodology and limitations of the study are then presented. The empirical part of the study focuses on analysing the companies by using the chosen framework, leading to a picture of the current players, the upcoming player and the market situation.

The results of the study showed that many of the theories of platforms and digital platforms in previous literature are valid for today's video and digital comic service platforms. The study emphasized the network effects between user groups. Most of the existing players were not utilizing these network effects as effectively as they could, which created an opportunity for a new market entrant.

This study is limited by the small sample size of analysed platforms. In addition, most of the data was gathered from publicly available sources, which makes the analysis less reliable. Video and digital comic service platform markets keep changing and improving at a fast pace. This means that data provided in this study might be outdated fairly quickly.

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**Keywords:** platforms, digital platforms, network effects, entertainment, videos, comics, IISI<sup>n</sup>

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## 1 INTRODUCTION

"We discovered a lot of people still use print publishing, and paid their own money to print comics ... Or people start their own website, in which case you have to build your audience, think about mobile, pay for hosting. It just doesn't really work out." - Chang Kim, the founder and CEO of Tapas Media (Tech Times, 2015).

People tend to have a need to be entertained. The exact reason for this is unknown, but there are some theories that try to find an explanation for this phenomenon. According to Katz and Foulkes (1962) people have a need to vary their everyday lives and temporarily escape the social environment in which they actually live. They see entertainment as an important aspect in fulfilling this need. Wolf (1999) saw the wish to have fun as one of the main themes in today's cultures, with endless ways to consume entertainment.

Historically, forms of entertainment have taken place in live shows performed in front of an audience. Good examples include gladiatorial combat in Rome, theatre in ancient Greece and horse racing in British stadiums. The situation has changed, as various forms of media have become the main channel offering entertainment (Zillman & Vorderer, 2000). Mass media offers a lot of entertainment possibilities with a broad variety. The demand of such possibilities has increased over the past decade, especially in the industrialized world and certain parts of Asia. People carry and own more and more technologically advanced devices (smart phones, tablets, smart TVs etc.), which can be easily used in the consumption on entertainment along with other types used (Vorderer, Klimmt, & Ritterfeld, 2004).

The video entertainment industry together with media and communications industries are at a breaking point. The industry has been reshaped by technological innovations, changing consumer behaviour, and developing business models. Platforms have started to play bigger roles in the video entertainment industry compared with the traditional linear value chain (Gimpel, 2013) This has led to a 121% increase in the viewing of streamed-on-demand TV programs and TV series, and a 90% increase in the viewing of streamed-on-demand films. In total, streamed video viewing time increased from 2.9 h/week in 2011 to 6.0 h/week in 2015 (Erlandsson & Ahmet, 2015). Also, the amount of digital comics has been rising over the past few years. Sales of digital comics in North America rose from \$25

million in 2011 to \$100 million in 2014, without taking subscription services into account (ICv2, 2015).

The purpose of this study is to analyse and compare existing OTT (over-the-top) video and comic services, focusing purely on entertainment. The main focus is on finding similarities and differences between the existing players, and with the gathered information create an understanding of the existing OTT video and comic markets. Also, a new player entering both markets will be analysed and compared with the existing players. The research questions are:

Q1: “What similarities and differences do the existing entertainment-focused video and comic services have and how do they differ from each other?”

Q2: “What similarities will a new player entering the entertainment-focused service market share with the existing players, and how does the new player try to differentiate in order to capture its share of the market?”

The focus of this study will be on the consumers, content providers and platform service providers. Network effects between and within user groups represent a key element of this study. To find answers to the questions arising, the biggest OTT video and comic services will be reviewed by gathering information from several publicly available sources. Some smaller existing players will also possibly be included in this study. Management of the new upcoming player will be interviewed, since there is no information available on the service outside the company.

This study begins by going through some of the most important existing literature and research on digital and non-digital platforms, multi-sided markets and network effects, as well as other important platform-related concepts. After this some platform theories are presented, which can be applied to platforms in multi-sided markets. The next step is to look at the theoretical background and rationalize why ICT Intensive Service Innovations in many-sided markets (IISI<sup>n</sup> model) has been chosen as the framework for analysing the different players. This is followed by explaining the methodology and scope of the study before going through the empirical study and findings. Results are discussed and conclusions drawn, and the limitations of the study are presented.



## 2 PLATFORMS

This chapter concerns some of the most important existing research related to platforms. Section 2.1 introduces the concept of platforms in multi-sided markets. These studies have an economic perspective and examples concerning network effects within and between different user groups in multi-sided markets are presented. Section 2.2 is a deeper look at how these network effects affect different user groups. The impact can be either negative or positive, depending on several factors.

### 2.1 Economics research on platforms in multi-sided markets

Rochet and Tirole (2002) examined competition in platforms which operate in multi-sided markets. Markets with network effects tend to be at least two-sided, and it is common that there are even more sides, making the market multi-sided. Platforms in several industries must be useful for all sides of the market in order to succeed and make money. Rochet and Tirole used credit and debit cards as an example. Cardholders value these payment methods as long as merchants, who they want to buy from, accept these cards. On the other hand, the more users there are using these payment cards, the more attractive it becomes for merchants to accept the cards. In their paper, Rochet and Tirole state that a platform creates a multi-sided market when the profit of a platform together with the volume not only depends on the total price charged by different user groups, but also on the composition.

Eisenmann, Parker and van Alstyne (2006) shared Rochet and Tirole's example and saw credit cards as representing the most innovative financial service since World War II. They defined the term platform simply as products or connecting users in multi-sided networks. Their article focuses on strategies in two-sided markets, but many of their examples could include at least a third party. An assumption can be made that these theories can also be applied in multi-sided markets. In addition to credit cards, Eisenmann et al. give many other good examples concerning platforms in two- and many-sided markets.

Traditionally, in a value chain, value moves from left to right. In this example cost is on the left and revenue on the right. This is not the case in two-sided markets, because a platform has a different user group on each side. Revenue can be collected from both user groups, but on the other hand, serving both user groups creates costs on each side. This phenomenon, where two or more groups are attached to each other, is called the network

effect. As a result of network effects platforms with big user groups on each side create higher revenue. Google uses the large amount of Web searchers to make the platform attractive for advertisers. Google also offers sponsored links to companies, making it a platform with a multi-sided network effect. The revenue comes from advertisers and companies, but the services are mostly free for individual users. This means that the network effects split unevenly between different user groups and the platform. Another good example is retail electricity, where a traditional business has been moving towards a platform approach in multi-sided markets. The idea is to help consumers looking for a specific power producer, allowing them to find cheaper coal or renewable power through a platform. In this case the network effects are weaker and more single-sided than in Google, and this could cause sustainability problems in the future. Another very simple example is shopping malls, where the mall works as a platform connecting shoppers and retailers. The network effect is simple, because more retailers make the mall more attractive for shoppers owing to increased diversity. On the other hand, more potential shoppers make the mall a more tempting marketplace for retailers. In conclusion, Eisenmann et al. showed that markets are becoming more and more complex, and because of this, network effects play a big role in the success of a platform (Eisenmann et al., 2006).

Even though the two previous studies focus on platforms in multi-sided markets, giving good examples, especially as regards network effects, they focus mostly on the pricing around platforms. Boudreau and Hagiu (2009) took a deeper approach towards multi-sided platforms (MSPs) by going further than price settings. The rules and constraints not only create inducements but also shape behaviour patterns. The study included four primary case studies as examples. Two of the case studies involved Facebook and Topcoder, whereas Roppongi Hills ‘mini-city’ and Harvard Business School are non-digital platforms. The study has two main points. The first one is that multi-sided platform markets should be approached with externalities and non-pricing-related problems. The second one is that platform owners should invoke a variety of tactical aspects to affect the users and complementary parties around MSPs in order to benefit from information and the position within an ecosystem. The platform owner might have goals to increase value in the ecosystem as a whole, rather than just focusing on profit. The instruments going beyond price settings used in the study involved combinations of legal, informational, technical and other instruments to find different outcomes. It was found that these combinations are used to minimize costs, complexity, uncertainty, asymmetric information and coordination problems within the MSP.

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The evidence indicates that the scope of strategy is a lot wider for platforms than for normal companies. It cannot be limited only to pricing, technology or product design, because controlling interactions outside the platform’s boundaries are also a critical part of platform strategy. Platform owners should maximize the value of an entire ecosystem together with the extracted value (Boudreau & Hagiu, 2009).

Overall, economic research about platforms in multi-sided markets is an important part of the study field, especially when it comes to understanding the financial dynamics and network effects related to platforms. De Reuver, Sørensen and Basole (2015) pointed out that the primary focus from an economic point of view is to explain how economic forces make multi-sided markets differ from other markets. Because their main focus is on pricing these studies cannot be used as the main base when studying digital platforms.

Digital platforms are different from most of the platforms mentioned in this section, as later parts of this study will show, but some of the concepts of economic studies can also be applied to digital platforms. Network effects in particular play a key role in the success of digital platforms. Therefore, it is important to have a basic knowledge of these economic studies when it comes to choosing a framework for comparing different entertainment-focused OTT players.

## **2.2 Network effects**

Platforms connecting several user groups create network effects, also known as network externalities. The basic assumption of network effects is that a technology’s usefulness is positively correlated with the amount of users in the same or different user group (Katz & Shapiro, 1985; Shapiro & Varian, 1999). Network effects can either be direct or indirect. Network effects are indirect if the value for a user group does not depend on the amount of users in the group. Direct network effects take place when the value for a user group depends on the amount of users in different user groups (Katz & Shapiro, 1985). A good example of a direct network effect is social media, where the value of the platform increases when more people join and start using the service (De Reuver, Sørensen & Basole, 2015). The earlier-mentioned seller-buyer connection is also an example of a direct positively correlated network effect, whereas video game consoles are examples of positively correlated indirect network effects. The more game developers there are for a console, the more

attractive that console becomes for the gamers. Indirect network effects can also be negatively correlated. For example, if a search engine has a lot of advertisers the user experience may become less pleasant for the searchers. Once users from different user groups start adopting platforms, network effects mostly create value for both new and existing users. This value can consist of lower prices, better certainty about future versions, and future market opportunities (Dew & Read, 2007).

## **2.3 Digital platforms**

This section concerns some of the most relevant studies and concepts related to digital platforms. Section 2.3.1 focuses on digital platforms and different studies around them. Section 2.3.2 goes deeper into a concept called “Layered modular architecture”, which is a concept applied around digital platforms.

### **2.3.1 Studies on digital platforms**

The purpose of this section is to go through different studies on digital platforms. Many theories from studies mentioned in earlier sections are valid for digital platforms as well, but this section will give reasons why digital platforms differ from non-digital platforms.

De Reuver, Sørensen and Basole argue in their paper that digital platforms are present everywhere in today’s industry. Even though digital platforms play a big role in today’s world, they have yet not become part of mainstream information systems (IS) research (De Reuver et al., 2015).

The IS field has seen significant growth in the past 40 years. Digital technology has created major changes in today’s society. At first companies started to use IT to improve their businesses and to create networks. This developed throughout the years, and nowadays companies have started to offer digital products. So far these kinds of digitized products are a fairly new phenomenon, and therefore the organizing logic of digital innovation has only been observed in existing studies of digital innovation (Yoo, Henfridsson, & Lyytinen, 2010).

Digital platforms can be split into several sub-categories. Social media platforms like Twitter have changed people’s interaction and how they share experiences. Operating platforms like iOS and Android are the main players in the mobile telecommunications industry. Payment platforms like PayPal and Skrill can possibly mix up the financial industry. Peer-to-peer digital platforms such as Uber and Airbnb have created a sharing economy (De Reuver et al., 2015).

Yoo, Henfridsson and Lyytinen (2010) stated that most IT innovation research is focused on process innovation, and therefore their focus as regards digital innovation lies in product innovation. Using e-books as an example, the main attractions have been to reduce distribution and product costs, and hold several books in a single unit. The previously non-digital product has become a digital product with capabilities such as memory, traceability, communication and programmability. E-books are also an example of digitization, which according to Yoo (2010) is the encoding of non-digital information to a digital format.

Yoo et al. (2010) give three unique characteristics of digital technology: “re-programmability, homogenization of data, and self-referential nature of digital technology”. A digital device is re-programmable, which means that the operational part of the device is separate from the physical logic, allowing it to execute a range of operations, including editing, processing or calculating distances. Homogenization of data means that with the same devices and networks any digital data is storable and viewable. This data can include, for example, video, audio or text.

These three characteristics represent the basis of modern technology. The spread of innovation makes digital networks, contents, services and devices more available through positive network externalities. This keeps creating good things for society, because digital innovation leads towards decreased learning costs, lowered entry barriers and accelerated diffusion rates. For example, a major improvement in digital technology has been fast improvement in the price and performance of computers. Prices have been going down whereas performance has kept increasing, which has made digital innovation more affordable to a wider range of people concerned with innovative activities.

The better availability of more functional Internet connections has also brought digital innovation closer to everyone and lowered the barrier to participation. Digital innovations of physical products create new challenges. This has led to a situation where companies need to

manage multiple structures instead of only a single structure during a contrivance process (Svahn & Henfridsson, 2012).

It has been argued that digital platforms are technical products with a broad codebase, which can be filled by the body of a code from a third-party module (Tiwana, Konsynski, & Bush, 2010). It has also been argued that digital platforms can be extended internally through a software-based system without the need of any third-party modules (Ghazawneh & Henfridsson, 2015). In video and comic service platforms this depends on whether or not the platform creator is also the platform owner. However, video and comic platforms mostly continue to have the possibility to extend their offerings, like other digital platforms, with multiple modules (Sanchez & Mahoney, 1996).

The main tool for analysing digital platforms should be external to the actual platform involving the connections of different parties related to the platform (Ghazawneh & Henfridsson, 2013). Based on this theory, Eaton, Elaluf-calderwood, Sørensen & Eaton (2015) studied Apple's iOS service system in terms of digital technology by going through nearly 5,000 blog posts. They found that the owner of the platform does not necessarily only control the platform, but must also consider several other factors around the platform.

Diversity is a key part of the sustainability of a digital ecosystem (Darking, Whitley, & Dini, 2008). Based on this theory, Oh, Koh, & Raghunathan (2015) created a new revenue model, where income should be split more evenly between platform providers and developers of applications. This would create more diversity in terms of more applications and create a more sustainable ecosystem around the platform. For video and comic platforms it is also important that they have enough content available for end-users. Therefore, the pricing model has to be carefully analysed by platform owners. This is a challenging task and it is difficult to say what the correct price should be. Therefore, a lot of variation is seen in the pricing models of different platforms. Besides pricing, diagonal relationships are important in the sustainability of a platform (Wareham et al., 2014).

## 2.3.2 Layered Modular Architecture

Layered architecture is characteristic of digital technology. The best example of this is the Internet. There are two major separations for the layers: (1) the layers between services and devices caused by re-programmability, and (2) the layers between contents and networks caused by homogenization of data (Gao & Iyer, 2006).

The four layers of layered architecture are the following: services, contents, devices, and networks. The device layer can be, for example, computer hardware, making it a physical machinery layer, or it can, for example, be an operating system, making it a logical capability layer. The purpose of a logical capability layer is to control and maintain the physical machine connecting it with other stages. The connecting stage is similar to a device stage in that it can also be divided into two smaller layers. If the layer is, for example, a radio spectrum or a cable, it is called a physical transport layer, whereas TCP/IP and peer-to-peer physical products are called logical transmission layers. The purpose of service layers is to improve application functionality by directly serving users with their needs, for example storing and consuming contents. The final layers are called contents layers, which include data such as sounds and images that can be stored and shared. Another important role of contents layers is to provide directory information and metadata of the original content. Examples of directory information include encoding methods, ownership, copyright and so on (Farrell & Weiser, 2003).

This layered architecture of digital technology is important to understand, because it acts as a basis for the theory that will be next discussed further. Yoo et al. (2010) stated that even though there has been discussion about layered architecture, not enough attention has been put into the implications for product innovation. They created the layered modular architecture, which explains how fundamental assumptions about organizing logistics and product architecture are challenged by the digitization of physical products.

In general, modularity defines how a product can be split into pieces that can then again be recombined (Schilling, 2000). Modular architecture can increase flexibility and reduce complexity in design in an effective way. This happens by breaking up products (De Reuver et al., 2015).

## 2.4 Theories, concepts and parables applied to platforms in multi-sided markets

In this section I go briefly through a theory, a concept and a parable that platform owners should be aware of. Multi-homing, platform envelopment as well as the chicken-and-egg problem are important aspects in the success and sustainability of a service platform. These will be used, at least partly, in the cross-comparison section of the case studies.

### 2.4.1 Multi-homing

Multi-homing is a concept where a user or a group of users finds it beneficial use multiple platforms instead of a single platform, even though these platforms might be competing against each other. Multi-homing is opposite to single-homing, where a user or a user group only uses one single platform.

It is common that service platforms have multi-homing in at least one side of the user base (Evans, 2003). A good example of multi-homing is in mobile phone applications. End-users typically do not multi-home, because they usually use only one mobile phone which has only one operating system, for example iOS or Android. In other words, mobile phone application end-users mainly carry out single-homing. The situation is different for mobile app developers. Most applications are available for multiple operating systems in order to reach the maximum amount of end-users as possible. Therefore app developers carry out multi-homing.

Platform owners should also be aware of the switching cost for users on both sides of the platform. Switching cost is the price that a user has to pay in order to switch to another platform. The lower the switching costs are, the more likely it is that a user will start multi-homing or switch completely to another platform. This concept is important for platform owners to understand, because a low switching cost will increase the risk of competitors taking over some of the existing user base. Hagiu (2009) states that if the switching cost or cost of multi-homing is very low for one end of users, it is better to try to make a profit with the end group with higher switching or multi-homing costs. The reason for this is that there is a big chance to lose the user side with low switching and multi-homing costs if they are also charged a high price.



## 2.4.2 Platform envelopment and bundling

Platform envelopment is a theory, which starts when one platform provider has a target to enter another market. This is done by combining the platform's own functionality into the targeted market and creating a multi-platform bundle serving multiple markets.

The theory of platform envelopment was introduced by Eisenmann, Parker & Van Alstyne (2011). Network effects and switching costs often protect the existing platforms and therefore make displacement difficult. A platform entering a new market must deploy this protection in order to succeed. This usually requires bringing something new to the table, for example in terms of a revolutionary product.

Prior to an envelopment attack, platform pairs can be split into three different groups. If the attacker is a complement for the target, the new platform brings something new to the table and tries to take over the existing platform. Windows Media Player taking over Real Player is an example of envelopment of complements. This is also the most common way to succeed. The attacker can also try to take over a weaker substitute. This usually does not lead to a full displacement, but to a successful market entry with the target also maintaining a market position. Federal Express trying to take over UPS is an example of envelopment of weak substitutes. In the last scenario the attacker tries to take over a platform which is functionally unrelated to the attacker. This concept also rarely leads to full displacement. Google Docs has tried to take over Microsoft Office's market share, but both platforms still have their share of the market. Apple has tried to capture the market from Amazon Kindle with iPhone and iPad, but both platforms still remain in the market (Eisenmann et al., 2011).

Bundling is another effective way to prevent other platforms entering the current market. For example, if a company bundles two goods together, a competitor offering only one of these goods will have difficulties entering the market successfully. Even if a competitor is able to enter the market with a single product, bundling two goods can still be an effective pricing tool. In this case the new competitor will most likely not be able to take away many customers and the existing platform will not have to enter a price war (Nalebuff, 2004).

As this study later indicates, platform envelopment and bundling can be seen in today's OTT video and comic service market. Amazon in particular has taken an interest in

platform envelopment by entered the video and comic markets, bundling new platforms into its Internet-based retailer platform. Product bundling can be seen in nearly all parts of the examined platform, for example selling three different comic issues for the price of two.

### **2.4.3 Chicken-and-egg problem**

Network externalities are an important concept within platform theories and in the success of platforms. Successful platforms must have enough buyers and users so that supply and demand remains in equilibrium. In order to attract a lot of buyers, the platform should have a large amount of sellers. On the other hand the sellers are only willing to join the platform if there are enough existing buyers available. This is known as the “chicken-and-egg problem”, which is caused by the network externalities between different user groups (Caillaud & Jullien, 2003). The “chicken-and-egg problem” is not an actual theory or concept, but more of a parable related to platforms.

The “chicken-and-egg problem” can be a problem for existing players, but it mostly affects new platforms entering a market. These new platforms must be able to attract enough new users in order to get the business running. After this so-called critical mass has been achieved, the platform can start growing through network externalities (Evans & Schmalensee, 2010).

There are different strategies available to achieve critical mass. The first way is to subsidize pricing by letting one side of the user group use the service free of charge. Diners Club is a good example of this; letting cardholders use the card without any costs in the early days. Another way is to lower the prices for one user group. Lowering the costs for a user group or helping a user group by developing tools for them will result in an increased amount of users in that group. If this group, for example, represents the content providers of a mobile app store, the increased amount of content will encourage more end-users to join the platform as well (Evans, 2003). This strategy is known as “divide-and-conquer” (Bernard Caillaud & Jullien, 2001).

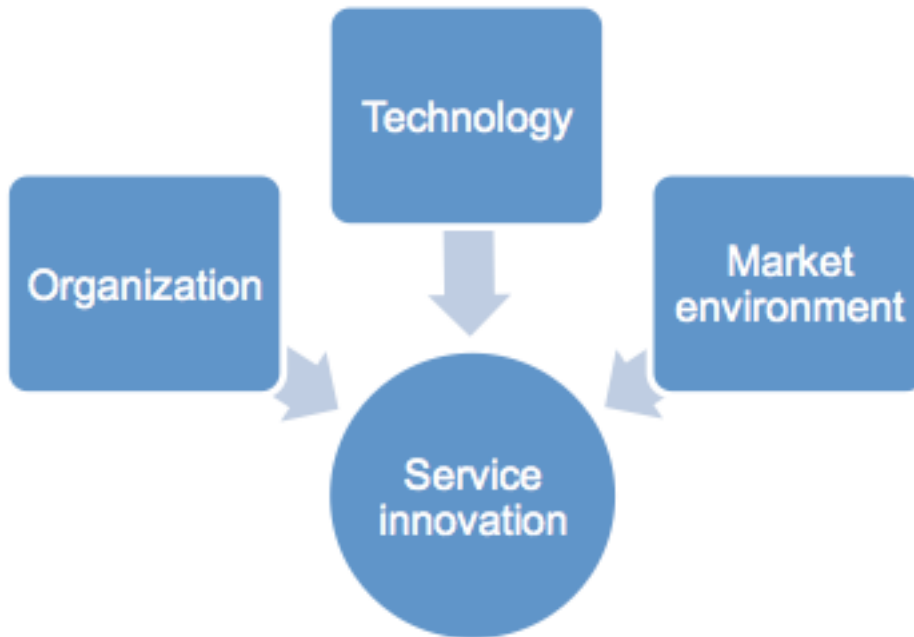
## 3 THEORETICAL BACKGROUND

In this chapter I will go through the theoretical background behind this study and give a reason why the Model for ICT Intensive Service Innovations in Many-sided Markets was chosen to be the framework for comparing and analysing OTT Video and Comic services. Section 3.1 introduces the theory behind the IISI<sup>n</sup> Model. Section 3.2 goes through some additional literature related to network effects and Section 3.3 connects these network effects with the IISI<sup>n</sup> Model. Section 3.4 concerns how the IISI<sup>n</sup> Model has been used in case studies before the present study, and further explains why the IISI<sup>n</sup> Model is very suitable for this study.

### 3.1 IISI<sup>n</sup> Model Framework

The purpose of this section is to provide an understanding of how entertainment-focused OTT services play an important role in many-sided markets. These OTT services provide a platform for several stakeholders including end-users as video-viewers and comic-readers, content-providers as well as third-party members such as advertisers and marketers. In order to understand the network effects and differentiation between different OTT services, a framework called IISI<sup>n</sup> (Tuunainen, Tuunanen, & Bastek, 2009) was chosen as the tool for comparison. IISI<sup>n</sup> “is the model for ICT (information and communications technology) Intensive Service Innovations in many-sided markets” (Tuunainen, Tuunanen, & Piispanen, 2011). The IISI<sup>n</sup> model simplifies search for and identifying differentiation between entertainment-focused OTT services.

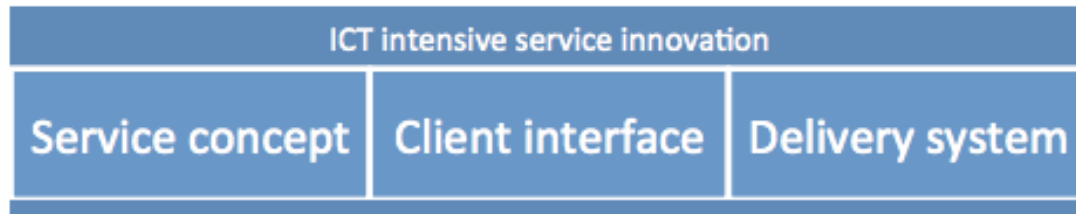
The scope of this study is on OTT Video and Comic services, network effects and platforms as service innovations. Thus it is necessary to understand the differences between the factors that affect service innovations. Figure 1, from Tuunainen et al. (2009), below, includes three factors that have individual effects any service innovation. The figure shows that in order to understand a service innovation as a whole, it is important to consider both internal and external factors from different angles.



**Figure 1. Categories of factors affecting service innovation (Tuunainen et al., 2009).**

As Figure 1 shows, service innovations in general are affected by three different factors. Organizational factors can be split into two different sub-factors. The first sub-factor is organization and management, who decide what is done and how it is done. The second sub-factor includes the financial structure, which can be further split into costs and potential profits of a service. Technological factors explain what kind of technology is used in the service innovation. The market environment factor can also be split into two sub-factors. The first one includes the customers together with the demand which they create. The second sub-factor includes the competitors, which can be direct with a similar service or indirect with a competitor that offers alternative services (Bouwman, Zhengjia, Duin, & Limonard, 2008).

Den Hertog, Broersma, & Ark (2003) introduced a model with three dimensions. The first dimension is investment in ICT, which covers the technology and is the contact point with the customer, who can be seen as the second dimension of the innovation model. The third and final dimension is a new service delivery system. This includes non-technological dimensions such as organizational concepts, new working routines and, for example, a back office setup (den Hertog et al., 2003).



**Figure 2. Dimensions of ICT intensive service innovation (Tuunainen et al., 2009).**

Based on the multidimensional innovation model of den Hertog et al. (2003), Tuunainen et al. (2009) introduced the dimensions of ICT intensive service innovation (Figure 2). As the dimensions focus purely on ICT intensive service innovations, the difference is that technology has been embedded.

Let's go through these three dimensions separately. The Service Concept can be seen as a new value proposition which has not been seen before in a certain market. Characteristics of a service innovation can include solutions to new and existing problems or simply be minor changes. The first entertainment-focused OTT services created a solution to ease the viewing of multiple videos. Nearly all entertainment-focused OTT services share some minor characteristics that cannot be seen as true value-adders (Tuunainen et al., 2009).

The Client Interface does not refer to the contact point between a user and a system or software application. It refers to the innovation itself, which is in the interest of customers and the provider of the service. When talking about entertainment-focused OTT services, the platform itself can be seen as the Client Interface. Clients play an important role in the evolution of these platforms, as their doings define a major part of the success of the service innovation (Tuunainen et al., 2009).

The third and last dimension is the Service Delivery System. It does not include any interaction between the two sides. For entertainment-focused OTT Video and Comic platforms, this Service Delivery system is electronic delivery of an innovation. The same can be said about most other cases as well (Tuunainen et al., 2009).

## 3.2 Network effects against theoretical background

In this chapter we take a short look at a few examples of network effects. In order to understand the success levels of different platforms, it is crucial to understand the network effects.

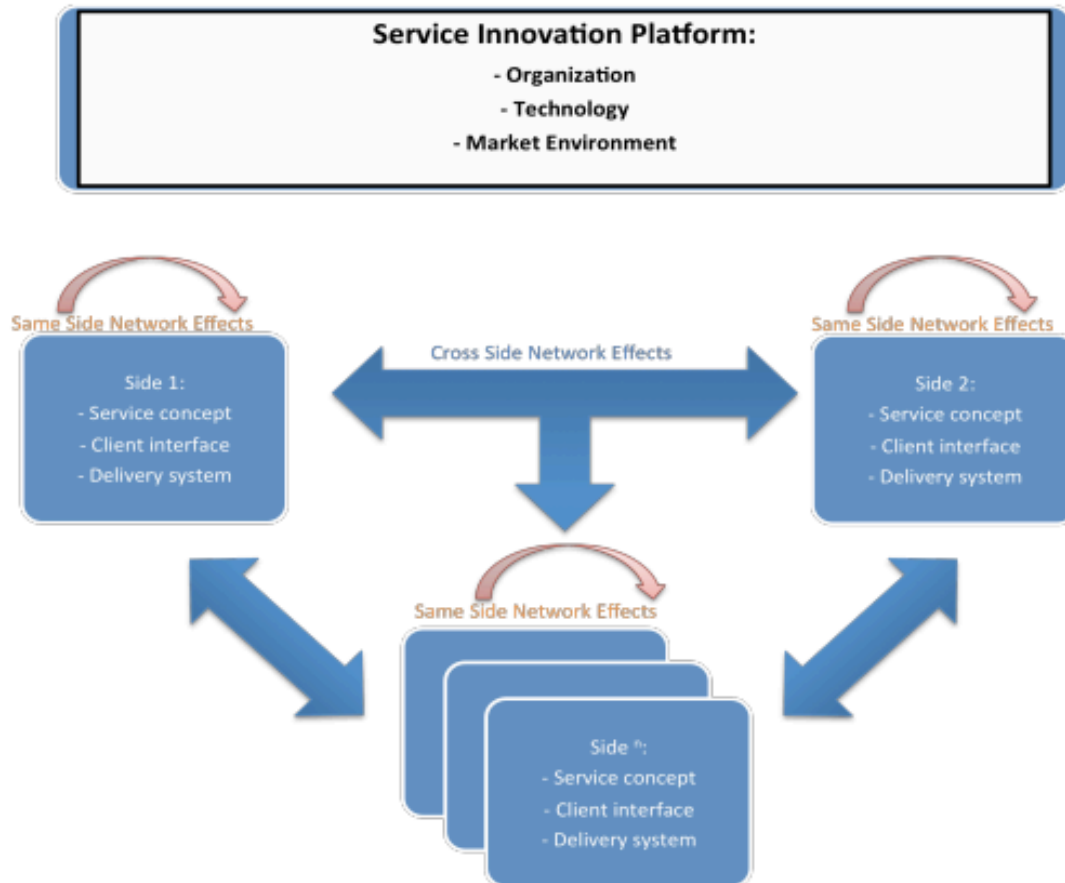
Platforms connecting several user groups create network effects, also known as network externalities. The basic assumption of network effects is that a technology's usefulness is positively correlated with the amount of users in the same or different user group (Katz & Shapiro, 1985; Shapiro & Varian, 1999). Network effects can either be direct or indirect. Network effects can be considered direct when users on the same side of the user group are valuable for an individual user. On the other hand, indirect network effects take place when users from other groups are valuable for the individual user (Katz & Shapiro, 1985). A good example of a direct network effect is social media, where the value of the platform increases when more people join and start using the service (De Reuver et al., 2015).

The earlier mentioned seller-buyer connection is an example of a direct positively correlated network effect. Video game consoles are good examples of positively correlated indirect network effects. The more game developers there are for a console, the more attractive that console becomes for the gamers. Indirect network effects can also be negatively correlated. For example, if a search engine has a lot of advertisers the user experience may become less pleasant for the searchers. Once users from different user groups start adopting platforms, network effects mostly create value to both new and existing users. This value can consist of lower prices, better certainty about future versions, and future market opportunities (Dew & Read, 2007).

## 3.3 IISI<sup>n</sup> Model and network effects

Platforms are products and services that act as the contact point between parties in multi-sided networks (Rochet & Tirole, 2003). As seen in Figure 2, there are three different dimensions of service innovation: "The Service Concept, The Client Interface, and the Delivery System." These dimensions usually differ depending on the side of the user groups. The IISI<sup>n</sup> model (see Figure 3, below), known as "the Model for ICT Intensive Service

Innovations in Many-sided Markets” takes these differences into consideration (Tuunainen & Tuunainen, 2011).



**Figure 3. The IISI<sup>n</sup> model: Model for ICT Intensive Service Innovations in Many-sided Markets (Tuunainen & Tuunainen, 2011).**

The IISI<sup>n</sup> model explains how different user groups are related to each other in multi-sided networks and takes into consideration the differing dimensions in different user groups. Blue boxes describe the user groups on different sides of a service innovation platform. The red arrows describe the network effects inside the user group. These effects are known as ‘Same Side Network Effects’, which take place within a certain user group. The many-sided blue arrows describe the network effects between different user groups and these effects are called ‘Cross Side Network Effects’. The platform provider cannot completely control these different network effects, but it is crucial to understand them and take them into consideration when decisions are made (Tuunainen & Tuunainen, 2011).

As mentioned in Section 4.2, network effects play an important role in the success of platforms. Positive network effects are conjunctive factors of successful platforms (Economides & Katsamakas, 2006). When a user or users join and increase the network, adding value or other positive effects to existing users, positive network effects occur (Katz & Shapiro, 1994). Larger networks create improving margins, because user bases grow and users are willing to pay more (Eisenmann et al., 2006).

Another important factor that platform designers have to consider is the pricing strategy. Serving all user groups creates costs, but on the other hand, revenue can also be collected from all user groups. The difficulty in pricing comes from the variation between different user groups. This leads to a situation where one side of the user groups is subsidized compared with the others. It is difficult to decide which side should receive a discount. For example, in video services it is normal to discount the end-users and charge creators. We can expect this to be the norm as well when it comes to entertainment-focused OTT services, even though some variation will occur (Rochet & Tirole, 2003) (Eisenmann et al., 2006).

### **3.4 Using the IISI<sup>n</sup> Model in case studies**

As the theories in the previous sections demonstrate, the IISI<sup>n</sup> Model is an excellent tool to compare platforms with multiple user groups and network effects. As ICT Intensive Service Innovations, Entertainment-focused OTT-services fit perfectly inside this platform definition, and therefore the IISI<sup>n</sup> Model serves the needs of this study perfectly. Categories of factors affecting service innovation split into sub-factors that can be used to give detailed information about different platforms and their differences. The model also takes into consideration the different dimensions of different user groups in service innovation together with Same Side and Cross Side network effects, where variation is also expected

Not only does the theory support the use of the IISI<sup>n</sup> Model, but it has already been used in multiple case studies to assess similarities and differences in ICT Intensive Service Innovations. Tuunainen and Tuunainen (2011) introduced two TV service-related case studies and compared them with each other. The first one was a Finnish mobile TV service called “Elisa Mobile TV” and the second was an IPTV service called “NTBC IPTV Service”, which is based in New Zealand. Using the IISI<sup>n</sup> model, Tuunainen and Tuunainen recognized the difficulties that both services faced in their fairly small market areas. Besides this, Elisa



Mobile TV was found to lack clarity in their pricing model, whereas NTBC’s IPTV service totally subsidized the price for consumers. Tuunainen and Tuunainen were able to provide good understanding of these two ICT intensive service innovations. The factors considered were problems these services face that can be expected to be similar as regards OTT Video and Comic platforms. This clearly supports the use of the IISI<sup>n</sup> model in this study

Tuunainen and Tuunainen also used the IISI<sup>n</sup> model in describing and analysing two of the most popular mobile service platforms at the time. Nokia’s Ovi Store is a marketplace where free and paid-for content is available for buyers. This can be done directly through the platform, or indirectly via links that can be found in the platform. Apple’s App Store is one of the leading platform applications in the world. It is a global market for applications and content where buyers, as with Nokia’s Ovi, can directly download free and priced content as well as applications from the store. App Store’s success compared with Ovi is partly explained by differences in client interface approaches. Apple has been able to create an efficient service for all user groups on different sides of the platform, whereas Nokia has not been able to offer a clear and easy solution for content creators. The data for the study was gathered from publically available sources. A similar method is used in this study for most of the cases, which provides more evidence that the IISI<sup>n</sup> model is a valid tool for this study as well

Case studies that have been carried out using the IISI<sup>n</sup> model clearly demonstrate that it is a valid tool for comparing and analysing ICT intensive service innovations. The studies also show that the IISI<sup>n</sup> model is a valid tool for comparing different kinds of service innovations, which also supports the use of the model in this study. The service innovation platform will be analysed through Organization, Technology and Market Environment. Service concept, client interface and delivery system will be analysed from the consumer side and from the content-provider side.

As this has been proven to be an efficient way to compare different kinds of service innovations, the same structure will be used in this study. The research questions of this study, based on the theoretical framework and the literature, are the following:

Q1: “What similarities and differences do the existing entertainment-focused video and comic services have and how do they differentiate from each other?”

Q2: “What similarities will a new player entering the entertainment-focused service market share with the existing players, and how does the new player try to differentiate in order to capture its share of the market?”

## 4 METHODOLOGY AND SCOPE

This section goes through the data and the research method. In Section 4.1 I will explain the data used in this study and how it was collected. Section 4.2 gives some background for the methods used and Section 4.3 examines the trustworthiness of this study.

### 4.1 Data

The data collected in this study comes mainly from publicly available sources on the Internet. This is because the platforms examined in this study are mostly big global players, and getting an interview with any of the managers would be nearly impossible.

The material consists of articles, columns, other written texts as well as numerical and statistical data. Some of the material used has been created by the organizations behind the platforms examined. Other material used in this study has been created by third parties that do not have a direct link to the platform services examined. Publicly available sources are used for all existing players, and the COO (chief operating officer) of the new player entering the market was interviewed.

Crackle, Netflix, Hulu and Amazon Video were chosen to be the OTT video service platform cases in this study. All of these are major players in the video service platform market and it can be said that they set the bar for the video market. Another reason for choosing these players is the fact that there is a lot of publicly available material written about them, which unfortunately is not the case for some of the smaller players. Mostly because of the same reasons, Marvel Unlimited, DC Comics, Comixology and Tapastic were chosen as the digital comic platform cases. The publicly available material regarding comic services is remarkably less substantial than that available for video cases. Nevertheless, I believe that the available information is enough for the scope of this study.

The data was gathered to one Excel spreadsheet, which enables a practical way to look for similarities and differences among the existing players. In addition, a separate Word file was used for further notes and recording links to the publicly available sources. A total of 16 video and 9 comic services were included in the original spreadsheet for cross-comparison. The choices of the players were by based on personal knowledge about the industry and by using Google for potential players. In the first step the spreadsheet included 17 different columns with following variables. The variable is followed by a reason, why the

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variable was chosen for the final study or why it was eliminated.

1. **User acquisition cost:** How much does a new user cost? Different amounts were found for three out of the 24 players, but even these numbers were more than three years old. Therefore this variable was eliminated in the first round.

2. **Customer lifetime value:** This is a prediction of the net profit attributed to the entire future relationship with a customer. No information was found for any of the players, except for Netflix, so the variable was eliminated in the first round.

3. **User churn rate:** A percentage of users that stops using the service over a specified period of time. Some churn rates were found from publicly available industry reports for Netflix, Hulu and Amazon video from the year 2013. The variable was eliminated in the first round due to the lack of information.

4. **Average revenue per user:** How much revenue does a single user create for the service owner on average? Any relevant information was extremely difficult to find, so the variable was eliminated in the first round.

5. **Revenue model:** How does the service make money? This information was found for all of the players and included in the final study.

6. **Pricing:** What is the cost of using the service? This information was mostly found from the services' web pages and is included in the final study.

7. **Number of users:** How many people use the service? This information was found fairly easily for the biggest players, but it was more difficult to find for the smaller unknown names. The variable is included in the final study, and the lack of this information eliminated many players from the study

8. **Availability:** In which countries is the service available? This information is usually found from the services' web page. The variable is included in the final study.

9. **Products:** Does the service offer other products besides videos and comics? This information was easy to find and the variable is included in the final study.

10. **Owner:** Who owns the service? This information was easy to find and the variable is included in the final study.

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11. **Number of employees:** How many employees work for the owner? This information was easy to find for the well-known names, but the lack of information eliminated some of the less known names. The variable is included in the study.

12. **Deals with content creators:** Who creates the content for the service? What type of deal there is between the owner and the content providers? It was really difficult to find exact information, and several sources were used for each name. The lack of information eliminated some names, but the variable was used in the final study.

13. **Bundles:** Are there any special deals for example “three for the price of two” type of deals? This information was usually found from the services’ web page. The variable is included in the final study.

14. **Free trial:** Does the service offer a free trial period for new users? Information was usually found from the services’ web page. The variable is included in the final study.

15. **Operating system:** Which operating systems does the service support? Is there an application for the service? This information was found easily and the variable is included in the final study.

16. **Quality:** Are the videos or cartoons available with different qualities? It was difficult to find detailed information. In the end the variable did not seem that relevant, and it was eliminated in the first round.

17. **Other:** This column included any other relevant information, which was found by looking for information related to the other variables. For example: “New comics become digital six months after the publication of the paper version.”

Some of the players were also eliminated, because there was not enough information available in English. This was the case with some local players, for example most information about Filmin was in Spanish. After eliminating some of the players and variables in the first round, the second round was to decide the final players for the study. The idea was to include different service concepts in order to have as many differences as possible. After the first round, it was pretty clear which services have enough information available on publicly available sources. The amount of information was one of the main reasons in the final decision. The fact is that many of big players defining the market, operate in a fairly

similar way. It was not relevant to include some smaller players with a difference service concept, because their affect on the overall market is very minimal. Four video and four cartoon players were chosen to be examined further.

In the third round, more information was gathered from the eight services based on the IISI<sup>n</sup> model. The background organizations were examined in more detail, information about the technology behind the services was gathered, and any relevant information related to the market environment was included. The biggest part was to investigate how the services actually work. This included going through the services' web pages very carefully and gathering all information related to the service concept before concluding the information to a simplified bigger picture about the service. A lot of time was also used for understanding the different user groups and their relationship related to each service. All of the information in the third round was gathered to a separate Word file and the text was very raw. All relevant data was edited into the final form in the fourth round, and this information is included in this study.

Besides gathering data from publicly available sources, I also had the chance to interview the COO of Tribl Oy, which is the company behind a service called Cartoon Vault. Cartoon Vault will be discussed further in Section 5, but it is a new player combining videos, comics and a merchandise store. Because the service has not been launched yet, the only way to obtain information about the company is via the management of Tribl Oy. The interview was carried out by telephone interview using Apple's iPhone 5s. The call was recorded with the iPhone 5s for the purpose of data collection and Apple's MacBook Air was used for taking notes. The interview took place in February 2017. Finnish is the native language of both parties, so it was used as the interview language. Hence, not all the things said in the interview translate directly into English in this study, but this does not affect any of the results. The interview was very straightforward, as Tribl Oy's COO had very good knowledge about the existing market and had direct answers to all of my questions. Most of the questions were open-ended, and sometimes the answer was followed by an additional question, which sometimes had choices instead of being open-ended.

## **4.2 Methods**

The research approach taken in this study has been empirical, using a qualitative method. The field of study of information systems is under constant change due to innovation and

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improving technology.

According to Benbasat, Goldstein and Mead (1987), there are three reasons why a qualitative case study is an effective strategy in the IS field. First, the strategy allows the study of information systems and platforms in a natural setting, combining theories with practice. Second, a case-study strategy gives clear answers to the questions “how” and “why”. These are critical answers when it comes to understanding complex processes and the nature of service platforms. Finally, a case-study strategy is a good way to study a field in which not many earlier studies have taken place. This is exactly the case with video and digital comic service platforms, where there are very few, if any, earlier studies about the platforms themselves.

The aim of this study is to examine four existing OTT video service platforms and four digital comic service platforms, creating a picture of the existing market situation. This is done by using the gathered data in the IISI<sup>n</sup> model, which Tuunainen et al. (2011) have successfully used earlier in analysing service platforms. Because of the reasons mentioned earlier and the fact that a similar research method has been successful in the past, the empirical part of this study is completed as a multiple case study, using a qualitative method.

### **4.3 Limitations of the study**

There are three main limitations of this study, which should be considered when analysing the results. This section describes these limitations.

The first limitation of this study is the small sample size of the analysed platforms. This study involves four video platforms, four comic platforms and a new platform concept entering the market. Even though the platform services analysed in the study are major players in the market, there are plenty of other video and comic service platforms which are not considered in this study. The problem is that there is a very limited amount of publicly available information available from many of the smaller players in the market. The big players analysed set the bar for the market, but having more information and data about several smaller players would give this study a wider perspective.

The second limitation is that for all existing players the data has been gathered from publicly available sources on the Internet. There is no guarantee that all of the information

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gathered is exactly as described and it needs to be interpreted cautiously. However, I am confident that the big picture for each player is clear, since the analysis method is not focused on very detailed information or data.

The third limitation is that the video platform and digital comic industries keep changing at a very fast pace. New players keep entering the market with slightly different service concepts and existing players keep developing, and, for example, changing the pricing model. The information in this study is valid for now, but might be at least partly out of date after a fairly short period of time.



## 5 EMPIRICAL STUDY

In this section the empirical study and findings are presented. Section 5.1 concerns four different video service platforms analysed by using the IISI<sup>n</sup> model. Section 5.2 continues with digital comic service platforms and Section 5.3 introduces a new service innovation platform that combines videos, comics and merchandise.

### 5.1 Video Cases

This section concerns four different video service platforms: Crackle, Netflix, Hulu and Amazon Video. The analysis was carried out by using the IISI<sup>n</sup> model. Cross-comparison of the players together with further analysis of the video platform industry is presented in Section 6.

#### 5.1.1 Crackle

##### A. Service Innovation Platform

**Organization.** Crackle is an online video service owned by the Sony Corporation. The Sony Corporation, commonly referred to as Sony, was founded in Japan in 1946, is headquartered in Tokyo, Japan and is publicly traded in the NYSE and TYO. In 2015 Sony’s revenue was JPY 8,105,712 million and as of March 31, 2016, the company had approximately 125,300 employees. Sony is best known for its electronics, gaming and entertainment services. The Crackle video service is a subsidiary of Sony Pictures Entertainment, which is the American entertainment subsidiary of Sony Entertainment Inc. The latter is a subsidiary of the main parent Sony Corporation (Sony Corporation, 2016).

**Technology.** Crackle uses the You.i Engine, which is an app platform. Sony has no direct ownership of the company and has bought the Crackle platform from You.i TV. (“Crackle – you.i TV,” 2017)

**Market environment.** Crackle is an international player. As a global player Crackle competes mainly against other international players. Currently the service is available for users in North America, South America, Central America and Australasia. A total of 21 countries are covered and three different languages are available: English, Spanish and

Portuguese. The company has stated that their main market is clearly the USA. Crackle also used to be available in the UK, but Sony decided to exit the market in 2014. The company did not provide a specific reason for the exit (“Crackle,” n.d.).

On their company website, Crackle states that Netflix, Hulu and Amazon Video are its main competitors. Of these services, only Netflix operates in South America and Australasia. This supports the fact that Crackle truly has a high focus towards the US market. Crackle is the only AVOD (advertising video on-demand) service out of its main competitors, which is a good way for the service to differentiate. Crackle states that the service has around 18 million monthly users in the USA (“Crackle,” n.d.).

## B. Service Concept

**Consumer side.** The user can start viewing content on Crackle without creating an account, but registering with the service is also possible. After registering the user can edit the service for a more personalized user experience, which is not possible without registration. The user can create a favourite video list called “Watchlist”, where videos can be saved or watched another time (“Crackle,” n.d.).

Crackle has subsidized the service totally for users on the consumer side, meaning that they do not have to pay anything for using the service. However, the service is an AVOD service, meaning that the users have to watch advertisements at various points of each video. As advertisements have negative network effects on search-engine users (Dew & Read, 2007), the same goes for Crackle’s users. The more advertisements the service has, the more unpleasant use of the service becomes for the consumer side-users. On the other hand, the more content Crackle offers, the more tempting it is for users on the consumer side. This is an example of a positive network effect (Katz & Shapiro, 1985). Even though Crackle is an AVOD service, subscription is still available. This works in a different manner compared with traditional monthly subscription. In Crackle the consumer side user can choose to subscribe to receive an email or an in-service update about a particular show, film or any new video in a certain channel (“Crackle,” n.d.).

A good example of the consumer side’s Same Side Networks effects is Crackle’s social sharing feature. Users can sign into Crackle via their Facebook account and share their favourite videos and comments on Facebook. Sharing ratings of different contents is also possible. Users can choose if their social sharing actions become public on Facebook or not.

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Rating and sharing videos adds value for the users in the same user group and can therefore be seen as positively correlated Same Side Network effects (Tuunainen & Tuunanen, 2011).

Crackle also has a new kind of function for the consumer side, which is fairly uncommon within OTT video services. The idea is to make it easier to find content on the service. When a user opens Crackle, a different full-screen video starts playing immediately, depending on when login occurs, giving the feeling of a traditional TV (“Crackle,” n.d.).

**Content-provider side.** Crackle does not charge consumers for using the service. However, it makes income through advertisements (“Crackle,” n.d.).

Most of Crackle’s provided content is original content of Sony. In other words Crackle itself is the main content provider for the platform. Crackle splits the content provided on the service into different genres. Besides offering traditional films and TV series, Crackle has also produced and distributed original programmes directly to the service. “Comedians in Cars Getting Coffee” and “Sports Jeopardy!” are two original content shows to mention. Content in Crackle is refreshed every month, with titles being added and taken down (“Crackle,” n.d.).

Even though most of the content provided in Crackle is owned by Sony, the company still uses several content partners for additional material. The Walt Disney Company, Miramax, Warner Bros and Universal Studios are examples of big and well-known content partners. Sony pays licensing fees for content partners in order to show their content in Crackle. Details of these licensing deals are not publicly available (“Crackle,” n.d.).

### C. Client Interface

**Consumer side.** The contact point between Crackle and individual users, who watch videos via Crackle without paying anything to the company is the Crackle service itself, in other words the You.i TV platform, which Sony has bought from the company You.i TV. The Crackle platform is available for several devices including computers, laptops, smart phones, tablets, smart TVs, gaming consoles and streaming players (“Supported Devices,” n.d.).

**Content-provider side.** There is no direct contact point between the service provider and the content providers in the platform. As a matter of fact, Sony itself is the biggest content

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provider and the owner of the platform. Sony does licensing deals with additional content providers, which are done by the companies' management. The same goes between Sony and Crackle's advertisers, which are also clients of the service.

#### D. Delivery System

**Consumer side.** WLAN (Wireless Local Area Network) and mobile phone data are used in order to deliver the service. Unlimited mobile data for a fixed price is available in very few countries, and in those countries future limits are expected as well. WLAN access can often be found free of charge but is usually unlimited for a fixed price.

The devices supported by Crackle must have mobile data or WLAN access in order to provide consumer access to the platform. Most physical devices are supported by other OTT video services as well, which makes "multi-homing", the use of several platforms, easy for consumers (Tuunainen et al., 2011).

**Content-provider side.** Sony controls the Crackle platform and acts as the link between the platform and content providers. Content providers do not need access to the platform, because they simply provide Sony with the content and receive licensing fees. Sony takes care that the content becomes available in the Crackle Platform. Therefore there is no "digital delivery system" when it comes to the content-provider side.

### 5.1.2 Hulu

#### A. Service Innovation Platform

**Organization.** Hulu is a service owned by Hulu LLC, a joint venture between the Turner Broadcasting System, the Fox Entertainment Group and NBCUniversal. These companies are owned by Time Warner, The Walt Disney Company, and Comcast. Hulu LLC was founded in 2006 and is headquartered in Los Angeles, United States. In 2015 the company created revenue of around USD 1.6 billion (52% from subscriptions, 48% from advertising) (Deadline, n.d.).

**Technology.** Hulu uses CSS (cascading style sheets) together with JavaScript as the layout for the site. Flash player as well as the browsers of the users' computers is used for video and control (Crawford, 2009).

**Market environment.** Hulu is available for consumers in the USA and Japan in four different languages: English, Japanese, Portuguese and Korean. The company has stated that they believe the service concept is suitable for every market and there is room for further expansion. Canada and the UK have been on the list, but so far the service is not available outside the USA and Japan. The USA is Hulu's main market, where its main competitors are traditional big OTT video players: Netflix, Amazon Video and Crackle. Hulu states that they have around 12 million subscribers (Kartnakes, 2016).

#### B. Service Concept

**Consumer side.** In order to use the service, the consumer has to create an account. This can be done by creating the account directly via Facebook or by filling in the necessary information. Hulu is a combined SVOD (subscription video on-demand) and AVOD service. This means that clients can subscribe, paying a monthly fee, and there is also totally free content available. However, the weight is on the subscription model.

Hulu offers subscribers two options. For USD 7.99 per month users can view all content with limited commercials, whereas completely commercial-free subscription costs USD 11.99 per month. Looking at the price alone, the subscription with limited commercials is more attractive for consumers, though the negative network effects created by advertisements push consumers towards the more expensive commercial-free subscription (Dew & Read, 2007). The AVOD service works as an introduction for clients and the limited free content encourages users to pay for subscription. This is an example of a positive network effect, where more content creates a more pleasant user experience. Hulu does not include the possibility of consumers rating the films and shows in the service. This limits the same-side network effects created by the service (Hulu, n.d.).

Hulu offers a few bundles in order to attract new subscribers. The first seven days of using the service is free for subscribers, not depending on which plan the user decides to choose. An additional SHOWTIME add-on is also available for an additional cost of USD 8.99 per month. The first seven days are also free in the add-on. (Hulu, n.d.)

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**Content-provider side.** Most of the content in Hulu is oriented towards television series, showing current and past episodes of series from its owners’ respective television networks. Besides this, Hulu has over 400 content partners. There is no direct link between the service platform and the content provider. In other words the content providers do not have accounts in Hulu and do not have control over the platform. The platform is completely controlled by Hulu LLC. Content providers have individual contracts with Hulu LLC, which are not publicly available. Hulu also creates original programming directly to the service, with “Battleground” and “Day in the Life” being some of the most popular in the service’s history. Advertisers also play an important role in the platform, as advertisement revenue is nearly half of Hulu LLC’s total revenue. Advertisers also make deals directly with Hulu LLC and do not have control over the platform itself (Crunchbase, 2017).

#### C. Client Interface

**Consumer side.** The contact point between the service provider and consumers is the Hulu platform itself. Hulu supports several different kinds of devices including computers, laptops, mobile phones, tablets, gaming consoles, media players and smart TVs (Hulu, n.d.).

**Content-provider side.** There is no direct contact point between the service provider and the content providers in the platform. As a matter of fact, the owners of the platform also provide most of the content for the Hulu service. Hulu LLC has licensing deals with additional content providers, which are carried out by the companies’ management. The same goes for Hulu LLC and Hulu’s advertisers, which are also clients of the service.

#### D. Delivery System.

**Consumer side.** As with Crackle, a WLAN (Wireless Local Area Network) or mobile phone network is required. Unlimited mobile data for a fixed price is available in very few countries, and in those countries future limits are expected as well. WLANs can often be found free of charge and are usually unlimited for a fixed price. Devices supported by Hulu must have mobile data or WLAN access in order to give consumer access to the platform.

**Content-provider side.** Hulu LLC has total control over the Hulu platform and acts as the link between the platform and content providers. Content providers do not need direct access to the platform, because they do content deals with Hulu LLC, which takes care of the content distribution via the Hulu platform. Therefore there is no “digital delivery system” when it comes to the content-provider side.

### 5.1.3 Netflix

#### A. Service Innovation Platform

**Organization.** Netflix is a service specializing in and providing streaming media and video on demand online, owned by Netflix Inc. Netflix Inc., commonly referred to as Netflix, was established in the USA in 1997. The company is headquartered in Los Gatos, California and listed in NASDAQ. In 2015 Netflix had revenue of USD 6.78 billion and approximately 3,500 employees. Netflix originally started as a DVD by mail business, which is still a minor part of the company’s overall business (Netflix, 2016).

**Technology.** Netflix operates on a cloud platform based on Amazon Web Services (AWS). All major systems, including all customer-facing services, have been in the cloud platform since 2015. Netflix finds the AWS cloud service to be a reliable tool to serve its client base all over the world (Izrailevsky, 2016).

**Market environment.** Netflix is the biggest operator in the OTT video service market. Netflix is available for users worldwide except for mainland China, Syria, North Korea and Crimea. Officially the service supports 18 different languages.

Because of its worldwide presence, Netflix competes directly or indirectly with all other OTT video services available. Over half of Netflix’s total of 86 million users are in the USA, so it is fair to say that the US market is the most important for the company. Hence Netflix’s main competitors are also in the US market. These include the big SVOD services Hulu and Amazon Video together with Sony’s AVOD service, Crackle.

#### B. Service Concept

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**Consumer side.** Netflix is an SVOD service, meaning that it charges monthly subscription fees from its users. There are three different levels that users can subscribe to. The Basic subscription costs EUR 7.99 per month, allowing one screen to be watched at one time. Compared with the more expensive subscription models, the Basic level does not include HD availability. The Standard level subscription costs EUR 9.99 month, allowing two screens to be watched at the same time. Also, HD is available. The most expensive Premium subscription costs EUR 11.00 per month. In addition to HD, Ultra HD is available, and four screens can be viewed at the same time. Netflix offers new users a 30-day free trial as a bundle to any subscription. Pricing varies by country depending on the currency, but considering the exchanges rates, there are no big differences between countries (Netflix, n.d.).

Netflix requires all users to create an account before using the service. After creating the account and deciding on the subscription model, users have access to all TV series, documentaries and films in the service library. The content is streamed directly via the Netflix service, and also some of the content is available to download and be viewed later without Internet access. Each Netflix account can include up to five profiles. These profiles can be modified in terms of ratings, recently watched list, language preference and personalized film and TV show suggestions (Netflix, n.d.).

Users can rate the TV series and films with a rating range of one to five stars. The rating system is a good example of the consumer side’s Same Side Network effects (Tuunainen & Tuunanen, 2011). Netflix is totally advertisement-free for consumers, so no negative Network Effects take place (Dew & Read, 2007).

**Content-provider side.** As with other big OTT video players, Netflix also has a large amount of content providers. Dreamworks, Gaumont, Starz, the RTL Group and Amazon.com are a few big names to mention. Interestingly, Amazon.com is one of the biggest content providers for Netflix, but they also have their own OTT video service, Amazon Video, which is a main competitor of Netflix. Netflix pays licensing fees to its content providers for streaming rights of their content. Therefore there is no direct link between Netflix and content providers in the service platform itself (Leung, 2016).

Like Crackle and Hulu, Netflix also has original content available in the service. This means that the show has been made for direct release in Netflix and is not available anywhere

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else. Original content is funded differently compared with licensing deals. When signing a project, Netflix usually pays the money upfront and in most cases orders two seasons in advance. “House of Cards” and “Orange is the New Black” are two well-known and popular original content series available only via Netflix (Leung, 2016).

### C. Client Interface

**Consumer side.** As with most OTT video services, the interface between the service provider and customers is the Netflix platform itself. There are several devices that support the Netflix platform: Smart TVs, streaming media players, game consoles, set-top boxes, Blu-ray players, smart phones, tablets, computers and laptops. Many supported devices have a built-in connection for Netflix, and others work through Netflix’s website. The large amount of Netflix users creates positive network effects for the device designers, which makes it more tempting to design a device with a built-in Netflix connection (Katz & Shapiro, 1985).

**Content-provider side.** Content providers do not have access to the Netflix platform. Netflix has total control of the platform and decides which TV shows and films are included in the content library. If a content provider wants their content to be available in Netflix, they need to make a licensing deal with Netflix Inc.

### D. Delivery System

**Consumer side.** Mobile phone networks and WLANs can be used as the delivery method. The delivery speed is highly dependent on the network provider. The Netflix platform supports a very large range of devices, all of which need to be connected to the Internet in order to make the delivery process work. It is also possible to download some of the content in Netflix to the user’s device and watch it later without Internet connection, but the shows available via this method are limited.

**Content-provider side.** Netflix has total control over the service platform, meaning that there is no direct linking service between the consumer and the content provider. Content providers do not have direct access to the Netflix platform, as Netflix Inc. is the contact point for them. After a licensing deal Netflix Inc. adds the content to the service platform.

## 5.1.4 Amazon Video

### A. Service Innovation Platform

**Organization.** Amazon Video is an OTT video service owned, operated and developed by Amazon.com. Amazon.com, commonly referred to as Amazon, was established in the USA in 1994, has headquarters in Seattle, Washington and is listed in NASDAQ. In 2015 Amazon had revenue of USD 107 billion and as of December 31, 2015 had approximately 230,000 employees. Amazon is mainly known for being the largest Internet-based retailer in the world (Amazon, 2016).

**Technology.** Amazon recommends using a web browser supporting an HTML5 player in order to access Amazon Video content. Microsoft Silverlight is an additional plug-in which can be used if HTML5 player support is not available. When using the Amazon Video app, an iOS- or Android-supported device is required (Amazon, 2017).

**Market environment.** Amazon Video is available in over 200 countries and territories globally. The only main market where Amazon Video is not available is China, because of the tight control of Internet and Western cultural imports. As a global player, Amazon Video competes against all other OTT video services, but Netflix and Hulu can be seen as its main competitors (Vincent, 2016).

### B. Service Concept

**Consumer side.** Amazon Video has two different service concepts for consumers: The TVOD (Transactional video on-demand) service called Amazon Video and the SVOD services called Prime Video.

Users can purchase or rent single television shows or films through the TVOD service. This requires an account, but no monthly fees need to be paid by the users. Rentals start at USD 2.99 and users have 30 days from when they rent to start watching, and 24 hours to finish once they have started watching the film or TV show. Once the rental is over, the film

will disappear from the user's library. Buying a film or TV show is more expensive, but allows the user to watch the content as many times as they want (Amazon, 2017).

Prime Video was originally available only for Amazon Prime users as a bundle. Amazon Prime account prices vary per country, but in the USA the price is USD 99 per year or USD 10.99 per month. The Prime account includes several other Amazon services besides the videos, for example free shipping on every product bought via Amazon. Prime Video is still available for all Amazon Prime users, but in countries where Amazon Prime is not available, Prime Video access can be bought separately. Prices vary between countries, and, for example, in India the price is a lot lower compared with that in the US (Sathe, 2016).

Prime Video does not include all of the content available in Amazon Video, as some films and TV shows can only be bought or rented. On the other hand Amazon also has original content which can only be viewed by Prime Video users.

**Content-provider side.** Content providers do not have access to the Amazon Video platform. Amazon has total control of the platform and decides which TV shows and films are included in the content library. If a content provider wants their content to be available in Amazon Video, they need to make a licensing deal with Amazon.

### C. Client Interface

**Consumer side.** The interface between the service provider Amazon and the end-users is the Amazon Video service itself. Users can access the service with a web browser that supports an HTML5 player or Microsoft Silverlight. Users can also access Amazon Video via the Amazon Video app, which is available for iOS- and Android-supported devices. The app can be downloaded from the App Store and Google Play (Amazon, 2017).

**Content-provider side.** Content providers do not have an interface with the service provider through the Amazon Video platform.

### D. Delivery System

**Consumer side.** Mobile phone networks and WLANs can be used as delivery methods. The Amazon Video platform supports a very large range of devices, which need to be connected to the Internet in order to make the delivery process work. Devices need to have a web browser that supports an HTML5 player or Microsoft Silverlight. An alternative way is to use an up-to-date iOS- or Android-supported device. (Amazon, 2017).

**Content-provider side.** Amazon has total control over the Amazon Video platform and acts as the link between the platform and content providers. Content providers do not need direct access to the platform, because they do content deals with Amazon, which takes care of the content distribution via the Amazon Video platform.

## 5.2 Comic Cases

This section covers four different digital comic service platforms: Marvel Unlimited, DC Comics, comiXology and Tapastic. Analysis has been carried out by using the IISI<sup>n</sup> model. Cross-comparison of the players together with further analysis of the video platform industry is covered in Section 6.

### 5.2.1 Marvel Unlimited

#### A. Service Innovation Platform

**Organization.** Marvel Unlimited is an online comic service of Marvel Comics, which is a subsidiary of Marvel Entertainment, LLC. The company was established in the United States in 1998. Marvel Entertainment is headquartered in New York City and has 255 employees. It is an entertainment company offering several products: comics, animations, television, film, video games and books. Besides products, Marvel Entertainment offers licensing services, for example selling comic character figure rights to a toy manufacturer (The Walt Disney Company, 2016).

Marvel Entertainment, LLC is a fully owned subsidiary of The Walt Disney Company, which acquired Marvel Entertainment for USD 4 billion in 2009. The Walt Disney Company, commonly referred to as Disney, was established in Los Angeles, California in 1923. The company made USD 52.46 billion in revenue in 2015 and has 180,000 employees (The Walt Disney Company, 2016).

**Technology.** Marvel Unlimited is a service that delivers comics digitally through a user's desktop web browser and the Marvel Unlimited mobile app. Marvel Unlimited uses a digital platform created by comiXology, which will be explained in more detail in the comiXology review (Marvel, 2017).

**Market environment.** Marvel Unlimited is available for users globally, but the Unlimited Plus subscription is only available for users in the USA. Marvel Unlimited's main competitors are DC Comics and comiXology, but comiXology is also an important retailer for Marvel. Marvel Unlimited has a competitive advantage against comXology Unlimited by

being available to users globally, whereas comiXology Unlimited is only available for users in the USA.

### B. Service Concept

**Consumer side.** Marvel Unlimited offers over 17,000 past issues of Marvel comics in a digital form. Spiderman, Ironman and X-Men are a few of Marvel's well-known comics to mention. It is a subscription service giving consumers the chance to subscribe for one month or a year at a time. The service costs USD 9.99 per month and USD 69 per year. It is also possible to purchase a Marvel Unlimited Plus subscription for USD 99 per year. Unlimited Plus includes several bundles, for example a free action figure, exclusive comics, 15% off in the Marvel Digital Comics Shop and 10% off merchandise at MarvelShop.com. The service requires creating an account, which can be done through a Facebook account, Google account or with an email address. The catch in Marvel Unlimited is that all content available is created by Marvel. In other words, if a user does not like Marvel characters, it is not a good service to subscribe to. The content becomes available in the service six months after the paper issues have been released. This way Marvel prevents users from getting access to all new issues included in the Marvel Unlimited subscription. The service also offers a few new issues weekly, which are free as previews. The subscription continues automatically at the end of the term, unless the user decides to cancel it through their Marvel Unlimited account (Marvel, 2017).

**Content-provider side.** All content in Marvel Unlimited is created by Marvel, so the company does not have any extra costs related to content or licensing. Being the content provider and the platform owner, Marvel has full control over the platform. They can decide what issues to release in the service, and when, since any external contracts do not have an effect on the service.

### C. Client Interface

**Consumer side.** The interface between the service provider and the client is the platform itself. Access to the platform can be done through the Marvel Unlimited web page or the Marvel Unlimited App, which is available to download from App Store or Google Play. The app is compatible with devices running iOS 6.0+ and Android devices running OS 4.0+.

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**Content-provider side.** Marvel, as the only content provider, has full control over its own platform, so there is no actual interface between service provider and content provider.

#### D. Delivery System

**Consumer side.** Mobile phone networks and WLANs can be used as delivery methods. Delivery speed is highly dependent on the network provider. The Marvel Unlimited platform supports a very large range of devices, which need to be connected to the Internet in order to make the delivery process work. The Marvel Unlimited app is only available for iPhone, iPad and Android devices with an up-to-date user system. The app allows users to save up to 12 comics in their mobile devices to read offline without an Internet connection (Marvel, 2017).

**Content-provider side.** As the platform owner and the only content provider, Marvel is in charge of the content available in the service. Marvel makes digital versions of its issues and uploads them to Marvel Unlimited once they see the time is right. Currently, new issues come to the service six months after publication.

## 5.2.2 DC Comics

#### A. Service Innovation Platform

**Organization.** DC Comics, Inc. is the comic publishing unit of DC Entertainment, best known for the characters Batman and Superman. The company was established in the United States in 1934. DC Entertainment is headquartered in Burbank, California and besides comic books the company is involved in film, television, consumer products, home entertainment and interactive games. Besides publishing thousands of comic books annually, DC Entertainment also publishes graphic novels and magazines, being the largest English-language comic publisher in the world (Time Warner Inc., 2016).

DC Entertainment is a subsidiary of Warner Bros., which is a division of (publicly traded) Time Warner, Inc. Time Warner is listed in the NYSE and had revenue of USD 28

billion in 2015. The company employs approximately 24,800 people (Time Warner Inc., 2017).

**Technology.** DC Comics has digital comics available on its website readdcenterentertainment.com and through the DC Comics Android and iOS apps. Both platforms use the digital platform of comiXology, which will be explained in more detail in the comiXology review (DC Comics, 2017).

**Market environment.** DC Comics sells its digital issues globally and therefore competes against all other digital comic platforms. The competition is highest in the USA, where other big publishers including Dark Horse, Image and Marvel also sell their digital issues. ComiXology is an important retailer for DC Comics, but at the same time it is a direct competitor. DC Comics does not have a subscription service, which gives a competitive advantage to Marvel Unlimited and comiXology Unlimited (Pipedream Comics, 2015).

## B. Service Concept

**Consumer side.** DC Comics has a different approach to its digital comic sales in comparison with Marvel. DC Comics does not offer consumers an unlimited subscription service, meaning that issues have to be bought separately, making it a transactional service. The company sells its digital content through its own website readdcenterentertainment.com as well as via the DC Comics app, which is available for iOS- and Android-supported devices. Both methods require creating an account. There is no delay in the digital versions, since digital versions of comics are published on the same day as paper versions. The DC Comics app allows users to share what they are reading through Facebook and Twitter (Castle, 2016).

Prices start from USD 0.99 per issue. As regards some older issues the whole series can be bought for USD 10.99 and up depending on the series and the number of issues. Users have the possibility to subscribe to an entire series, meaning that the new issue price is charged from the user's account once available (DC Comics, 2017).

Besides sources owned by DC Comics, the company sells its digital content through several E-book stores such as comiXology, iBookstore and Amazon Kindle store. DC Comics has separate deals with different E-book stores (DC Comics, 2017).



**Content-provider side.** All content in readdcenterentertainment.com and the DC Comics app is created by DC Comics, so the company does not have any extra costs related to content or licensing. Being the content provider and the platform owner, DC Comics has full control over the platform. They can decide what issues to release in the service and when, since any external contracts do not have an effect on the service. In various E-book stores, DC Comics is a content provider and does not have control over those platforms.

### C. Client Interface

**Consumer side.** The interface between the service provider and the client is the readdcenterentertainment.com website and the DC Comics app. Access to the website can be done through a web browser and the app is available in App Store and Google Play.

**Content-provider side.** DC Comics is the only content provider in readdcenterentertainment.com and the DC Comics app, so there is no actual interface between the service provider and the content provider.

### D. Delivery System

**Consumer side.** As for most OTT services, the delivery method for readdcenterentertainment.com and the DC Comics app is similar. A regular Internet connection is required, either through a mobile phone network or WLAN. Any device with an up-to-date web browser can be used to view content on readdcenterentertainment.com, whereas the app requires devices with up-to-date iOS or Android user systems. These include a wide range of tablets, smartphones and other devices.

**Content-provider side.** The DC Comics app and readdcenterentertainment.com are linking services between DC Comics and the consumer. The consumer goes to the website or downloads the app in order to read digital versions of DC Comics' content.

### 5.2.3 ComiXology

#### A. Service Innovation Platform

**Organization.** ComiXology is a cloud-based digital comic distribution platform owned by Amazon.com. The company is based in New York City, with operations in Los Angeles, Seattle and Paris (Amazon, 2016).

Amazon.com, commonly referred to as Amazon, was established in the USA in 1994, has headquarters in Seattle, Washington and is listed in NASDAQ. In 2015 Amazon had revenue of USD 107 billion and as of December 31, 2015 had approximately 230,000 employees. Amazon is mainly known for being the largest Internet-based retailer in the world (Amazon, 2016).

**Technology.** The digital comic platform created by comiXology is used in the company’s own applications. It is also the engine used by most major comic-book publishers, including the earlier-mentioned DC Comics and Marvel Comics. ComiXology has patented its Guided View reading technology, which “allows readers to view a comic on a panel-by-panel basis suitable for mobile devices in a way that mimics the natural motion of the user’s eye through the comic.” (Comixology, 2014).

**Market Environment.** ComiXology is available in all parts of the world, except for the comiXology Unlimited service, which is available only in the US market. ComiXology competes against all other digital comic retailers when it comes to selling individual issues on a transactional basis. The situation is interesting, because most publishers sell their content through their own platforms, but also through comiXology. This means that comiXology is a competitor of the publishers with which it co-operates. ComiXology Unlimited is available only in the USA and the main competitor is the only other similar service, i.e. Marvel Unlimited. (Karcz, 2016).

#### B. Service Concept

**Consumer side.** Users need to create an account in order to have access to any content available through the comiXology app or the comiXology website. With an account, users can purchase single issues, subscribe to a series (where their account is charged whenever a

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new issue is available) or subscribe to comiXology unlimited for a monthly fee. Single issues of digital comics mostly sell at between USD 0.99 and USD 4.99. ComiXology sells a selection of titles from several publishers, including Image Comics, Dark Horse and the already-mentioned Marvel and DC Comics. The comics can be viewed with a web browser or through the comiXology app, which is available for iOS and Android devices (Comixology, 2017).

ComiXology Unlimited is a subscription service available to users for a monthly fee of USD 5.99. ComiXology offers users a 30-day free trial. The service offers thousands of comics from all of the publishers with whom comiXology co-operates, except for DC Comics and Marvel. Unlike Marvel Unlimited, there is no delay between the release of paper and digital issues, but the catch is that the material is somewhat limited. From many series only the first two or three issues are available in the comiXology Unlimited service, and if the user wants to finish the series, the rest of the issues need to be bought separately (Comixology, 2017).

**Content-provider side.** ComiXology has a large amount of publishers as content providers, including DC Comics and Marvel. The company is an important retailer for all publishers, because the download volumes from comiXology are very high. ComiXology has separate deals with all content providers and the content providers do not use comiXology directly. Many of the publishers sell their comics through their own platforms as well. Such platforms have often been created by comiXology, so the company makes money by commissions received by selling publishers' content, and one-off fees for creating modified platforms to content providers (Popoca, 2015).

### C. Client Interface

**Consumer side.** The interface between consumers and comiXology is the comiXology website and the comiXology app. The website can be accessed with any web browser. The app is available for iOS and Android devices and can be downloaded from App Store and Google Play.

**Content-provider side.** Content providers do not have access to the comiXology platform, and comiXology has full control over the platform. Separate deals about the content are made between comiXology and publishers.

#### D. Delivery System

**Consumer side.** End-users need to have an active Internet connection, either through a mobile network or WLAN. Any device with a web browser can be used to access the comiXology website, but using the app requires a device with an iOS or Android operating system. The operating system also needs to be up-to-date in order for the app to work.

**Content-provider side.** Content providers do not use the comiXology platform, so no digital delivery takes place. Publishers deliver their content to comiXology, which is then added to the service platform. This delivery does not occur through the platform.

## 5.2.4 Tapastic

#### A. Service Innovation Platform

**Organization.** The company behind Tapastic is Tapas Media, which was founded in 2012 by South Korean entrepreneur Chang Kim. Tapas Media is a start-up company currently employing around 15 people. The company is headquartered in San Francisco, but also has operations in Seoul. Tapas Media currently focuses on growth instead of maximizing revenue. The company has received a total of USD 4.4 million in funding from six different investors.

**Technology.** The server-side programming language used at Tapastic is Java and the client-side programming language is JavaScript. The image file formats used are Joint Photographic Experts Group (JPEG), Portable Network Graphics (PNG) and Graphic Interchange Format (GIF) (W3 techs, n.d.).

**Market environment.** The market environment for Tapastic differs from that of the three other comic services reviewed here. Tapastic does not have deals with big publishers, but

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instead it offers alternative content from individual comic creators. The service is available for users globally, so it competes against all other comic platforms directly or indirectly, including Marvel, DC Comics and comiXology. However, it can be argued that the main competitors are other similar comic services, such as LINE Webtoon and Lezhin Comics.

## B. Service Concept

**Consumer side.** Reading comics on Tapastic is free for end-users and there are over 200,000 comic book episodes available from over 9,000 creators (Tapas Media, 2017). Using the service does not require creation of an account, but more features are available for users with an account. An account can be created by signing in via Facebook or by using an email address. With an account it is possible to subscribe to individual creators and receive notice when a new piece of work is available. Besides this, users can give comments, and like and share creators' work, which create positive network effects for both creators and other end-users. Users can also buy content directly from Tapastic Premium creators. Users can also give donations to their favourite creators (Tapastic, 2017).

Tapastic is also an interactive community with a forum, instead of being only a platform for comic reading. Users can discuss different comics and creators can seek fan feedback.

**Content-provider side.** Tapastic is known as the “YouTube of comics”, meaning that anyone can be a content provider for the platform. Creators can upload their comics to Tapastic without having to use any external software. The platform gives individual creators the possibility to be recognized and to monetize their content. Tapastic offers three different monetization options for content creators: Premium, Support, and Ad Revenue. Creators have to apply for the Premium option. If they are selected, their work will be sold directly to end-users with 50% sales commission. The support model gives end-users the possibility to donate any amount they wish to a creator on a monthly basis. Tapastic has advertisements on the platform and revenue received is shared with creators. Creators receive 70% of total ad. revenue and the split between creators is based on the amount of end-users seeing advertisements via creators' work. Tapastic keeps 30% of the ad. revenue to cover its operating costs. All revenues from Premium, Support, and Ad Revenue are combined and

paid to creators via PayPal. A minimum revenue of USD 25.00 needs to be collected before a payout can be made (Tapastic, 2017).

Tapastic provides additional features for comic creators in order improve their content. These features include, for example, graphs and charts to visualize the comic series' performance as well as SoundCloud Integration to add music with the reading experience. Tapastic is not a publisher and therefore does not claim any ownership rights to creators' content. Content creators can also interact with fans though the forum and receive comments and likes, and have their work shared among other end-users (Tapastic, 2017).

### C. Client Interface

**Consumer side.** The interface between end-users and Tapastic is the Tapastic website or the Tapastic app. Any web browser-supported device can be used and the Tapastic app is available for iOS and Android devices and can be downloaded from App Store and Google Play.

**Content-provider side.** Unlike in other comic platforms reviewed in this study, content providers create an account and upload their work directly to the platform. Tapastic also offers content creators in-platform features to improve their comics. These features include, for example, graphs and charts to visualize the comic series performance as well as SoundCloud Integration to add music to the reading experience.

### D. Delivery System

**Consumer side.** The delivery method used by Tapastic is almost the same as with all the other OTT services reviewed in this study. A standard Internet connection is required, either through a mobile phone network or WLAN. Tapastic content can be viewed with any device that supports a web browser. The app can be used with devices that have an up-to-date Android or iOS operating system.

**Content-provider side.** In Tapastic's case, content providers also need to have an active Internet connection and a device supporting a web browser. Content can also be uploaded

through the app, which requires a device with an up-to-date Android or iOS operating system.

## 5.3 Case Cartoon Vault

This section concerns a new service platform, which combines videos, cartoons and related merchandise. The service is called Cartoon Vault and it has been analysed by using the IISI<sup>n</sup> model. Information as gathered by interviewing Janne Lehtinen, the COO of Tribl Oy, which is the company behind Cartoon Vault. Further information about the service and comparison with the existing market is to be found in section 6.

### A. Service Innovation Platform

**Organization.** The company behind Cartoon Vault, Tribl Oy, was founded in 2014 with the name Outo Entertainment Oy, but the name was changed to Tribl Oy in late 2015. Tribl Oy is headquartered in Helsinki, but also has operations in New York City. The company has three employees, i.e. CEO, COO and a person in charge of marketing. Tribl Oy is a start-up and since the service has not been launched yet, it does not create any revenue. The company gathered EUR 500k of funding as investments, which has been mostly allocated to product development.

**Technology.** Janne Lehtinen stated in the interview that the technology of Cartoon Vault is not special compared with other services. There is no competitive advantage to Cartoon Vault, but no advantage to any of the competitors either. He said that the focus of Cartoon Vault is the unique platform concept rather than technology.

**Market environment.** Cartoon Vault is available to users worldwide. The idea is to spread European comic shows beyond local border limits and sell Disney comics via the platform to users all over the world. Cartoon Vault's operating model is closer to that of YouTube and similar services than to those of other video services reviewed in this study. However, Janne Lehtinen stated that Netflix and Amazon will be the biggest competitors in terms of user traffic.

## B. Service Concept

**Consumer side.** Using Cartoon Vault requires all end users to register and create an account. The account can be created either by connecting to the service via Facebook or traditionally by using an email address. Cartoon Vault is a unique service platform, which combines videos, cartoons and an integrated merchandise shop. On the video side, Cartoon Vault focuses purely on cartoons. It offers European cartoon series and films for end users. The main idea is to have the video service under a SVOD concept, which costs users between EUR 3.99 and EUR 4.99 per month. Some geographical changes might also take place. According to Janne Lehtinen, in some areas, for example in Russia, it is difficult to get users to subscribe for a service and therefore an AVOD model might be more suitable there. Pre-screening of advertisements is also being considered as a source of revenue. On the comic side Tribl Oy has a licensing deal for Disney’s comics and at least at the beginning the focus is purely on selling Disney comics on a transactional basis. Pricing for comics is similar to that among the existing players.

Users also have the possibility to buy merchandise related to the cartoon characters, videos of which are available on the service. One click on a link on the side of the video player takes the user to the merchandise shop, where merchandise related to that show can be bought.

Users can also give ratings to the shows and comics, which creates positive same-side network effects. In addition, users can discuss with each other on a forum and share their opinions and recommendations concerning content and content providers. According to Janne Lehtinen, the community of end users is a very important aspect of the whole service.

**Content-provider side.** On the video side, Tribl Oy has several content deals with European cartoon content providers and the company is looking for more quality content. Each content provider has a separate deal with Tribl Oy, but the idea is to create sustainable long-term partnerships where Cartoon Vault works as the distribution channel. Tribl Oy chooses its content providers carefully and really wants to co-operate with the content providers instead of just acting as a retailer. Video content providers will get back 60–70% of revenue created by subscription fees and advertisements. Janne Lehtinen stated that quality of the content is



very important, but deep co-operation with content providers can lead to even better results in the long run.

On the comic side Cartoon Vault will focus purely on selling digital Disney comics with a transactional fee. Tribl Oy will pay licensing fees to Disney, based on the amount of digital comic issues sold. Janne Lehtinen said that creating an all-inclusive subscription service for comics would not be financially sustainable.

Content providers do not access the Cartoon Platform themselves. All content is delivered to Tribl Oy, which will take care of uploading the content to the service.

Cartoon Vault also works as a distribution channel and market place for merchandise. Tribl Oy takes a 30% commission of revenue and the merchandise manufacturers receive 70%.

### C. Client Interface

**Consumer side.** The interface between the service provider Tribl Oy and consumers is the Cartoon Vault platform itself. The platform will be available via any web browser and there will also be an app for iOS devices, which can be downloaded from App Store. An app for Android devices will be available at a later stage. Other operating systems will be considered if the owner of the operating system is willing to help with funding.

**Content-provider side.** Content providers do not access the Cartoon Vault Platform themselves. All content is delivered to Tribl Oy, which will take care of uploading the content to the service.

### D. Delivery method

**Consumer side.** The delivery method for Cartoon Vault is similar to that of all the other video and comic services reviewed in this study. A standard Internet connection is required, either through a mobile phone network or WLAN. Cartoon Vault can be viewed with any device that supports a web browser. The app can be used with devices that have an up-to-date iOS operating system.

**Content-provider side.** Content providers do not use the Cartoon Vault platform, so no digital delivery takes place. Publishers deliver their content to Tribl Oy, which adds the content to the service platform.

## 6 DISCUSSION

This chapter goes through the findings of the empirical study. Section 6.1, the cross-comparison and summary of video cases, creates a view of the current video service platform market by assessing the differences and similarities of the existing players. Section 6.2, the cross-comparison and summary of comic cases, creates a view of the current comic service platform market by assessing the differences and similarities of the existing players. Section 6.3 compares a new service innovation platform, which combines videos, comics and merchandise with the existing players in both the video and comic markets. It also defines what makes the new service unique and how it will differentiate from the field once entering the market. Section 6.4 shortly explains the main contributions of this study.

### 6.1 Cross-comparison and summary of video cases

*Table 1: Summary of video service platforms*

	<b>Crackle</b>	<b>Hulu</b>	<b>Netflix</b>	<b>Amazon Video</b>
Owner	Sony Corporation	Hulu LLC	Netflix Inc.,	Amazon.com
Revenue model	AVOD	SVOD, AVOD	SVOD	SVOD, TVOD
Market served	21 countries	USA, Japan	Global	Global
Users	18 million monthly users in the USA	12 million subscribers	86 million	76 million
Content	Own and content partners	Over 400 content partners	Large amount of content providers	Large amount of content providers
Original content	Yes	Yes	Yes	Yes
Positive network effects	Medium, users can rate and share videos	Low, no rating of videos	Medium, users can rate videos	Medium, users can rate and review videos
Negative network effects	High, advertisements	Medium, limited to no advertisements	Low, no advertisements	Low, no advertisements

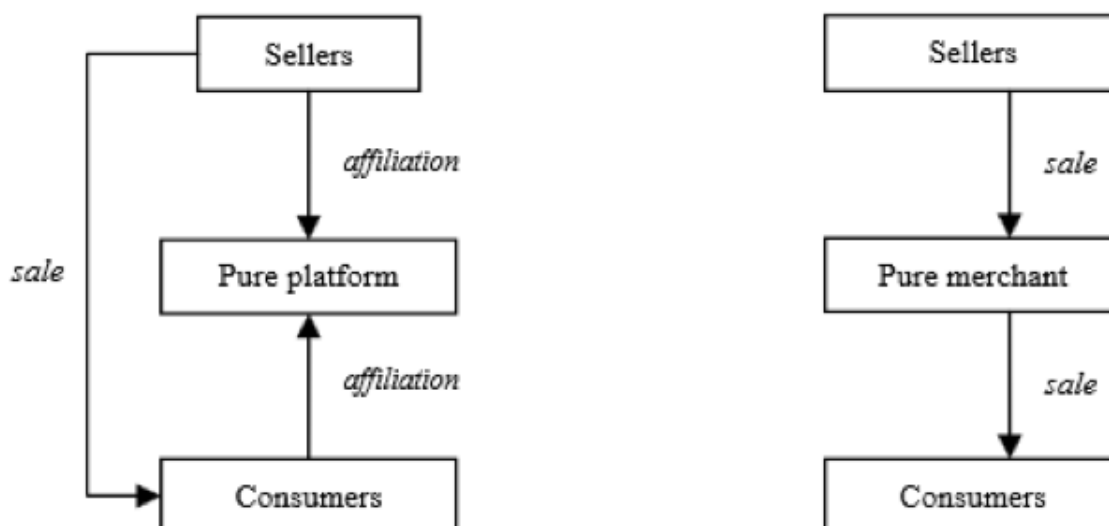
As Table 1 shows, all of the video platforms are owned and backed by large companies. The ultimate parent companies are big well-known listed names, which means that there are large resources that can be addressed to content, expansion and the service platform itself.

Revenue models vary between each video service platform. Crackle is an AVOD player, meaning that using the service is free for end-users and the revenue is made on advertisements. On the downside, users have to view a lot of advertisements, which makes using the service less pleasant. Hulu is a combined SVOD and AVOD player. End-users have a choice to subscribe for limited advertisements or pay a higher fee for a completely ad-free subscription. Netflix is a pure SVOD player, where subscription is the only option and no advertising takes place. Amazon Video is a combined SVOD and TVOD player, where some content is available as a bundle for Amazon Prime members. Some content can also be bought or rented on a transactional basis.

Crackle, Netflix and Amazon share a very wide global presence, whereas Hulu is available in the USA and Japan. Based on the findings, the USA is clearly the biggest market for video streaming and it is also the most important market for the players reviewed in this study. Naturally the competition is also higher in the USA than in other countries.

All of the services have a large amount of content available from several content providers. With the large amount of content, the studied video players have been able to capture tens of millions of regular users for their services. Each video service platform in this study has original content available. This means that the content is exclusive, unique and not available anywhere else. This is a way to keep loyal customers using the service.

The large amount of content is created by many content providers, which represent one side of the user groups in these platforms. End-users are another user group. Even though Table 1 does not show great results for network effects, cross-side network effects have made it possible to capture a large amount of end-users. What Rochet and Tirole (2002) said about credit cards, and Eisenmann et al. (2006) about shopping malls is also valid for video service platforms: the more service providers there are on the opposite side of the platform, the more attractive the platform becomes to consumers. All of the reviewed video players have succeeded well in creating this cross-side network effect.



**Figure 4. The difference between two-sided platforms and merchants (Hagiu, 2007).**

Some of the reviewed video players have solved the “chicken-and-egg problem” by using a lot of money on content in order to attract end-users. This requires a lot of resources, which all of the owners of the reviewed video service platforms have. Figure 4 shows the difference between a pure merchant and a pure platform. A pure merchant has full control of selling the sellers’ product to consumers, whereas a pure platform gives total control of the selling process to sellers (Hagiu, 2007). Considering how the “chicken-and-egg problem” has been solved, it can be argued that video service platforms lie somewhere in between pure merchants and pure platforms. The fact that content is bought from content providers and then sold to consumers, supports the merchant point of view. Yet there are, for example, licensing deals and revenue coming from advertisements, even though end-users consume the video products. This makes calling video service platforms pure merchants or pure platforms fairly difficult. Amazon, for example, already had a large amount of end-users before they started to offer a video service as a bundle to their retailing services. This method has heavy signs of platform envelopment (Eisenmann et al., 2011), which was discussed in more detail in Section 2.

There are no big differences in technology, delivery or client interfaces. The video platforms use different forms of technology, but it cannot really be seen when using the platform. This is because, based on the findings, the effect of technology on the platforms’ performance is minimal. All of the platforms are available for many different devices and operating systems, so no true competitive advantage is created through delivery and the client interface. This makes multi-homing for end-users likely, because different services are

available even though they use only one device. Therefore, the switching cost to another video service platform is low. All of the services require an active Internet connection at most times, even though some of the video services allow watching limited content offline.

The video service platforms reviewed in this study do not take full benefit of same-side network effects of their user groups. Hulu does not allow users to rate videos, which keeps the positive same-side network effect within end-users to the minimum. Netflix allows users to rate videos on a one to five scale, which gives other end-users value in choosing content to view. Amazon Video goes a little further, also allowing users to write reviews about the videos, which other end-users can read. Crackle makes the most of same-side network effects by making it easy to share content through social media, besides rating the videos. Overall, none of the video service platforms reviewed can be seen as a community, which would make users stay, because of high positive same-side network effects. Based on the findings, most value is created by cross-side network effects, which in the case of video service platforms mostly means the available content.

## 6.2 Cross-comparison and summary of comic cases

Table 2: Summary of digital comic service platforms

	<b>Marvel Unlimited</b>	<b>DC Comics</b>	<b>comiXology</b>	<b>Tapastic</b>
Owner	Marvel Entertainment, LLC	DC Entertainment	Amazon.com	Tapas Media
Revenue model	Subscription	Transactional	Transactional, Subscription (USA only)	Transactional commission, advertisements
Market served	Global	Global	Global, USA	Global
Content	Over 17,000 past issues of Marvel comics	Content of DC Comics	Most major publishers	Over 9,000 individual content creators
Positive network effects	Low, lack of affiliation	Low, lack of affiliation	Low, lack of affiliation	High, own community

As Table 2 shows, three of the four digital comic platforms are owned and backed by large companies. The ultimate parent companies are big well-known listed names, which means that substantial resources can be addressed to content, expansion and the service platform itself. The only exception is Tapastic, which is owned by a start-up company called Tapas Media.

The revenue set-up in digital comic platforms differs somewhat from that in video service platforms. For videos the trend has been to move towards a subscription model, where all content is available for a fixed price. This has not been seen as a sustainable and profitable solution within the digital comic industry. The only pure subscription service is Marvel Unlimited, but Marvel’s content is available in the service only after six months of the original paper-copy release. This is a way to protect the sales of new content. DC Comics sells its digital comics on a purely transactional basis. ComiXology is mainly known as a retailer for several comic publishers, but it has recently opened a subscription service called comiXology Unlimited. The catch is that content available is fairly limited and only a few issues of many series are included in the service. Even though comiXology is a retailer for both Marvel and DC Comics, neither publisher’s comics are included in the subscription service. Tapastic makes most of its revenue with advertisements, and reading most content is free for end-users. Some content providers are chosen and supported by Tapastic, and their work is sold directly to end-users on a transactional basis. Tapastic takes a commission of the sales.

All of the digital comic platforms are available globally, except for comiXology’s Unlimited service, which is available only in the USA. The USA is the biggest market for digital comics, and most comic publishers are based in the country. All of the reviewed digital comic platforms compete against each other, and face competition from all other digital comic services.

The reviewed digital service platforms have a large amount of content available, as Table 2 shows. The difference comes from the content providers. Marvel Unlimited and DC Comics have only their own content available on their platform services. ComiXology’s content is created by most of the major comic publishers including Marvel and DC Comics. ComiXology does not create any content itself, yet it is an important retailer for most of the content providers. Tapastic does not co-operate with any of the major comic publishers. The service is based on individual content providers, and anyone is allowed to publish content on

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Tapastic.

The theories of Rochet and Tirole (2002) about credit cards, and Eisenmann et al. (2006) about shopping malls are also valid for digital comic platforms. The more content available in the services, the more likely it is that end-users will start using the service. As depicted in Figure 4, Marvel and DC Comics can be seen as the seller and the merchant, because they create their own content and own the platform. ComiXology is a merchant, because it is the retailer between content providers and end-users. Tapastic has the most signs of being a pure platform, because of the affiliation with content providers and end-users (Hagiu, 2007).

Based on the current findings, technology does not play a big role in digital comic service platforms. Marvel Unlimited, DC Comics and ComiXology use comiXology's platform technology. Tapas Media has created the platform of Tapastic. No true competitive advantage is gained with technology. The delivery method and client interface are also similar among the digital comic platforms reviewed. The services are available on many devices and operating systems. This makes switching costs low and multi-homing easy.

The digital comic service platforms take even less advantage of positive same-side network effects than video service platforms. Marvel Unlimited, DC Comics and comiXology do not allow end-users to rate or review the content available. They do not have any channels where end-users could discuss with each other about the service or content, or give any recommendations. This greatly limits the positive same-side network effects and the benefits they create. Tapastic is the positive exception in this sense. The main idea of the platform is to serve as a community besides sharing content providers' content with end-users. End-users can follow individual content providers, rate their content, and give direct feedback about different comics. End-users can also support content providers they like by giving voluntary donations. Marvel Unlimited's, DC Comics' and comiXology's network effects are limited by the amount of content, which is a cross-side network effect. Tapastic might not be able to challenge purely with content, but it is the clear winner when it comes to creating positive network effects – especially same-side network effects within different user groups.



## 6.3 Cartoon Vault compared with existing video and comic service platforms

Table 3: Summary of Cartoon Vault

	<b>Cartoon Vault</b>
Owner	Tribl Oy
Revenue model	SVOD, AVOD, Transactional
Market served	Global
Users	N/A
Content	Content partners
Positive network effects	High, community and co-operation with content providers
Negative network effects	Low/Medium, limited advertisements

Unlike most of the existing video and comic platforms, Cartoon Vault is owned and backed by a small start-up company. The only other service owned by a start-up company is Tapastic. Tapas Media has around 15 employees, compared with Tribl Oy's three.

As Table 3 shows, Cartoon Vault will use a combined revenue model including subscription for videos, pre-screening advertisements, and a transactional model for Disney comics. This is in line with the existing field. According to Tribl Oy's COO, Janne Lehtinen, subscription is expected to be the most profitable revenue model for videos, but transactional sales work better as regards comics. Cartoon Vault also creates additional revenue by taking commission from merchandise sales related to characters in videos or comics available in the platform. The selling point for merchandise is the platform itself. Janne Lehtinen also said that the platform is also suitable for services other than cartoons, comics and merchandise.

Technology licensing for other service providers could be another revenue model in the future, but this is not envisioned in the early stages.

Cartoon Vault will be available to users worldwide. The idea is to spread European comic shows beyond local border limits and sell Disney comics via the platform to customers all over the world. Cartoon Vault's operating model is closer to that of YouTube and other similar services than to other video services reviewed in this study. However, Janne Lehtinen said that Netflix and Amazon will be the biggest competitors in terms of user traffic.

On the video side, Tribl Oy has several content deals with European cartoon content providers and the company is looking for more high-quality content. Each content provider has a separate deal with Tribl Oy. On the comic side, Cartoon Vault will focus purely on selling digital Disney comics with a transactional fee. Tribl Oy will pay licensing fees to Disney, based on the amount of digital comic issues sold. Janne Lehtinen stated that quality is preferred over quantity when it comes to content.

What Rochet and Tirole (2002) said about credit cards, and Eisenmann et al. (2006) about shopping malls is valid for Cartoon Vault: the more content available in the service, the more attractive the platform will be for end-users. Cartoon Vault has tried to solve the "chicken-and-egg-problem" by creating sustainable deals with considered content providers. The target has been European comic creators for video, and a licensing deal with Disney for cartoons.

According to Janne Lehtinen, the technology of Cartoon Vault is not special compared with other services. There is no technological competitive advantage for Cartoon Vault, but no advantage for any of the competitors either. He said that the focus of Cartoon Vault is the unique platform concept rather than technology. Cartoon Vault will be available via any web browser and there will also be an app for iOS devices, which can be downloaded from App Store. An app for Android devices will be available at a later stage. Other operating systems will be considered if the owner of the operating system is willing to help with funding. The lack of Android support could cost Cartoon Vault some users in the early stage. For Android users the switching cost to start using Cartoon Vault would be high. However, the switching cost from Cartoon Vault to other platforms is low, because all other players reviewed are supported by the same operating systems.

As depicted in Figure 4, Cartoon Vault can be seen to be nearly a pure platform, because the affiliation with content providers and consumers is high. Janne Lehtinen said that content is very important, but a more interactive service concept compared with those of the existing players could create a true competitive advantage. Therefore, Cartoon Vault's focus is on the CCC model, i.e. content, community and commerce. End-users can give ratings to the shows and comics, which creates positive same-side network effects. End-users can also discuss with each other on a forum and share their opinions and recommendations of different contents and content providers. According to Janne Lehtinen, the community of end-users is a very important aspect of the whole service. Tribl Oy chooses its content providers carefully and really wants to co-operate with them instead of just acting as a retailer. Video content providers will receive 60–70% of revenue created by subscription fees and advertisements. Janne Lehtinen stated that the quality of the content is very important, but deep co-operation with the content provider can lead to even better results in the long run.

## 6.4 Main contributions

If we look at platform services in general, video and comic service platforms are not unique. They are platforms, which offer one or several services to a targeted group of users. Like any other platform services, these services require end-users in order to survive. The traditional way for digital entertainment services is to offer attractive content, which end-users are willing to consume. This is monetized by charging the end-users directly or making them watch advertisements, which brings in revenue for the service owners. The biggest video players buy content from content providers and sell it to end-users for a monthly subscription price. The service chain is simple and the platform plays nearly a role of a pure merchant. In the comic side, the revenue model is mostly transactional. The biggest players sell or resell content to end users, and the role of a comic platform is very close to a pure merchant. There are some upcoming players, which try benefit more from network effects, and create more interaction between users and content providers. Yet this is not the case with the current biggest and most successful players.

The IISI<sup>n</sup> model resulted to be an excellent tool for analysing entertainment-focused service platforms. Using the model gives a clear understanding of how these services operate, what are the different user groups, and what is the relationship between these different user groups. It also takes into consideration the organization behind the service, technology involved, and the market environment of the service. Based on this, it can be said that the

IISI<sup>n</sup> model works as a very good tool for analysing and comparing platform services, where networks effects play a key role. On the downside it is difficult to define the financial success of an entertainment-focused service platform by using the IISI<sup>n</sup> model. The model takes into consideration how these services make money, and frames for success can be estimated through network effects as well as user amounts. Yet this information does not always directly link to financial success. In order to give a more detailed picture about a platform's financial success, some measurements of income, costs and profitability could be added into the model.

## 7 CONCLUSIONS

Very little, if any, previous research has been carried out into video and digital comic service platforms. The aim of this study was to create a view of the existing video and comic service platform markets. The idea was to find some of the main players in these video and comic services, and study them in more detail. A total of eight platforms (four video and four comic) were reviewed, using publicly available sources on the Internet. In addition, one interview was completed related to a new service platform concept combining cartoons, comics and merchandise. A literature review was followed by theoretical background, which further led to the selection of a framework used to analyse the video and comic cases in order to find answers to the research questions.

The first question was: “What similarities and differences do the existing entertainment-focused video and comic services have and how do they differentiate from each other?” The answer to this question was that most of the existing video and comic service platforms are owned and backed by large listed companies. Technology does not play a big role, but instead the focus is on content. The existing players use different kinds of revenue models. These can be split to subscription, transactional, and advertisement-based models. All services create positive cross-side network effects, but only a few players take advantage of positive same-side network effects. The affiliation between content providers and end-users is somewhat limited for most players. Many services are available in different countries, but the US market is most important for all the existing players reviewed in this study. Some of the players create their own content while acting as platform owners. Original content is becoming more common within video service platforms, but this trend is not seen in digital comic service platforms. Platform theories presented by Rochet and Tirole (2002) and Eisenmann et al. (2006) are still valid for today’s video and comic service platforms.

The second question was: “What similarities will a new player entering the entertainment-focused service market share with the existing players, and how does the new player try to differentiate in order to capture its share of the market?” The main way for the new player to differentiate is via a unique platform combining cartoons, comics and merchandise. As a matter of fact a similar service concept does not exist in the market. The decision to focus only on cartoons on the video side can also be seen as a way to differentiate. The company behind Cartoon Vault is a small start-up, which was the case for only one of

the existing players. Cartoon Vault will use a combination of revenue models including subscription, transactional and advertisement models. Some of the existing players use a single revenue model, but some use a combination, as Cartoon Vault will do. The decision to sell merchandise directly from the video or comic platform is a totally new innovation, which none of the existing players offer. Technology and delivery do not differ from those in the current field, meaning that Cartoon Vault will be facing the challenges of multi-homing, because of low switching costs. The focus on affiliation with content providers and end-users will be a competitive advantage for Cartoon Vault. According to Tribl Oy’s COO, the service will focus on quality over quantity when it comes to content. Besides good content it is important to co-operate with the content providers and truly try to help potential creators to deliver their work. The COO also mentioned the CCC model (content, community and commerce) as their way to operate. All aspects are important, and focusing on them will create an edge, since most existing competitors focus only on one or two of them.

Overall, the video and comic service platforms are highly competitive and it is not easy for a new player to break in. Cartoon Vault has been able to create a very unique platform concept, which has a chance to succeed in the existing market. The findings of this study do not guarantee any success, and the limitations must be considered when drawing conclusions. The first limitation is the small sample size of the analysed platforms. There are many other video and comic service platforms, which are not considered in this study. Secondly, most of the data has been gathered from publicly available sources in the Internet. This should not affect the big picture, but some of the information could be false or incomplete. Finally, the video and digital service platform industries keep changing at a fast pace. This means that a lot of information presented in this study could be outdated fairly quickly. Hence, future studies on this topic should involve more players than in the current study. In addition, interviews with existing players would be very informative, since the information gathered from publicly available sources is somewhat limited. Finally, more research on drivers affecting the success of video and comic service platforms would be beneficial.

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## Appendix A: IISI<sup>n</sup> Model Used for Analysis

Based on the IISI<sup>n</sup> model, the video and comic service platforms were analysed in the following way:

- A. The Innovation Platform analysis was split into three parts: **organization, technology** and **market environment**.
  
- B. Service Concept was analysed by looking at the **consumer side** and **content-provider side**.
  
- C. Client Interface was analysed by looking at the **consumer side** and **content-provider side**.
  
- D. Delivery System was analysed by looking at **consumer side** and **content-provider side**.



## Appendix B: Interview Questions

### Background information:

Name:

Company:

Your role/title in the company:

Number of employees in the company:

Revenue:

Name of the service:

### Open Questions:

In which locations does the company have operations?

How is the company funded?

What is the operating model of the service platform?

What types of content does the platform offer?

What is the revenue model and how is the service priced?

Are there alternative revenue models for the future?

Which devices can the platform be used with?

Why would a consumer start using the service?

Does the service require consumers to create an account?

What services does the platform offer to content providers?

Who do you see as the main competitors?

What technology does the platform use?

Can your name, the company's name, name of the service, and the information you have provided be used as part of a research project (Pro Gradu) for Aalto University School of Business?