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Gaming as a Service (GaaS)

Investigating if GaaS is a business model or strategy, the potential definition and design and its long-term strategic impact

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Abstract

Gaming as a Service is not defined in existing research. The lack of a formal definition leads to an ambiguity between its function as a business model and the long-term strategy of the firm. The purpose and aim of this study is to investigate the definition of GaaS business model, distinguishing its function from the strategy. Furthermore, the key components of the model are established based on those identified by previous scholars. To investigate this, a qualitative research approach was chosen and a multiple case study of four companies engaged in the development of video games was conducted. The analysis of the findings was further verified through secondary data collection. The data collected from four in-depth interviews were analysed and combined to compare and contrast the findings from the selected case companies. The empirical findings suggest that the essence of the GaaS business model is to capture customer value and achieve a long-term relationship with the user community. The components of this model are identified with the purpose of delivering the value. Hence, Gaming as a Service is a value centric business model separate from strategy. Moreover, one can conclude that the strategic impact of GaaS could be influenced and developed by further technology innovation in the video game industry.

Keywords: Strategic management, Business Model Innovation, Video Game Industry, Gaming as a Service, Business Model Design, Business Model Components, Business model for technology, GaaS

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1 Introduction

In the following chapter, the hybrid model between product and services is introduced.

Secondly, the background of video games and initial business models is illustrated. Thirdly the topic of our study, Gaming as a Service is explained in detail. An overview of the research problem is presented with the purpose of the research. Furthermore, the research limitation of the study is conveyed.

1.1 Hybrid model in the video game industry

The economic output a firm produce is the focal point of its economic activity. A product can be considered a tangible or intangible good, and this is an essential concept as tangible goods are usually referred to as products, while intangible goods are referred to as services (Avlonitis & Papastathopoulou 2006). As technology continues to advance, firms are combining their product and service offering. Shankar, Berry and Dotzel (2009) concluded that the hybrid of the two components, products and service, benefits the firm as it increases the combined economic value of the good based on the complementary and independent characteristics of the good. They also stated that the product and service hybrid could work together as a compliment or be independent of each other, with the combination extending the value of the good, where the product life is being extended indefinitely by the add on service (Shankar, Berry, & Dotzel, 2009).

Since 2014, video games have transformed to combine both a product and service offering (Clark, 2019). The “service” in video games is an extension of the product life cycle (Cashman, 2014). However, as firms change their strategy to combine the hybrid of product and service in video games, a new business model has arisen to complement it, known as Gaming as a Service. Academics have not defined the term, and there is confusion among those in the industry if it is a strategy or a business model.

This study will investigate if Gaming as a Service (GaaS) is a business model, create a potential definition, identify the key components of the model, and the impact of this business model for the long-term strategy of firms in the video gaming industry. This is an important area to research in strategic management, as Chen (2009) argued that the business model literature is generic and not industry exclusive, which ignores the additional complexities arising in the video gaming industry. Furthermore, defining the model and its strategic importance has implications for the innovation strategy and the development of products and services in the video game industry. More information about the development of video gaming can be found in Appendix A.

1.2 Video game background and initial business models

The strategy and business model of video games have been ever-changing since their inception in the early 1970's, consistent with technological advances that have been prevalent in the industry. It is essential to understand the definition of video games, the inception of video games and the separation between video game developer and publisher to understand the GaaS business model. For the purpose of this study, a video game is defined by the Oxford Dictionary as a “game played by electronically manipulating images produced by a

computer program on a monitor or other display” (Oxford, 2019). Computer scientists pioneered video games as an educational tool on the first computers (Herz, 1997). After its successful viewing as a quirky science project, video games became more mainstream and entered popular culture in the early 1970’s (Wolf, 2008). The first consumer video games were localized in arcades, and their popularity among gamers is evident as over four billion dollars was spent on arcade gaming machines in 1982 (Egli et al., 1984). Video Games during this period were produced and designed specifically for this competitive gaming style, and the game design ensured that consumers continued spending, which enabled a steady revenue stream for the firms (Egli and Meyers, 1984). It was not until the creation and innovation of the video game console that the business model changed. (Schilling, 2003).

The shift of gaming platforms from the arcade machine to home consoles changed the business model. The model saw video games as a single-use payment for the product. The consumers would pay the upfront price with no additional need for any further financial investment (Sotamaa & Karppi, 2010). Games were available from traditional brick and mortar stores, where games were packaged and sold on discs (Dillon & Cohen, 2013). This business model remained until the introduction of complementary enabling technology, such as the internet, allowed for companies to seek out and source other methods to create value. The term video game shifted and changed from a technical classification to an entertainment category. As of 2018, there are over two billion users of video games (Wijman, 2019).

Throughout the lifespan of video games, the industry has been divided between two core functions, the video game developers and the video game publisher. The game developers focus on the creative aspect of designing the game, while the publisher focuses on the distribution aspects of the game (Trowe, 2018). It is an important distinction to make as both

the publisher and developer have an impact on designing the business model of the game and strategy.

1.3 Gaming as a Service (GaaS) in gaming industry

In the period since the first gaming system, the video gaming industry remains in a constant state of evolution and growth since its creation, morphing since its conception to keep pace with the ever-increasing technological changes concurrently with its counterparts (Cohendet, Grandadam, Mehouchi and Simon, 2018). However, it has advanced considerably in the past decade, excelling past the developments of earlier platforms, systems and games (Cai, Chen, Leung 2014). With the generations of new technological improvements, innovation and increased device usage, GaaS in particular has emerged to capture the new value created with technological advances. GaaS is a popular term used within the industry to describe the present business strategy of video games companies, where video games were once static and unchangeable are now in a constant state of evolution (Bagga, 2011).

The hybrid of the product and service is most evident in the lifespan of games. The strategy treats video games as a service by radically extending their life span (Stuckenberg et al., 2011). As a result, most video games can never be ultimately finished, and players remain engaged much longer than traditional games, creating a lifetime value (Manel et al. 2017). Kultima and Stenros (2010) argued that consistent updates mean that there are no longer video games, only services. With their boundaries ever-changing and flexible, the intent is to keep users engaged over a more prolonged period, and as a result, provides a consistent revenue stream for the firm.

1.3.1 Enabling Technology and GaaS Methods

Various advances in technology and infrastructure have enabled the GaaS model to emerge. The long-term strategy of companies shifted and morphed to complement and utilize emerging technology similar to other traditional product life cycles and incremental developments.

Casadesus-Masanell and Ricart (2010) state that technological advances and increased availability of communications and internet technology constitute an important source of the rise of GaaS innovation. The internet has been an enabling technology to this, allowing games to receive updates and editions post-launch (Manel et al., 2017). Bagga (2011) also agreed that the internet and communications led to the GaaS model, but the way consumers can pay also resulted in its growth and implementation. The reduction in the friction between payment methods in-game payments allowed consumers to purchase games seamlessly and in-game products with minimal hassle.

Sotamaa and Karppi (2010) stated that there were two main drivers behind the rise of GaaS between 2008 and 2010. The first reason was the expansion of digital services through e-commerce distribution and subscription-based sales. The second was the increase in the casual and social gaming consumers creating a mass market. These innovations did not just alter the economic models of the game industry, but also revolutionized game design (Kultima & Stenros, 2010). Video game styles changed to accommodate an increasing market size. Many games have been streamlined or socialized to open them to a mass market, which can be seen with the increase in video game users (Sotamaa & Karppi, 2010).

1.3.2 Development of GaaS methods

Throughout the advancements in video game technology, companies sought further avenues to capture additional value from varying customer groups within the gaming community. The Gaming as a Service element takes many strategic forms in video games, with each element focusing on capturing more value from the consumer. This strategy came to prominence around 2014, and since then, companies have been adapting this model to their games (Clark, 2019).

Clark (2019) describes the addition of loot boxes, subscriptions, season passes and downloadable content as forms of the revenue capturing GaaS strategy currently in implementation by video game companies. The subscription-based revenue model was the first time a form of GaaS was introduced to players. The popular game “World of Warcraft” was the first to conceive and implement this revenue model, offering in-game service offerings along with a monthly subscription model (Lee, 2013). The success of this revenue model led to companies releasing additional content post launch of the game. GaaS evolved to include pre-paying for the additional content offered (Alha, Koskinen, Paavilainen, Hamari & Kinnunen, 2014). Alha et al. (2014) also discussed how post-game content was used as a strategy to keep players held into games after its release, and the consumers would be committed by the initial financial investment and willing to invest in post-launch content. An extension of the pre-order strategy was “Premium Games” or special editions of the video games, considered a form of price discrimination by firms due to the varying price points between the basic and premium game (Alha et al., 2014).

1.3.3 GaaS and the impact for consumers and organizations

The new business model has had an impact on both consumers and firms. Bagga (2011) stated that it is suitable for consumers as they can now invest their time and money in fewer games.

The consumers can spend money to invest and advance their in-game experience, increasing revenue for business past the initial release period. The GaaS model also enables those of different incomes and playstyles to commit to the game as they please (Bagga, 2011). In turn, this continued investment allows companies to devote themselves to a fewer game of a higher quality.

The companies in the industry have also benefited along with consumers from the adoption of the new model. It incorporates additional development and production costs that have accrued throughout the years as technology increases, and the retail price of video games has remained stable as overall industry profits decline (Bagga, 2011). As a result, companies justify the increasing use of the strategy as a means to offset the additional costs. It allows companies to identify the different segments of gamers, offering them different price points and allowing them to monetize all customer segments (Alha et al. 2014).

However, users and consumers of video games claim that companies utilizing the model are continuously exploiting aspects of the game to increase revenue (Alha et al. 2014). The predatory nature of the model forces the user to continuously purchase aspects of a video game they have already paid. The consumers dislike the fact that companies are deliberately removing portions of the games to introduce later in the game's lifecycle for an additional fee (Alha et al., 2014). The strategy of a minimal viable product is associated with the GaaS model, which portions of the game are purposely removed to be sold to the consumer at a later date (Clark, 2019). Clark (2019), further stated the inclusion of revenue capture methods such as microtransactions in fully paid games has caused further anger from consumers, as they are no longer fully complete products, with many systems such as progression locked behind the GaaS business model paywalls. However, the backlash from consumers has not caused a

reduction in companies implementing GaaS features and innovations, as companies continue to push the limits to discover what additional value they can extract from consumers.

1.4 Aims, Objectives and Problem Statement

There is an ubiquity of the term GaaS, whether it is a business model or strategy and its impact on the foundations of the video game industry. It is an important element to study as the business model is a core aspect of strategic management (Baden-Fuller and Morgan, 2010). The research aim is motivated by the desire to investigate the definition of the GaaS business model and the potential effects of the business model on the gaming industry.

The development of business model theory in strategic management is usually limited to traditional industries, and generic “one size fits all approaches.” Although some scholars (e.g., Porter 2001; Amit and Zott 2012 and Teece 2010) have mentioned that the emergence of the internet has changed some industries, research has rarely focused on the video game industry. As more video game companies understand the untapped value creation, it may become their long-term overarching strategy as they continuously innovate new methods to capture revenue. The game developers and publishers must look beyond what limitations were previously imposed by past technology, and embrace the dynamic future that is rapidly approaching, as can be seen, outlined in our introduction. Firms in the gaming industry must be prepared to understand the impact of technological change, such as augmented reality (AR) and virtual reality (VR). We also set out to discover the challenges that this model will bring.

The research stems from the absence of academic studies on the GaaS business model. The aim of this study is to make a contribution to the business model theory and develop it in terms of the gaming industry. Moreover, business model innovation is a significant opportunity for the company to demonstrate success and create new value. Therefore, companies in the gaming industry, scholars, business and gaming consumers will be of benefit to the study. There has also been debate amongst those in the industry if games as a service is a strategic change or a change in marketing patterns (Sotamaa & Karppi, 2010).

1.5 Research Purpose and Research Questions

The research purpose is important to study, as the video game industry is now more the most profitable entertainment industry in the world (Argenio, 2018). Exploring business models has been described as a rich agenda for business by Baden-Fuller and Mangemation (2013). Furthermore, the rapidly changing situation combined with technology innovation and business model shift makes this industry more meaningful to study from a strategic perspective.

Specifically, the study looks to answer the research question

“What is the definition and business model design of Gaming as a Service if it is a business model, and what is the strategic impact of this business mode?”

The research question leads rise to the following three sub-questions

1. Is GaaS a business model or a strategy?
2. What are the key components of GaaS model?

3. What is the long term strategic impact for firms of the identified business models key components identified in sub question 2?

1.6 Research Limitations

This study by its design has inherent limitations. The video gaming market is innovative, meaning that this study represents a view at the point in time at which the research was conducted. Limitations may have occurred due to the commercially sensitivity nature of the data gathered in interviews in our case study. There is understandably a concern from employees surrounding the commercial concerns of the information gathered, which could potentially limit discussion. The sample size our case study is four companies, and of the four companies, three of them are Swedish firms, although their products are produced for a global market. The study is therefore limited by both geography and sample size. A further limitation is the interview period is one hour for each case, so we have to ensure the key questions are answered. Another problem that is that the interviewees are not as aware of academic literature for the business model. They may not know components or refer to them by informal titles known internally within the organization.

Moreover, the video gaming industry can be divided into different categories, such as developer and publisher, and this study has chosen to focus on the developer aspect of GaaS in this vast industry which is significantly influenced by the business model.

Theoretically, the gaming industry is a unique subject as it is different from other media and internet industries, which has attracted the attention of scholars. There are only a few scholars

that have conducted in-depth research on video games, and they have primarily been from a social and cultural perspective. Hence, some definitions and classification may have a bias if not specifically focused on video games.

At the moment it is an undefined term by academics, only discussed informally amongst those involved in the industry with few giving a clear definition of the new business model, so much so that some within the industry such as the popular MCV gaming reporters feel it has lost its meaning (MCV, 2014).

2 Literature Review

In this chapter, the relevant literature for the study is reviewed. Firstly, the distinction between business model and Strategy is made from an academic perspective. Secondly, the definitions of the business model proposed by various authors is made. Thirdly, the business model design and components is presented. Fourthly, business model innovation is reviewed and discussed. Finally, literature on business models and technology is presented.

2.1 Business Model and Strategy

The business model and strategy are both underlying foundations of the firm but are important to distinguish as they both serve different purposes. The business model is as an essential concept for strategic management as it is considered the underlying structure of how firms capture value from the goods and services they produce. All companies have a business model, whether they explicitly state it or not (Chesbrough 2011; Teece 2010). However, there is confusion distinguishing the difference between a firm's business model and its strategy. Morris, Schindehutte and Allen (2005) stated that the diversity in the available definitions leads to “confusion in terminology, as a business model, strategy, business concept, revenue model, and economic model are often used interchangeably” (p. 726). Osterwalder, Pigneur and Tucci (2005, p. 2) state that literature conveys a broad “diversity of the understandings, usages and place of the business model in a firm”.

Further confusion amongst the distinction of the business model and strategy of the firm is that the business model is often discussed without any understanding of the roots, its role, and its potential (Osterwalder, Pigneur and Tucci, 2005). Teece (2010) claimed that the business model is more generic than strategy, and selecting a strategy is more of a granular task than designing a business model (Teece, 2010). Shafar, Smith and Linder (2005) state that while the business model is validation for strategic choice, it is not a strategy. Furthermore, Magretta (2002) considered that the business model and strategy are very similar in terms of conceptions. However, the business model does not factor in the critical dimension of competition (Margetta, 2002).

The literature reviewed has established three key elements that distinguish the business model from the strategy. Firstly, a distinction of the business model and the firm's strategy can be seen in how scholars have defined the two concepts. A definition of strategy outlined by Porter (2001, p.71) states that “the goal of strategy is to achieve a superior long-term return on investment”. The various definition of business models discussed in section 2.2 distinguishes it from the definition of the firm's strategy.

The second distinction between the business model and strategy is value creation. Multiple scholars such as Arend (2013), Casadesus-Masanell and Ricart (2010) and Sedden and Lewis (2003) have focused on value creation as the crucial distinction between the two concepts. Casadesus-Masanell and Ricart (2010) argued that the business model represents the firm's method of how it operates and creates value for stakeholders. They define the business model as the logic of the firm and the strategy as the choice of the business model through which the firm will compete in the marketplace (Casadesus-Masanell and Ricart, 2010). Arend (2013) also agreed that the business model is more a description of the firm's activities as opposed to a strategy, agreeing that it is an essential element for value creation. Sedden and Lewis (2003)

distinguished the two concepts describing the business model as the systematic method used to generate revenue in a company while the strategy is used to achieve core company objectives.

The third and final distinction of the business model and strategy, according to Hedman and Kalling (2003), is the business models description of the critical components of a given business. The key components of a business model are discussed further in section 2.3 Osterwalder, Pigneur and Tucci (2005) also agree with this point and convey that the business model is a “blueprint for how a company does business” (p. 4).

2.2 Business model Definitions

The concept of the business model is a recent addition to the academic literature, and its definitions and understanding have developed and evolved over time. The business model was first documented by Christensen (1997), but its origins have been traced back as early as 1957 (Osterwalder et al., 2005). In 2010, Teece stated that the business model had been around since pre-classical times; however, only with the advent of the internet in the mid-1990s that it began to receive attention and research from scholars. (Teece, 2010; Seddon & Lewis ,2003). It is important to define the business model as a path to understanding its roots, roles and potential use within the business strategy (Osterwalder et al., 2005)

A multitude of scholars and academics have attempted to define the business model adequately. The various definitions focus on the different aspects of the business model orientations and have been discussed in many domains such as E-commerce, information systems and strategy (Osterwalder et al., 2005). The definitions can be classified as the activity orientated/role orientated; customer oriented/value oriented.

The initial and early definitions by academics were activity and role orientated, such as Timmers (1998, p. 2), defining the business model as “an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors”. The early customer oriented and value definitions such as Amit & Zott, (2001) analyzed and explored the e-business model, providing a new definition focused on value adding properties of the business model as “the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities”(p. 511). In the further studies of the business model, Chesbrough and Rosenbloom (2002) focused further on the economic value and concluded that the business model was “the heuristic logic that connects technical potential with the realization of economic value” (p. 529). Magretta (2002, p. 4) consider business models are “stories that explain how enterprises work” and the business model “begins with an insight into human motivations and ends in a rich stream of profits” (p.3).

There has also been a focus on the external relationships of the business model. Zott and Amit (2010; p.216), defined the business model as a combination of the studies of Chesbrough and Rosenbloom (2002) and Teece (2010) as “a system of interdependent activities that transcends the focal firm and spans its boundaries”. Furthermore, Amit and Zott(2012, p.42) provided a more specific definition of a business model as “a system of interconnected and interdependent activities and that the business model determines the way the company does business with its customers, partners and vendors”. Eisenmann (2012) took a similar value creation approach defining the business model, from the perspective of entrepreneurs, as “an integrated array of distinctive choices specifying a new venture’s unique customer value proposition and how it will configure activities including those of its partners” (p. 1).

However the most widely cited definition of the business model is by Teece (2010), who defined the concept in a value/customer orientation as “a business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure if revenues and costs for the enterprise delivering value” (p.179).

Osterwalder et al. (2005) classified the definitions of a business model based on different incarnations into “activity/role-oriented business model definition” and “value/customer-oriented” business model definitions. Based on the classification of the definition provided by Osterwalder et al. (2005) and the previous review, Table 1 illustrates the development of the above definitions of the business model and their orientations.

Authors	Definitions	Definition Focus
Timmers (1998)	“an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors” (p. 2).	activity/role-oriented
Amit and Zott (2001)	The business model depicts “the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities” (p. 511).	value/customer-oriented

Chesbrough and Rosenbloom (2002)	“the heuristic logic that connects technical potential with the realization of economic value” (p. 529).	value/customer-oriented
Magretta, (2002)	Business models are “stories that explain how enterprises work. A good business model answers Peter Drucker’s age old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains? how we can deliver value to customers at an appropriate cost?”(p. 4).	activity/role-oriented
Teece (2010)	“A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure if revenues and costs for the enterprise delivering value”(p. 179).	value/customer-oriented
Casadesus-Masanell and Ricart (2010)	“the logic of the firm, how it operates to create value for its stakeholders and the strategy as the	value/customer-oriented

	choice of the business model through which the firm will compete in the marketplace” (p. 196)	
Zott and Amit (2010)	“a system of interdependent activities that transcends the focal firm and spans its boundaries” (p. 216).	activity/role-oriented
Amit and Zott (2012)	“a system of interconnected and interdependent activities and that the business model determines the way the company does business with its customers, partners and vendors” (Pg.42)	activity/role-oriented
Eisenmann (2012)	“an integrated array of distinctive choices specifying a new venture’s unique customer value proposition and how it will configure activities including those of its partners”(p. 1).	value/customer-oriented

Table 1: Definitions of scholars mentioned in literature section 2.2 (created by authors)

According to the previous literature that the definition of the business model is the first step in the evolution of a business model, Osterwalder et. al (2005) concluded the process of the business model evolution can be divided into five different phases. The phases are shown in

Figure 1 below.



Figure 1. The evolution of business model (Osterwalder et al, 2005)

2.3 Business Model Design and Components

A key strategic decision of the firm is how it will design the business model. The importance of design for an effective business model has been discussed by multiple scholars, as it is vital for the overall success of the product or service offering. Morris, Schindehutte and Allen (2005) noted that new products and services are more likely to fail due to an unsatisfactory business model design. Chesbrough (2010) also agreed with the crucial need for a strong business model design stating that a similar idea or technology taken to the market through different business models will yield different economic outcomes for the firms. The business model design and its components support the value proposition of the firm and are essential for the successful performance of new products and services.

Zott and Amit (2013) highlighted that the emphasis of the various business model components addresses the need for integrating theories to potentially heighten the understanding of the complex processes and mechanics that drive a successful business model. Zott and Amit (2013) stated that the emphasis of the various business model components addresses the need for integrating theories to potentially heighten the

understanding of the complex processes and mechanics that drive a successful business model. The design components of the business model have been expanded alongside the development of its definition. Scholars use the terms design elements, components, and building blocks interchangeably. According to Osterwalder (2004), the components are also referred to as “elements”, “building blocks”, “functions” or “attributes” of business models and used interchangeably in the descriptions by authors. He elaborated to state that the different descriptions of business model components are based on the depth and rigour of the previous literature, ranging from simple enumerations to detailed descriptions. As for the components of business model, scholars and authors (Lindgardt, Reeves, Stalk, & Deimler 2009; Johnson, Christensen and Kagermann, 2008) view components as an essential element while Osterwalder (2005) described the components as essential building blocks.

Shafear, Smith and Linder, (2005) found that there were over forty-two business model aspects, with some only appearing in one of the definitions that they studied. Shafear, Smith and Linder (2005) group the design elements into four key terms focusing on strategic choices value network, capture value and create value and value networks). They state a design of a business model should be simple enough so that it can be easily understood, communicated and remembered.

Morris, Schindehutte and Allen (2005) also proposed a framework for characterising the business model components. Their framework focused on three specific levels of decision making termed the “Foundation” “Proprietary” and “rules” levels with six basic decisions areas considered at each level. The first level, the foundation level, questions how the firm will create value and its value offering, this is similar to the capture value and value creation proposed by Shafear, Smith and Linder (2005). The second level, proprietary level, focuses on creating unique combinations and rules level establishes guiding principles, and is similar

to strategic choices outlined by Shafear, Smith and Linder (2005). The third level, the rule level, expands beyond Shafear, Smith and Linder (2005) establishes the need for guiding principles and rules of the ongoing strategic management of the business model. However, their research had a low number of participants, and may not be as accurate as Shafear, Smith and Linder (2005).

In later studies, Osterwalder (2005) included the four design components described by Shafear, Smith and Linder but added an additional five resulting in the business model being described “a set of nine building block” which are customer segments, value proposition, distribution channels, customer relationships, revenue streams, key resources, key activities, partner network and cost structure. Chesbrough (2010) proposed a similar business model design to Osterwalder (2005) and its components should fulfil seven functions for it to be successful. It must articulate the value proposition, identify the market segment, define the structure of the value chain, detail the revenue generation mechanism, estimate cost structure and profit potential, link suppliers and customers and formulate a strategy how it will be used to gain an advantage over competitors (Chesbrough, 2010).

Giesen, Riddleberger, Christner and Bell (2010) stated the elements which define a business model are the value delivered to customers or the job to done, the revenue generated including pricing model, the position of the company in the industry including its roles across the value chain and the value is delivered such as key internal resources and processes. Eisenmann (2012) also divides the business model questions into four main areas focused on the customer value proposition, go-to-market plan, technology & operation management plan and profit formula. The four main areas are more suitable to emerging industry and entrepreneurs to think about during business model design. They further explore the issues relevant to the impact of business model network effects and customer switching costs; conditions for

vertical integration; first and late mover advantage; and conditions that favour viral marketing.

However, unlike the above studies, in their research, Lindgardt et al. (2009) argued that a business model only consists of two essential elements, which are the value proposition and operating model. The value proposition can be further divided into three specific elements, including target segments, product or service offering and revenue model and the operating model is further divided into the value chain, cost model and organization.

However, Johnson, Christensen and Kagermann (2008) argued that the business model consists of four main components. These are the customer value proposition, the profit formula, the key resources and the key processes. These four interlocking elements taken together are the sources for delivering value, and they are the building blocks for any business. The power of Johnson et al. 's (2008) framework lies in the interconnected processes. Any changes to any of the elements affect the others.

The customer value proposition, known now as the CVP, focus on the way the firm creates value for customers by getting a “job done” (Johnson et al., 2008). Once the job done or problem is identified, a firm can then design an offering to solve it. They stated that the more important the job is for the customer, the lower the level of customer satisfaction with current options for getting the job done, and the better the solution is than existing alternatives at getting the job done. The CVP includes target customers, job to be done, and the offering. The profit formula is the blueprint that defines how the company creates value for itself in line with the CVP. It consists of both the revenue model and the cost structure. The cost structure is based on the cost of key resources for producing the good (Johnson et al., 2008).

Johnson et al. (2008) stated that those without an understanding of the business model often confuse profit formula with the business model. However, how the revenue is generated is

only one element to the model. They found it useful to start from the cost structure of the CVP and work backwards to ensure value. Another component, “key resources”, are assets such as people and technology required to deliver the CVP to the target market (Johnson et al., 2008). The focus is on the interaction of the resource elements to create value. The final component, “key processes”, are the operational and managerial processes that allow the firm to deliver the CVP. Key resources are information channels and brand. Key processes are processes, rules and metrics and norms.

It is not possible to reinvent a business model without first identifying the CVP. Companies, however, often create new products that disrupt competitors without fundamentally changing their business model (Johnson et al. 2008). For a new business model change, companies must ask “When are significant changes are needed to all four elements of your existing business model (Johnson et al., 2008: p. 57)

The components or elements of the above-mentioned business models are summarized in the following table 2.

Author (year)	First-Order Elements	Second-Order Elements
Timmers (1998)	<ol style="list-style-type: none"> 1. Value network (suppliers), 2. Revenue/pricing, 3. Information flows, 4. Product/service flows 	
Zott and Amit (2001)	<ol style="list-style-type: none"> 1. Transaction content, 	

	<ul style="list-style-type: none"> 2. Transaction structure, 3. Transaction governance, 4. Resources, capabilities 	
Chesborough (2002)	<ul style="list-style-type: none"> 1. Value proposition, 2. Offering, 3. Target market, 4. Revenue, 5. Network, 6. Value chain, 7. Cost structure, 8. Profit, 9. Competitive strategy, <p>Competitors, create value</p>	
Margetta (2002)	<ul style="list-style-type: none"> 1. Customer (target market/scope), 2. Value proposition, 3. Cost, 4. Profit, 	

	5. Economic logic	
Shafar, Smith and Linder, (2005)	<ol style="list-style-type: none"> 1. Strategic choices, 2. Value network, 3. Capture value 4. Create value 	<p>Strategic choices: Customer target, value proposition, capabilities, revenue/pricing, competitors, output, strategy, branding, differentiation, mission</p> <p>Value network: Suppliers, customers information, customer relationships, information flows and product/service flows</p> <p>Capture value: cost, profit, financial aspects</p> <p>Create value: resources/assets and processes/activities</p>

Osterwalder (2007)	<ol style="list-style-type: none"> 1. Customer segments 2. Value proposition 3. Distribution channels 4. Customer relationships 5. Revenue streams 6. Key resources. 7. Key activities 8. Partner network 9. Cost structure 	
Johnson et al (2008)	<ol style="list-style-type: none"> 1. Customer value proposition, 2. Profit formula, 3. Key resources 4. Key processes. 	<p>Customer value proposition: Target customers, Offering, Job to be done</p> <p>Profit formula: Revenue model, Cost structure, Margin model, Resource velocity</p> <p>Key resources: People, Technology and products, Equipment, Information,</p>

		<p>Channels, Partnerships and alliances, Brand</p> <p>Key processes: Processes, Rules and metrics, Norms</p>
Lindgardt et al (2009)	<ol style="list-style-type: none"> 1. Value proposition 2. Operating model 	<p>VP: Target segments, product or service offering and revenue model</p> <p>OM: value chain, cost model and organization,</p>
Teece (2010)	<ol style="list-style-type: none"> 1. Technologies and features to be embedded in the product or service, 2. Benefit to the customer from using the product or service, 3. Market segments to be targeted, 4. Available revenue streams, 	

	Mechanisms to capture value	
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Table 2: Components of business model (created by authors)

Scholars have argued whether the business model focuses on internal components or external actions. Zott and Amit (2007) argued that business models should move beyond “internal design to include a focus on the architecture of the transactions that a focal firm engineers with its partners, suppliers and customers” (p. 194). Furthermore, they developed their argument in their 2010 study that a “business model is geared toward total value creation for all parties, internal and external, the greater the total, the greater the focal firms bargaining power and the greater the amount of value it can appropriate” (Zott & Amit, 2010). Teece (2010) also discussed the internal and external factors of business model design and noted that “good business model design and implementation involves assessing such internal factors as well as external factors concerned with customers, suppliers, and the broader business environment”. As for the value creation in business model design, Zott and Amit (2013) highlighted that the emphasis of the business model perspective on value creation calls for integrating these theories to potentially heighten the understanding of the complex processes and mechanics that drive wealth creation.

Zott and Amit (2010) based their business model components from two critical design elements discussed by Zott and Amit in their previous study (2007). These critical design elements focused on the efficiency centred or novelty centred design elements of the business model (Zott & Amit, 2007). The efficiency centred business refers to “The measures that firms may take to achieve transaction efficiency through their business models” its primary

focus aims to reduce transaction costs of all participants (Zott & Amit, 2007). The concept of an efficiency model focuses on the ability to imitate rather than innovate, but more efficiently than competitors and a reduction in transaction costs associated with Williamson (1975) (Zott & Amit, 2007). The second critical design element, the novelty centred business model design, refers to “new ways of conducting economic exchanges among various participants” (p. 182).

However, this study focused exclusively on the business model design had on the impact on the entrepreneurial firm. A broader perspective has been adopted by Zott and Amit (2010) who argue that design elements include new elements such as the content, structure and governance and the design theme focused on the novelty, lock-in, complementarities and efficiency of the activity systems value creation in the business model. By drawing on the concept of design elements, Amit and Zott (2012) noted that the significant business model value drivers are novelty, lock in complementarities and efficiency.

Teece (2010) stated that the business model design has the role of outlining the architecture of revenues, costs, and profits associated with the business enterprise delivering that value. These elements influence the components of business model design. Teece (2010) claimed that in order to create value for customers entice payments and convert payments to profits, the elements of technologies and features to be embedded in the product or service; benefit to the customer from using the product or service; market segments to be targeted; available revenue streams; and mechanisms to capture value need to be considered.

2.4 Business Model Innovation

Though scholars may have differing views on the components of the business model, there is universal agreement amongst them that business model innovation is critical for success (Giesen, Riddleberger, Christner & Bell, 2010). It is important for to review Business model innovation as firms make substantial efforts to innovate their processes and products while neglecting the necessary innovation in business models (Zott et al. 2012). New business models may complement innovation in products and services and may be “an opportunity for wealth creation”, and a novel business model, discussed above in business model design section 2.3 creates a new market and innovates transaction in business models (Zott & Amit, 2007). Amit and Zott discuss in the 2012 paper that “An innovative business model can either create a new market or allow a company to create and exploit new opportunities in existing markets” (p. 44).

Christensen (1997) divides innovation into different dimension with the disruptive innovations influencing the business model in a significant way. Furthermore, the scholars (Christensen, 1997; Amit & Zott, 2001) identify that the conflict between existing business model and disruptive innovation in the industry drive the business model innovation in firms. However, Chesbrough (2010) discussed that key factors of business model may conflict with the traditional configuration of firm assets and are inappropriate to be translated to other industries. He concludes that the key success factors for business model innovation depend on the organization’s culture, internal leaders and middle manager.

Zott and Amit (2007) observed that organisations “Increasingly experimenting with their governance of transactions and that is new ways of structuring their boundaries”(p. 181) and that advances in communication and information technologies have resulted in further

“possibilities for the design of new boundary-spanning organizational forms”(p. 181) and would result in the changing relationship with the customers (Zott & Amit, 2007). Margetta (2002) claimed that a new business model changes the entire economics of the industry, and with difficulty in imitation, can be a strong competitive advantage.

Giesen et al. (2010) investigated the types of business model innovation and concluded that three types exist. The first is the revenue model, which focuses more on figuring out how companies make money by changing the value proposition and the pricing model. The second is the enterprise value model, which is a way of rethinking the organizational boundaries about what is done inside the organization and what is done through collaboration and partnering. The third innovation type is industry model innovation redefine an existing industry, move into a new industry or create an entirely new one. Industry model innovations are less frequent and tend to be pursued by industry leaders with strong financial means and industry positions who can leverage introducing these radical business models.

The need for this business model change is one which the company must decide in line with its strategy. Companies should not pursue business model change unless they are confident it will be worth the investment (Johnson et al. 2008). Business model innovation occurs when strategic instances arise, but businesses find it hard to identify when it is needed. Johnson et al. (2008) observed five strategic circumstances that often require business model change. The first is the opportunity to address through disruptive innovation, the needs of large groups of potential customers who are shut out of a market entirely because existing solutions are too expensive or complicated for them. Secondly, they stated companies could capture an opportunity to capitalize on a brand-new technology by wrapping a new business model around it or the opportunity to leverage a tested technology by bringing it to a whole new market. Thirdly, The opportunity to bring a job-to-be-done focus where one does not yet

exist. The focus of This job to be done allows companies to redefine industry profitability. Companies must also shift and change the business model to respond to a shifting basis of competition. Inevitably, what defines an acceptable solution in a market will change over time, leading core market segments to commoditize. The final need for strategic change occurs when companies need to fend off low-end disruptors. Lindgardt et al. (2009) also highlighted the importance of business model innovation in the functional area. Business model innovation can address downturn-specific opportunities and disruptions that need new approaches. Meanwhile, many companies view business model innovation as a defensive move to keep sustainable advantage among competitors. However, Lindgardt et al. (2009) argued that business model innovation would be more powerful when it is designed to explore new avenues proactively.

The execution of the business model is just as important as the design and components. Giesen et al. (2010) discussed that to increase business model innovation and its execution success; firms must build a set of capabilities they identified as the three A's. These are the organizations that need to be aligned with customer value, analytical to gain insight from differentiated intelligence, and enabled by an adaptable operating model. They highlight that the industry leaders tend to introduce radically new innovative business models upsetting competitors and firms would rethink their revenue model and value proposition to respond to a different set of customers behaviours and market requirements when the business model innovation happen in the industry. Zott, Amit and Massa (2011) analyzed business model in multiple subject matter lenses and found common themes emerging on business models specifically that business model is emerging as a new unit of analysis, that business models emphasize a system level holistic approach to explaining how firms do business, that firm

activities play an essential role in the various conceptualizations of business models that have been proposed, and business models seek to explain how value is created, not just captured. Amit and Zott(2012) discussed how business model innovation could consist of adding new activities, linking activities in novel ways or changing which party performs an activity (Amit and Zott, 2012). They emphasise the importance of business model innovation as it “ it represents an often underutilized source of future value, secondly competitors might find it more difficult to imitate or replicate an entire novel activity system than a single novel product or process, thirdly managers must be attuned to the possibility of competitors efforts in the area” (Amit & Zott. 2012). Business model innovation has increased with the advent of new technology and the rise of the internet.

2.5 Business models and Technology

The internet has not just created new industries but also new business models. Porter claimed the internet led many companies to make bad decisions in the early 2000s, as they did not understand the essential business model design for it (Porter, 2001). Furthermore, Porter (2000), the effect of the internet on business models is hard to determine accurately.

However, its most significant impact has been to enable the reconfiguration of existing industries that have been constrained by high costs for communicating, gathering information or accomplishing transactions. He stated that the internet dampens the bargaining power of the channels by providing direct avenues and more information to customers. As Chen (2009) claimed that the adoption of the internet has led to a multitude of business models being adapted to take advantage of it, and in turn technology innovation advanced the development

of business models. Teece (2010) claimed that information technology industries have always raised business model issues because the information is often difficult to price and technology changes, specifically communications and the computing industry, need to the business to adopt a consumer-centric approach, ensuring their needs are met. As a result, Teece (2010) stated that the rise had amplified the need for business to find ways to capture value more astutely, and business models designed to do so.

A new business model discussed by scholars such as Chen (2009) is Web 2.0. The term Web 2.0 is a relatively new name for the business model, commonly referred to as “a platform, spanning all connected devices” O’Reilly (2005; p. 2). While a variety of definitions of the term Web 2.0 have been suggested, firstly by (Weiss, 2005) who viewed Web 2.0 as “sharing, collaboration, aggregate knowledge, or community-driven content, social software creates the foundation of collective intelligence”, and O’Reilly (2009) claimed a more specific definition of Web 2.0 as “a perceived or proposed second generation of Internet-based services”. Chen (2009) defined Web 2.0 as a form of business model supporting online games and other E-commerce industries. Chen also noted that software as a service is a hallmark of Web 2.0 and is one of the opportunities that occur when utilizing the internet effectively. Moreover, he considered that Web 2.0 business models emerged from the concept of the old business model limits. However, Chen (2009) argued that Web 2.0 requires business models to combine components of several different business models.

The uniqueness of the Web 2.0 business model could be of significance in value creation for technology companies. Gilchrist (2007) highlighted that Web 2.0 provides a platform for organizations to enhance their businesses by sustaining their competitive advantage.

According to O’Reilly (2009), the emergence of the Internet provided a platform not only for organizations but also for customers to ask for more interaction with the enterprises.

2.6 Summary of Literature

In the above literature review, the business model is distinguished from strategy by identifying three critical distinctions between the two. Multiple academic definitions of the business model are provided to contrast its development and understanding. The key components and design elements of the business model are presented and established. The review investigates the importance of business model innovation for the success of a firm and discusses the unique effects of technology on the business model.

3 Methodology

In the following chapter, we discuss how the study was designed, explain and illustrate what methods of research used, the procedures and approaches took to justify the validity of the study, the data and the findings used to answer the research question. We use this section to also justifies the choices that were made to reach a conclusion and answer the proposed research question. For the study, we collected both primary and secondary data illustrated below.

3.1 Research Approach

The purpose of the research is to define Games as a Services (GaaS) as a business model, influencing the entire strategic development of companies who adopt it, as discussed in Chapter 1. Our study undertook a qualitative research method. We understood that our research design had to be conducted in a way that allowed us to reach a satisfactory conclusion for our intended research question. We based this study on a multiple case design after preliminary research indicated that this method would provide us with more significant insights and could be defended against academic scrutiny. We also extended our research to the Asian market, specifically focusing on China. This is due to the already established Gaming as a Service strategy in the region and could draw upon the comparisons between the traditional Northern America, European and Asian markets.

In order to understand the topic, we examined a broad array of academic peer-reviewed literature pertaining to the area of business models outlined in Chapter 2. Our research

focused on multiple contributors in order to understand the key areas which influence and affect the creation, components and adoption of business models. Our multiple case study was conducted with four companies engaged in the video game industry, both large and small developers, ensuring varying viewpoints of the gaming industry were adequately addressed. With this, we compared and contrasted their industry opinion and expertise on challenges facing the adoption of the business model by the video game industry. Furthermore, the opinions of the interviewees were sought on the future direction and further development of the GaaS business model.

3.2 Research Design

Our studies research design is about organising our undertaken research activity and to find an adequate data collection method to answer the research question. We focused on the methods of Easterby-Smith et al. (2015) for research design and how our study should explain and justify what data is to be gathered, how and where the data is sourced. Furthermore, the research design needs to explain our methods of data analysis and connect the findings with the main problem in our study. Creswell (2014) also highlighted not only to select the appropriate method of study but also, we should select a specific type of study within the choices of different research methods. To ensure we came to an accurate and credible conclusion are research method focused on finding reliable data from both primary, the cases and secondary sources outlined in Chapter 4.

3.2.1 Case Design

As discussed previously, we choose the multiple case study method as it allowed us to focus our primary research efforts on four companies engaged in the different business models. This is related to theory building approach of Eisenhardt and Graebner (2007) to analyse more than one business, event or individual thoroughly. The objective of these efforts into researching the chosen companies was to analyse what the case companies felt defined GaaS, its key components and the challenges, both present and future, the business model presented. According to Yin (1994), multiple case study is more suitable to serve for replication, contrasts and extensions to the emerging theory, such as the GaaS business model. We focused on the theory of the business model in terms of Game as a Service, that has not been developed or researched thoroughly in the academic sphere. Furthermore, Eisenhardt and Graebner (2007) noted that cross-case analysis is recommended in the data collection part, increasing the diversity of data. Therefore, we decided to use the multiple case study method with the analysis of the cross-case study.

3.2.2 Data Collection Method

The data collection method helped us identify our plan and procedures for the research regarding the collection and analysis of data (Creswell, 2014). The section includes our data collection procedure, the selection of case companies, the logic behind our interview design, data and analysis methods and our validity of our chosen case study.

3.2.3 Data Collection

The primary design to achieve the purpose of our study is a qualitative method with chosen case study the following companies Tarsier Studios, Massive Entertainment, Wuhan Buling and DICE.

In line with Easterby-Smith et al., (2015), the secondary data not only saved our time and effort but also aided us in ensuring the quality and credibility of data. However, we always critically evaluated the sources of secondary data for their validity and reliability (Easterby-Smith et al., 2015). We used data sources such as Statistica, company reports and websites to provide us with necessary secondary data. We correlated the secondary data with primary data from interviews. We chose to undertake a qualitative design for the study as it was our goal to explore a topic in depth. The qualitative method also allowed us to ask follow up questions and to vary our questions. The quantitative method of survey would have allowed us a greater sample size, but given that we were intending to delve in depth into the topic we viewed a quantitative approach as insufficient for our requirements.

Furthermore, as highlighted by Easterby-Smith et al., (2015), the first step before the data collection was to develop a suitable sampling strategy. Considering our research objectives and the availability of cases, we decided to use the theory-guided sampling strategy, which is concluded by Easterby-Smith et al. (2015). As they defined, the sampling strategy is aimed at “selecting cases depending on whether they meet certain theoretical constructs”.

3.2.4 Case selection

In terms of the case company, our selection was motivated by the characteristics of the firms, including their current business model, the extent of engagement with the GaaS model and reputation. As a result, extensive profiling occurred to ensure we selected only applicable companies who could contribute accurately to our research. As a result, we decided to select companies which focus on different categories, target customers and different market size to compare the influence of the GaaS business model.

We focused on companies who had both altered strategy to adopt GaaS and those engaged in the traditional model. Hence, four of the case companies we selected are game developers.

Furthermore, GaaS is the leading business model trend for game companies in Europe while currently the established business model adopted by Asian companies. As a result, we studied one small studio, Wuhan Buling, located in China. As the authors of the research are located in Sweden, a convenience sample was deemed appropriate. The convenience sample resulted in the majority of firms studied having a significant part of their operations in the Swedish market. This allowed for access to the relevant persons and for interviews to be conducted face-to-face.

It was deemed appropriate for the study to focus on individuals who had senior positions in the organisation. This selection was designed in order to ensure those who were engaged in the interviews had a detailed understanding of the firm strategy, business model and the evolution of the firm and industry. This selection method can be seen in the job roles of the participants chosen for interview.

3.3 Interview design

All companies selected and interviewed are active in the video game industry with various business models. To ensure quality material was collected from each interview, we gathered publicly available data and asked only specific information not available in the public domain. However, as Yin (1994) noted that the multiple case study should collect the empirical evidence with a similar method among the cases. Our interview design is also in line with the “guided open interview” defined by Easterby-Smith et al., (2015). As a result, our interviews were topic guided, and the issues and questions were selected depending on the different

cases. Our approach remained flexible enough to study the nuances of any topic and to delve further into the different areas as and when required. As a result, questions were similar, but some questions were specific to the case company. The Interview guides are located in Appendix B.

3.4 Data Analysis

To ensure accurate data, we recorded all the interview after being granted the permission of the interviewees, with transcriptions documented after for further analysis. Only information provided with full consent was reported. We analysed the data objectively, avoiding only discussing the results favourable to the participants. Secondly, we reported the full findings even if some data was contrary to our study.

According to Yin (2009), the data analysis process should be conducted in a logical way to make it clear and targeted to research (Yin, 2009). As previously described, for our case company, we first reviewed the companies individually and then compared and contrasted them in a separate analysis.

3.5 Validity and Reliability

The selection of our case companies to analyse GaaS should be regarded as accurate and reliability due to the variety and the criteria of the selection process outlined above. Our research does not constitute a generalised model but does set foundations for additional studies of the GaaS model, particularly when it continues to develop in accordance with video game technological improvements. As described in our literature section, there is no academic

template for the adoption of the Gaming as a Service model, but alternatives exist for internet and technology adoption in the business model.

We were keenly aware of the external validity of case studies presented in Yin (2014). In line with Yin (2014), we were conscious that findings from our study are not necessarily a general concept for companies in the gaming industry and interpretation depends on the subjective view of the researchers and those who read it.

3.6 Ethical considerations

We reflected on the ethical considerations that we must be aware of when conducting our research. As a result, our methodology was created with ethical consideration in mind. The consent of the case companies was sought at the beginning of the interviews, and we were aware not to report anything that could compromise the individuals' integrity, the companies' strategy or discuss our findings with competitors

4 Empirical Findings

In the following chapter, the information gathered from the chosen case companies is discussed and presented. The collection of primary and secondary sources of data is distinguished. The chapter begins with an oversight of secondary data of the video game industry, in terms of both background and revenue. Secondly, a brief overview of the case companies and their business models is presented. Thirdly, analyses of the case companies is conducted. As described above, each interview was tailored for different case companies, with some similar questions.

4.1 Secondary Data Collection

The purpose of the secondary data collection is to gain an industry perspective of the business model. The secondary data collection of the industry focused from 2012 to gain an understanding of the impact of the business model. This is a result of Clark (2019), who claimed that the business model has been the forefront of strategy since 2014. The company data focused on the period 2014 - 2017 to track overall revenue increase in the years of adoption. The secondary data conveys an enormous increase in the value of gaming in the period. The secondary data indicates that the value of the gaming industry has more than doubled its value in seven years, from around \$50 billion to \$120 billion (Statista, 2019).

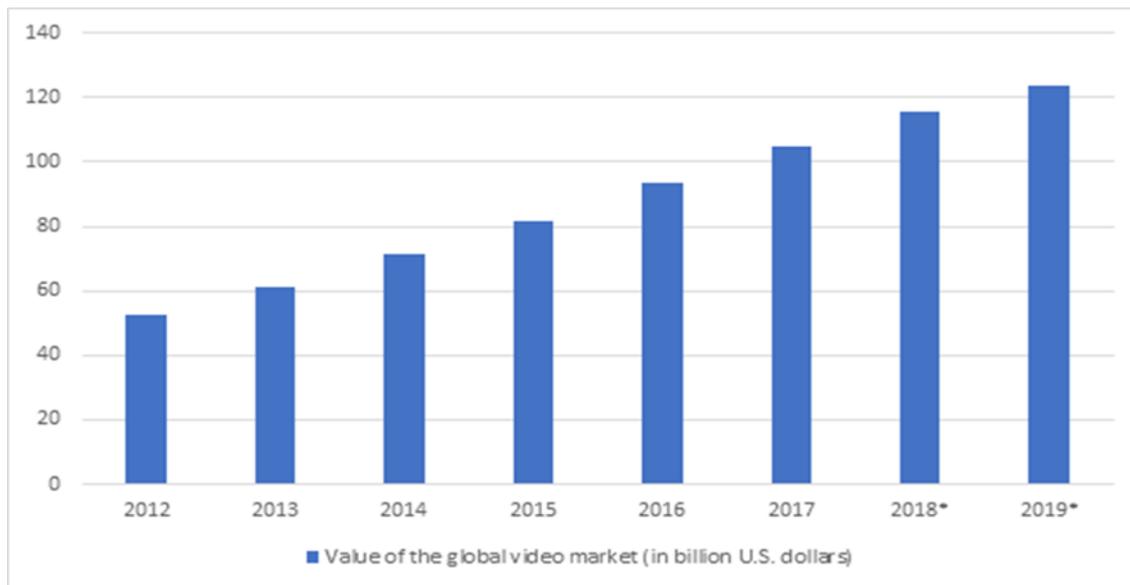


Figure 2: Value of the global video market from 2012 to 2019 (Statista, 2019)

However, the distribution of the increase in value capture per company can be seen below in

Table 3

	Fiscal year ending 2014 (In Billions \$)	Fiscal year ending 2015 (In Billions \$)	Fiscal year ending 2016 (In Billions \$)	Fiscal year ending 2017 (In Billions \$)
Tencent	8.2	8.7	12	18.1
Sony	5.1	5.9	7.8	10.5
Activision	6.7	4.7	6.3	6.5
Blizzard				

Microsoft	4.6	5.9	6.5	7.1
Apple	3.5	4.4	6.7	8
EA	4.5	4.3	4.6	5.1
NetEase	1.6	2.8	4.2	5.6
Google	2.4	3	4	5.3
Bandai	-	1.7	2	2.4
Namco				
Nintendo	-	1.9	1.8	3.6

Table 3: Gaming revenue of leading public companies worldwide from 2014 to 2017 (in billion U.S. dollars) (Newzoo, 2019)

The data indicates that almost all companies in the industry have seen an increase in revenue since the GaaS business model's implementation in 2014. The Chinese gaming company Tencent has the highest revenue and exclusively adopts the GaaS model (Newzoo, 2019). However, some companies listed above, such as Apple, Google and Microsoft, do not source their revenue exclusively from gaming and have a diverse portfolio of products.

The GaaS business model has been implemented in the Asian markets for a more extended period than it has for American or European gaming markets (Bagga, 2011). Figure 2 illustrates that both Tencent and NetEase have increased their revenue by almost \$14 billion (Newzoo, 2019). As a result, there is a stark contrast between the regions in video game revenue, and Bagga (2011) claims the Chinese video game consumer spends on average 66% more on video games than their American counterparts. A Chinese video game designer claimed that "Asia is usually about two to three years ahead of the rest of the world in terms of what business models for games are popular" (Valentine, 2019).

4.2 Multiple Case analysis

The following primary information was gathered from interviews with the selected case companies. The interviews consisted of standard questions with some deviations based on the unique characteristics of the companies. The discussions of the main topics are broken down into individual case interviewee responses and a cross-case analysis comparing and contrasting answers. The below case companies are all developers of video games. In the below Table 4, the information on the chosen companies and interviewees is presented.

Case Companies	Parent Company	Location	Business model	Interviewee	Position	Size(number of employees)
Tarsier Studios	None	Malmo, Sweden	Traditional	Andreas Johnsson	CEO	60
Massive Entertainment	Ubisoft	Malmo, Sweden	GaaS	David Polfeldt	Managing Director	600
Wuhan Buling	None	Wuhan, China	Traditional model, with some GaaS elements	Qiyue Hao	Marketing Manager and Co-Founder	20

DICE	Electronic Arts (EA)	Stockholm, Sweden	GaaS	Dennis Brannvall	Design Director	600
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Table 4: Case companies overview (created by authors)

4.2.1 Case company overview

In the following section, the selected case companies, the individual interviewees and their roles are presented. To gain a comprehensive understanding of gaming as a Service, the four selected case companies have varying business models. The interviewees selected hold positions of strategy creation and implementation within the company. The case companies discussed include two large multinational companies and two smaller independent studios.

Tarsier studios

The first case company, Tarsier Studios, is an independent game studio founded in 2006. It is located in Malmo, Sweden, and according to the interviewee, they have around 60 employees (Johnsson, 2019). It is a small studio that produces high quality, cross-platform games. The case company interviewee was Andreas Johnsson, one of the seven founding members of Tarsier Games and became the CEO in 2017. In 2017, they released first of two original games one cross-platform game, called Little Nightmares, and another exclusively for PlayStation VR called Statik. There is currently an unnamed title in production (Johnsson, 2019).

Massive Entertainment

The second case company, Massive Entertainment, was founded in 1997 and was acquired by Ubisoft in 2008 (Lee, 2008). It is currently located in Malmo Sweden and employs six hundred employees. The interviewee was David Poldelft, who is the Managing Director of Massive Entertainment since November 2009. His success as the managing director can be seen in the growth of the company from 40 to 600 employees and was awarded Skane leader of the year 2017 (Deut, 2019). The company focuses on creating global titles, such as the Division and are currently creating a game based on the film Avatar.

Wuhan Buling

The third case company, Wuhan Buling, was founded as a college incubator in 2018 programme and has transitioned to an independent developer. The interviewee, Qiyue Hao, is one of the co-founders in the case company. The interviewee's primary role is marketing manager, however, due to the nature of the start-up, roles are not defined, and she has experience in the strategic decision making of the company. They have produced one game, Brian Machine, which is available cross-platform. In the case of Wuhan Buling, the differences between the Asian and Western markets and the challenges faced by smaller developers were discussed.

DICE

The fourth case company, DICE, is a developer located in Stockholm, Sweden. It is a subsidiary of Electronic Arts since 2006 (Martin, 2006). The interviewee, Dennis Brannvall, is currently the franchise design director for Star Wars Battlefront. He took over the leadership of the game post-launch. According to the information provided by Dennis, they currently have around 600 employees, which varies between projects (*Dennis, 23 May 2019*).

4.2.2 Definitions of Gaming as a Service

In this section, the interviewee's definition of GaaS is presented. The definitions vary between the different interviewees due to the several factors including positions, experience, current strategy and roles in the gaming industry.

Tarsier Studios

Andreas defined GaaS as the process of continuous development post release of the game, with the community input playing a vital role in the market operation. This allows the game to become a service not only for the customer to access but for the company to show their new products.

"[...] a continuous development of additional content making sure not just revenue-wise because I mean, we should just focus on the direct revenue streams but the community of players also." (Andreas, 16 April 2019)

Andreas further developed on his definition, dividing the business model into two different parts. The first is to develop one single game, continuously developing it by providing ongoing service for customers using different methods.

"there are multiple ways one way would be to and by developing new content you would you would charge for that new content in some way, so Microtransactions is one way, DLC packs is another way." (Andreas, 16 April 2019)

The second element of the GaaS business model described by Andreas is to build the platform to support the service for the gamers. At the same time, the platform can further help to build an ecosystem to the game company, attracting players to try their different games.

"As for the other part of game as a service definition, I would say it is more aligned with Netflix and other services where you have a platform whatever that is most likely software platform and it exists on multiple hardware platforms depending room makes it. And the service is most likely subscription so like World of Warcraft." (Andreas, 16 April 2019)

Massive Entertainment

David defined the service in game as not just a service model but more about the relationship with consumers. This was based on previous research from an interview with gaming site "Press-Start" which David described it as a relationship (Deut, 2019). Our interviewee highlighted the role of community in maintaining the interactive relationship between customers and developers.

"I want to call it (Gaming as a Relationship) that because a relationship because games are the service implies that I want to sell something to a customer [...] I'm developing a game in a kind of a slowly evolving interactive process cooperating the game with gamers which is based on player data but also on feedback." (David, 24 April 2019)

In order to achieve that relationship, the strategies like providing private test server, inviting selected players who are highly opinionated positively or negatively to share the ideas are adopted to get direct and indirect feedback from the customers.

"Because the market changed where the input and the relationship with the gamer obviously happened after the launch of the game, which meant that there was a disconnect from the dev team that was working on the game until it launched. And then they left the relationship. And then the other half of the relationship, the gamer and the community came, came to the restaurant and had their moments with the game. (David, 24 April 2019)

Wuhan Buling

Qiyue defined the GaaS business model as a

"[...] system of activities which is trying to update the game and build a community with customers." (Qiyue, 13 May 2019)

She noted that this perspective was based on the Chinese market.

DICE

Our interviewee Dennis defined GaaS by comparing the difference between story driven game and community-driven games from the perspective of the consumer, not developers.

GaaS lets customer return to the live service to see what additional content has been added.

"The core of what (GaaS) is, it is a community driven game. [...] it is a game that the users are going to keep coming back to and investing in." (Dennis, 23 May 2019)

Cross-case discussion

A summary of the definitions can be found in the following table:

Case	Definitions of GaaS
Tarsier Studios	The GaaS model can be divided into two parts, the first is about providing the ongoing services after the game release and the second part is about creating a platform or ecosystem by operating the game in the long term.

Massive Entertainment	This GaaS model means the change of game lifecycle, expanding the lifespan of games. But for AAA games, providing services to customers are more like operating a relationship with consumers
Wuhan Buling	The GaaS model is a system of activities which trying to update the game and build a community with customers.
DICE	The essence of GaaS model is to develop a community driven game which can retain active players.

Table 5: Definitions of GaaS provided from our four cases (created by authors)

The definitions provided by all interviewees place the relationship with the customers and an ongoing service platform as the core elements of the model. All interviewees stated that the feedback, opinions and reviews received from customers contributed to building a community with the users. However, the only variation to this was from Andreas (Tarsier Studios). He distinguished the varying revenue model based on how one interprets the definition. It is interesting to note the varying perspectives on definitions from the size of the company. David's (Massive Entertainment) perspective focused exclusively on the definition of GaaS based on a multinational corporations' perspective while Qiyue (Wuhan Buling) also based her perspective on the Chinese gaming market.

4.2.3 Business models and strategic choices

Tarsier Studios

Andreas discussed that during the foundation of the company, the business model was not the primary consideration,

"The first team Tarsier is the start of the studio; we were young and naive. Although we were ambitious, [...], We didn't care about the business model or other things in business area, [...] we didn't have any business sense and we have no experience of making games, and we are a really small team, but we were asking for a lot of money. "(Andreas, 16 April 2019)

After what Andreas referred to as "the awkward phase of the startup", Tarsier Studios began a collaboration with leading gaming publisher Sony, as a developer for additional content in the game "Little Big Planet". They have since ended their collaboration with Sony and began work on their own games.

*"I think that was a really good choice so that was in 2015 and a lot has changed since then."
(Andreas, 16 April 2019)*

When asked if their current business model focused on GaaS or the traditional business model, Andreas stated that they were focused on producing high-quality games. He explained that the game "Little Nightmares" has DLCs post launch, but this is not GaaS.

"It doesn't make it as the GaaS model. I will suppose this one it's a bit more traditional model instead of GaaS. For you can definitely it's separate products. "(Andreas, 16 April 2019)

He claimed they still used the traditional business model of video games. This allows for their teams to focus on producing high quality games.

Massive Entertainment

Massive Entertainment's business model is based on GaaS. It has aligned its teams, and internal structure is to develop and operate a GaaS model (Polfeldt, 2019). David discussed

the change in business models of Massive Entertainments from the old traditional AAA games to embracing a GaaS business model. The main difference between their previous traditional model and their current GaaS model can be seen in the product life cycle, which does not end with the release of the game.

"Then over time as game started including online components, in the beginning, was just PVP (Player versus Player), so player versus player had some attention to the game {...} after gold standard became apparent to developers that the PVE (Player versus Environment) part or the campaign part is probably done." (David, 24 April 2019)

The continual service post-release is necessary for most games — the team shift from developing the game to reviewing the feedback from the customers.

"We still need to, and we need to fix a couple of issues, we need to take some anti-cheat measures as well in order to create a good satisfying experience" (David, 24 April 2019)

A significant element of their strategy based on the business model is attracting as many new consumers at the launch and post-launch of the game, by tailoring the experience that they have in the game,

"But the way we give people access to it is not on par with the experience that people could have. We are basically shutting people out of a really, really cool experience [...] that's where we're going to focus on in the coming year." (David, 24 April 2019)

Our interviewee mentioned that the previous business model of shipping on a disc and the development leaving the game post-launch. When discussing the effects of the GaaS business model on the current strategy David said

"the first answer to that in traditional triple-A development was to do DLC (downloadable content) , downloadable content updates, which, in the beginning, it was quite common that the DLC was produced by another team [..]And then you would outsource the production of the DLC to either a partner studio or to some smaller studio that would do that kind of work. So the DLC was normally not created by the core team." (David, 24 April 2019)

David discussed how their long term strategy is consumer-centric, and the service element is there for the benefit of the customers.

"It's actually an interactive design process that is funded by is charging for services stuff to provide. And the service can be more content, or you know, new skins, new locations." (David, 24 April 2019)

Wuhan Buling

The business model of Wuhan Buling is a traditional and not GaaS. However, the model varies based on the operating system for Android and iOS platforms. She claimed that

"it is more complex to release their games on mobile market, especially for Android, because they must deal with additional work including changing the art resource, SDK and negotiating with different publishers on different Android channels." (Qiyue, 13 May 2019)

Furthermore, the Chinese government regulations of games further limited the strategic choices. As what our interviewee illustrated, the Chinese government will limit your choices of business model based on the games produced.

"If you want to publish a game, like making a profit in the government licensing part, you have to ask for the permission to make profit from the game."(Qiyue, 13 May 2019)

As for the small games, our interviewee stated that the global market is not hard to enter, especially for mobile games, and she pointed out that the importance of publishers and platforms in terms of globalisation. For example,

*"Apple will provide the language support when the in-game text needs to be translated."
(Qiyue, 13 May 2019)*

However, in consideration of the limited resource they have, our interviewee explained that their targeted market is still the Chinese market and the differentiation marketing strategy is not appropriate to them.

"We don't have a service thing for the customers, but we do listen their feedback. We have our own channels and have regular meetings, some active player." (Qiyue, 13 May 2019)

Our interviewee conclude that their strategy is to achieve profitability instead of a customer focus long-term strategy as they are still in their developing stage. But then they do very care about the opinions of their customers and will rethink the game design based the feedback.

"We take the customers as a high priority, but they are not the number one in our consideration. And we know we can't manage all the resources to make this happen if we listen to them, like all the time, and that would be quite a distraction." (Qiyue, 13 May 2019)

Our interviewee also claimed that marketing strategies to the same game can be different on different platforms, and even the small games can be applied in GaaS if it is appropriate. The publisher has an important role in establishing the pricing strategies and aiding the developers to make a differentiated strategy in terms of different channels.

"So first, iOS, we leave it like you pay like six \$3 and then you have the whole game for 11 levels, but then in Android because of the user characteristics, we made the game free and then we released the three first three levels to that and after the three levels.[...]the revenue strategy should be based on the content of games" (Qiyue, 13 May 2019)

DICE

Our interviewee stated that the games are based on the GaaS business model. Their current strategy is heavily dependent on how they allocate the resources and consumer feedback of the model. He stated that the live service is a factor they always take into consideration, but the further design of games should be in line with the GaaS model.

"And in many cases, we're trying to narrow our focus a lot more when we design games to make sure that they're they are stickier that it's something that you don't just discard because you weren't enjoying it.[...]I was certainly I'd say that that's taken into account life service, but we're not deliberately going into we're going to build this game, there's going to be a lot (Customers) worried it's going to add a bunch of microtransactions." (Dennis, 23 May 2019)

Cross-case discussion

Company	Business Model	Strategic Focus
Tarsier Studios	Traditional Models with some GaaS elements	Building intellectual properties
Massive Entertainment	GaaS	Attracting new players

Wuhan Buling	Traditional Model	Building a brand and IP
DICE	GaaS	Revenue generation and play experience

Table 6: Business Model and Strategic Focus of case companies (Created by Authors)

As presented in the above Table 6, the business model is used to advance the strategic direction varies between the company size. The smaller companies, Tarsier and Wuhan Buling, look to expand by building intellectual properties and brand presence while using traditional models. These are contrasting strategic objectives between the multinational companies. Massive Entertainment seeks to expand their player base to increase revenue and DICE seeks to balance the revenue generation while not compromising the player experience. A point to note is that Andreas claimed Tarsier Studios is using the traditional model. However, the game "Little Nightmares" has GaaS elements including DLC, post-game updates and cross-platform development.

4.2.4 Opinions on GaaS

Tarsier Studios

When discussing his opinion on the business model, Andreas stated that the model could be predatory to consumers if not managed correctly by the firm. It is a challenge for companies to understand the balance.

"I think you can find a balance work, it's actually just positive [...] there needs to be a balance between what the player wants to pay and what the firm does" and Andreas noted

that his teams do not need engage in that form of GaaS to add features "For the sake of it".(Andreas, 16 April 2019)

However, he noted it is a viable business model and may already be the industry standard. GaaS model is still developing in gaming industry, and there are a lot issues like how to balance the customer satisfaction and firm profitability need to be resolved.

Based on the products and strategies they have made, we asked the interviewee's opinion of GaaS and the feeling of experimenting the development of this business model in these ten years. We found that the topic of GaaS is not a new concept for them, and they assume that is the mainstream of current gaming industry.

"We have new platform, new models like you mentioned games service.[...] Service overall is a big thing since Netflix arrived. And you can see in other businesses as well I think one is aeroplanes industry [...] So you're actually paid by the mile instead of instead of buying like an engineer. EA, he is trying to do it with Orange you can see it with Google will do it most likely with their new platform um so when talking about games are service there are multiple angles, not just one." (Andreas, 16 April 2019)

Massive Entertainment

When discussing his opinions on the GaaS business model, David believed that creating fantastic worlds with in-depth stories, then supplementing them is always attractive to gamers and GaaS is a viable business model. When David discussed the components of GaaS, he believed that free to play model is an accessible way to attract and gain attention to consumers. However, the interviewee also considered that the free to play revenue model has its limitation that the consumers must purchase the devices which allow to try high-quality AAA games. His concern for the business model is the value added and capture problem.

"I think that the product that we're making is a pullet for the future but the way we are not on par with the experience that people could have. So, we're basically shutting people out of really cool experience so that's where I think we would have to involve them you can call it entry points you can call it satellites." (David, 24 April 2019)

David discussed how some aspects of GaaS negatively impacted consumers, and he considered that the business model is based on the perceived value of customers.

"Whereas the example of changing my server, I want to play with these guys instead of these guys, and I'm locking into this one server. Okay, that's a \$10 fee, I think, to do that, which is not real, really honest in itself. Because doing that changes takes a microsecond. And it can be completely automated. Yeah, it's unfair." (David, 24 April 2019)

Wuhan Buling

When discussing the opinions on GaaS, the interviewee explained that dominant developers like TenCent and NetEase have established GaaS as an industry standard in China. However, this is not their strategy due to the limited resource.

"The dominant developers and publishers in China are good at attracting and building long term relationship with customers, but the company needs the resources to do it." (Qiyue, 13 May 2019)

As a result, it is the dominant business model of the Chinese video game market.

DICE

When discussing GaaS, the interviewee claimed that the whole gaming industry is changing right now, and there are a lot of games supported by services using GaaS models such as loot

boxes to introduce their new content. There is not a concrete answer, but there is a trend that the customer experience is increasingly significant to different kinds of games.

"This is a sustainable and win-win strategy both for players and game companies." (Dennis, 23 May 2019)

Cross-case discussion

Case company	Opinions on GaaS
Tarsier Studios	GaaS model is still developing in gaming industry and there are a lot issues like how to balance the customer satisfaction and firm profitability need to be resolved.
Massive Entertainment	The GaaS model is popular and sustainable in the gaming industry but the key factor to AAA games is the fantastic content and the business model application should be based on the game itself. Overall, the gaming as a service is more like gaming as a relationship.
Wuhan Buling	GaaS is a sustainable model in China but need sufficient resource to support.
DICE	This is a sustainable and win-win strategy both for players and game companies.

Table 7: Summary of opinions on GaaS from case study (created by authors)

The case companies shared similarities and differences in their opinion of the model. All case companies believed it was viable when balancing it with the consumer expectations. There was a clear need by the multinational companies to balance the model with customer experiences. This can be achieved by elements that David (Massive Entertainment) referred to but still need to be based on the game itself, and not added for the revenue benefit of the company.

4.2.5 Long term developments and impact of GaaS

Tarsier Studios

The interviewee's opinion on the long-term strategic impact and developments of GaaS model, Andreas predicted the model would evolve into a cloud gaming platform. He claimed that some companies such as PlayStation Now are already experimenting with the concept. This evolution can be seen as a new type of game as a service model, or an entirely new operating model like Netflix.

"[...]The new type of service platform like PlayStation Now and Google is probably gonna try it, and I think Amazon will go into it as well, all of this kind of streaming services like Amazon Google Microsoft Intel and Tencent are going for." (Andreas, 16 April 2019)

He stated that strategic change into cloud gaming can only be led with multinational companies such as Google and EA.

In terms of the influence of technology innovation to the whole industry, AR has more applications, but VR still can be the trend. He also mentioned the mobile market can be the future trend because of the preference of the next generation. They are more familiar with the

mobile device and don't have the PC using habit like the last generation. The AR also can be applied in most games, and it will connect in people's lives in the near future. However, the development of VR is limited because the unique infrastructure and room requirement.

"What's happening now for the game environment is extremely interesting because we have new players coming into the industry and just changing everything [...] They use their phones more frequently." (Andreas, 16 April 2019)

Andreas noted the number of new consumers who are now embracing the various forms of video games and this is enabled by the reduction in friction of video games.

"[...] for the games industry is extremely interesting because we have new players coming into the industry and just changing everything. I'm not sure about the business model for streaming." (Andreas, 16 April 2019)

Andreas also noted that IP's are important for the model

"It's the same reason why people put the big publishers continue on investing in the same IPS and not creating new ones. Yeah, because it's more efficient [...] they are low risk, and will continue to be so" (Andreas, 16 April 2019)

Massive Entertainment

When discussing the long-term development of the GaaS business model, David said

"I personally believe that what we see today is nothing compared to what it will be ten years from now." (David, 24 April 2019)

David noted that the model will expand in line with the removal of the market cap as everyone has mobile phones.

"So the entire market today is limited by hardware. I believe that the gaming industry will be 20 times bigger. I'm just throwing outside rough numbers but verify them somewhere or find the right ones. I think that the evaluation of a gaming publisher, like Ubisoft, should be 20 times higher". (David, 24 April 2019)

Subsequently, the emergence of technology innovation in gaming industry like VR and AR has received extensive attention by their developers. The interviewee considered it is a new large market but depends on the hardware solutions. He does not consider this a prominent strategy and is not their current focus due to the limitation of hardware requirements to the audience. However, he believed new VR and AR games will promote the development of GaaS model for these systems.

When we asked about streaming services as discussed by Andreas of Tarsier games David responded

"Technological challenge of actually streaming. Streaming in a video is super easy. Because you know, all of the data in advance, I think, what order it should appear, which means that you can buffer the stream. And you can survive quite a bad connection and quite many hiccups without the user noticing. Yes. However, in the game, you don't have the luxury of knowing in advance what's going to happen? Because that depends on the gamers choice. Yeah" (David, 24 April 2019)

Wuhan Buling

The particularity of Chinese market is not only from regulations as we mentioned but also from the customer preference. Our interviewee explained that the main difference is the platform choice, the console games are not very popular among the market size of PC and

mobile phone are more significant than other countries. However, there was a trend of console games in China, and they considered themselves as hardcore gamers.

DICE

For the development of models, Dennis stated that the model will highlight the importance of IPs in GaaS. However, our interviewee argued that a unique IP will not sustain the model.

"Although live service games like Path of Exile and Diablo (Video Games) are proving that it and I wouldn't say it's irrelevant. But it's not necessarily key either." (Dennis, 23 May 2019)

The interviewee discussed the evolution of the business model with platforms due to the increasingly developing mobile market. Our interviewee stated that focusing on one specific platform for developers is not wise since the content can be transferred to different platforms, and the cross-platform will attract more players.

"I think if you really want to be successful, you should find a way to be on all of them and find a way to make that experience as seamless as possible. [...] the best way to make sure that you stand out as a service is to allow players easy access to their favourite game at their fingertips always." (Dennis, 23 May 2019)

In this context, it is worthwhile to consider the future of GaaS model. With the development of technology like VR and AR, the forms of games are changing with the innovation. Our interviewee considered that the technology innovation is the new channel for game developers to transfer their content and it can be a compliment into the core product if the developers have niche products like VR or AR games.

"And I think for whatever innovation, we see new gadgets; I think that must remain true in that if you're introducing sort of needs to blend into the rest of the experience that you get on

other platforms. And there might be ways where the companion app or something that is like a component to the game that just enhances your connection to it." (Dennis, 23 May 2019)

Cross-case discussion

The interviewees were asked about their opinions on the evolution of the GaaS model. The interviewees of Tarsier Studios and Massive Entertainment highlighted the significant role of cloud games and streaming in the future development of GaaS. However, David (Massive entertainment) believed that the streaming is not hard to achieve in terms of technical support, but cloud gaming needs both technology and infrastructure to support. Dennis (DICE) considered that the specific genres or specific qualities for cloud games are the future components. As for the innovation of the business models for advances in technology such as VR and AR, all our interviewee believed this would become the popular form of gaming in the future but not limited by GaaS. All the interviewees agreed that the AR would be more visible and accessible by games because it has less site and equipment restrictions than AR. After preliminary research, we noticed DICE had a large employee turnover which we thought could be a factor for GaaS. Inconsistent with our expected results, Dennis (DICE) concluded that the overall employee's turnover has no connection with the implementation of GaaS model.

David (Massive entertainment) also noted the market cap would dissolve as the model allows games transcend traditional mediums and become more available on devices such as smartphones

The interviewee Qiyue (Wuhan Buling) discussed how IP's would lead to a change in the business model, while Andreas (Tarsier Studios) agreed they were low risk. However, Dennis (DICE) claimed that IP's were not enough to sustain the model.

5 Discussion

In the following chapter, the findings are discussed and the conclusion to our research question is proposed. Firstly, GaaS is distinguished from the strategy of the firm, as a business model. Secondly, as previously discussed in the literature review (section 2), the key components are identified for designing the business model based on the data collected in the empirical section. Thirdly, the definitions are analysed from data collected in interviews by companies in the gaming industry, and an academic definition of GaaS as a business model is created and presented. Finally, in line with the objectives of the study, the corresponding long-term strategic impact and development of the GaaS model are illustrated.

5.1 Distinguishing GaaS business model and Strategy

As outlined in the literature review, Chapter 2, three distinctions were established between a business model and the strategy of the firm. The distinctions of the business model and strategy are based on the differences of the definitions of the business model and strategy, how the business model is concerned with value creation and the key components of the business model.

As discussed in the empirical findings, building a long-term value enhancing the relationship with customers can be seen as the purpose of GaaS. The empirical data indicated that the purpose of the GaaS business model is not consistent with the definition of strategy provided by Porter (2001), but a value-based customer interactive relationship. This is consistent with

the definition of a business model provided by Teece (2010). All definitions of the models by the interviewees focused on the value-adding aspect of the business model.

Secondly, as discussed in the literature review, the business model can be more generic than strategy (Teece, 2010). The GaaS business model is not a specific strategy aimed at achieving the goals of the company, but a model to create value and build on a set of components. In line with the main argument provided by the scholars (Arend, 2013; Cadadesus-Masanell and Ricart, 2010; Sedden and Lewis, 2003) the main distinction between strategy and business model is about the value creation for the stakeholders. The GaaS business model operates to connect the firms and customers, adding value through the ongoing services. According to the empirical data, customer feedback ensures that all stakeholders have a voice in the development of the service. Margetta (2002) the business model does not factor the competitors of the firm, but how the business model covers costs and revenues of the firm. It can be seen from our findings that the GaaS value creation significantly increases the revenue of a company in a short period.

Thirdly, as outlined in Hedman and Kalling (2003), a differentiating factor between the firms' strategy and the business model, is the key components of both. While the strategy focuses on the long term competition between firms, the business model is the blueprint of how a firm operates and creates value for its stakeholders. To adequately distinguish the GaaS business model from strategy, the key components based on Johnson et al. (2008) are discussed in the next section (5.2).

5.2 The key components of Gaming as a Service

The literature review establishes multiple business model components to illustrate. The following discussion concentrates on the four components provided by Johnson et al. (2008). This was decided after Johnson et al. (2008) components were presented by multiple scholars and is the most cited academic source. The four main components of Johnson et al. (2008) are the customer value proposition, profit formula, key resources and key processes. The components also contain elements which influence the four main components. The business model components is a key process in the evolution of the business model outlined by Osterwalder et al. (2005)

5.2.1 Customer value proposition

According to Johnson et al. (2008), Customer value proposition (CVP) focuses on the method used by the firm to create value for customers and can be divided into three second-order elements including target customers, offering and job to be done. In addition to Johnson et al. (2008), other scholars (e.g. Lindgardt et al., 2009; Osterwalder, 2007; Shafar, Smith and Linder, 2005) also view customer value proposition as the essential component for a business model.

The GaaS business model radically alters the traditional business model of the video game industry. Video games have transitioned to a product that incorporates a service, expanding the offering beyond its boundaries and is concerned with creating lifetime value for consumers. As for the offering, the empirical data claims the developers provide continuing services such as updating video game versions, new virtual goods, and community operations.

The empirical data suggests that the combination of game and the ongoing service are the offering.

The research also concludes that the adoption of the GaaS model allows companies to target unique consumer groups which were not easily identified under the traditional model. This initially addressed by Bagga (2011) and is a vital aspect of the model. The empirical data suggests that firms are now concerned with reducing access to the games, increasing the target market beyond traditional consumer groups. However, the “Job to be done” of video games remains the same, as a source of entertainment for the user. Under both the traditional and GaaS models, the essential needs of the consumers are satisfied.

5.2.2 Profit formula

The profit formula component is how the firm creates revenue from the CVP. It is advised that the firm establish a profit formula before the CVP to capitalize on the value created and obtain revenue (Johnson, 2008). Osterwalder (2005) stated that the revenue stream is one of the essential components in the business model and method that the company can earn revenues from the CVP. The key elements of the profit formula are the cost structure, margin model and resource velocity (Johnson, 2008).

The adoption of the GaaS model could be considered as a revenue model innovation by Giesen et al. (2010). The model alters how revenue is obtained by the company, departing from traditional single payments to consistent revenue-generating value creating through the increasing lifespan of the service.

Under the traditional model, the cost structure of the firm was based on sales on the cost structure of the firm changes as more resources must be allocated to post service maintenance.

The cost of adopting the GaaS business model increases developmental costs. The costs are no longer restricted to a specific period pre-launch but occur with the continued live service.

The empirical data indicated that the GaaS business model enables the creation of evolving games. This results in increased usage of the offering and more revenue for the firm. As discussed in the case study of Tarsier Studios and Massive games, adding additional content requested and desired from the community ensures a steady stream of profits for the firm.

This can be seen in the increase in industry value between 2012-2019 presented in Figure 2.

However, the business model incurs additional costs to the producer. The firm must consider the resources necessary to maintain the service. The resources needed for a successful service must be allocated in the initial strategy of the game, and continuously reviewed by the firm to match investments with profit.

5.2.3 Key resources

Johnson et al., (2008) described “key resources” as; the assets such as people and technology required to deliver the CVP to the target market. The foundations of a business model are built on the essential resources needed for the business model. The data indicate that the key resources are not limited to traditional model resources such as human resources and tangible assets, but our data indicate that the GaaS business model requires intangible assets that are difficult to quantify.

A key resource identified in the data was the need for established intellectual property. Brands and franchises that are known by the consumer now hold significant value for gamers. The data indicate that they wish to invest in brands they are aware of.

Another key resource that the data found was the increase in data from consumers available to the companies. Under the GaaS model, they can find customer data that was not present with the traditional business model.

Another key resource for companies to source more customers is mobile channels. The need for the company to adopt a cross-platform approach with games was also evident in the research.

5.2.4 Key processes

Johnson et al. (2008) defined that the key processes in the business model is to make the effective delivery of the customer value proposition repeatable and scalable. When viewing the empirical data, it becomes clear that it is vital for companies to strive to have a customer and developer relationship. The development in technology allows for feedback and the subsequent updates for the games. Although the GaaS highlights the post service after the launch, the initial designing process is more important due to the content is the key factor to the players and the marketing strategies are all based on the content. Especially for AAA game developers, the product development process should be long enough to make sure the quality of the product itself. Johnson et al., (2008) also considered the elements, including rules and norms, should be the key elements in key processes. The GaaS business model also needs to have its rules and norms, providing the basic requirements for investment for different tasks including outsourcing, hiring and marketing. This is an important element to address as Chesbrough (2010) discussed that the key processes of a business may be altered after the change in business model and may not be suitable to other industries.

5.3 Conceptual definition of Gaming as a Service

In conclusion, the objective of this study was to create a definition for GaaS from a strategic management perspective. The conclusion of Gaming as a Service draws upon the information collected from the primary sources, secondary sources and the definitions of a business model outlined in the literature review. Osterwalder et al. (2005) stated that the first stage of creating a business model was to define it. However, the key components must be presented to accurately identify the definition. As a result, the study defines Gaming as a Service as:

“Gaming as a Service is a business model that focuses on a system of interdependent elements and components that are connected to create perpetual, ongoing, lasting value and revenue, creating an ongoing relationship with the community, by expanding the lifecycle and boundaries of traditional video games”

The definition is consistent with execution success of business models described by Giesen et al. (2010). The definition concludes the model is aligned with customer value, analytical to gain insight and enabled by an adaptable operating model. The above definition divides GaaS into four different dimensions, the essence, activities, lifecycle and components. The essence of GaaS is to create value for customers by operating an interactive community; the activities are based on providing continuing services and related virtual goods; the lifecycle of GaaS model starts from the developing stage and continues with the service element. The components of the model are described in section 5.2.

The above definition allows for a satisfactory conclusion to the first distinction of strategy outlined in section 2.2. The definition clearly distinguishes from the long-term strategy of the firm, allowing a more generic blueprint for firms to follow. The second distinction between a

business model and strategy focused on its necessity to value creation. The definition of GaaS illustrates the value created for all stakeholders relies on the interdependent activity and components, expanded upon in section 5.2. The definition allows for companies to understand how to create value from the model and build a strategic system to accommodate it. The above definition sets out the value capture for the firm that adopts it, due to the unending lifespan of the video games. Thirdly, the results of the definition find the key components of the business model differ from those of a firm's strategy; the primary focus of section 5.2.

5.4 Impact and development of the GaaS business model

The empirical research outlined multiple key strategic challenges that will arise as the industry shifts to fully embrace and adopt the GaaS business model; there will be a shift in the strategic options of the firm. The key components of the business model establish the challenges of the development of cross-platform games, cloud gaming service, the known intellectual property, managing customers relationships and post-game services will be the primary strategic focus under the model. We were surprised by the discovery of the findings of future cloud gaming services in gaming companies. The initial research proposed that this method would not be suitable for the video game industry. The above challenges will not only affect the strategy creation but may see the evolution of the business model or a new model adopted entirely.

Despite the indication of initial upfront investments in mechanisms to enable the GaaS model, the empirical data indicates that the companies who adopt the model see a significant return

on the investment. This can be seen in Table 3, with companies reporting a substantial shift in revenue with the adoption of the model.

The business model also focuses on the community value aspect of games, which was absent from traditional video game models. The balance of customer value and company profitability is based on the size of the developer and the stage of development. The empirical findings imply that providing live service is a long-term strategy, and the value-added activities are significant for both small studios and big developers. Furthermore, serving the player community will be the area where companies deliver their value to the customer.

According to Teece (2010), technology changes, specifically communications and the computing industry, need to the business to adopt a consumer-centric approach, ensuring the customers' needs are met. Based on our data, we have confirmed Teece (2010) findings with the GaaS model. As a result, Teece (2010) stated that technology innovation in the video game industry had amplified the need for business to find ways to capture value more astutely. The data indicate that the GaaS model allows companies to capture the additional value created from the enabling technology.

6 Conclusion

In conclusion, the research landscape and academic investigation of the Gaming as a Service business model are under-researched. Existing literature has focused on the platforms and social contexts of gaming and does not focus on the business model from a strategic management perspective. In line with the purpose of this study and its three sub-questions, the study allows for the creation of a definition of the GaaS model, identifies the key components and suggest the future strategic impact of the business model within the industry.

Firstly, based on the empirical data and literature that GaaS is defined as “Gaming as a Service is a business model that focuses on a system of interdependent elements and components that are connected to create perpetual, ongoing and lasting value and revenue, creating an ongoing relationship with the community, by expanding the lifecycle and boundaries of traditional video games ” . An essential element from the definition is the value orientated approach. The definition conveys the importance of creating, designing and sustaining a community with consumers is essential to the long-term strategic implications and success of adopting the model.

Secondly, the empirical findings and existing literature allowed the researchers to identify and describe the key components of the model, based on the components established by Johnson et al (2008), which are predominantly value focused. Based on empirical data, the business model varies among companies with different situations, including size, strategic position and work content. The large developers should focus more on the ongoing service for GaaS, building the long-term relationship with their customer due to their large resource base while

the smaller studios should focus more on the IPS building and revenue increase in GaaS. The adoption of this model outlined by Chesbrough (2010) depends on the organization's culture to adopt a GaaS model, the internal leaders and middle management.

The empirical findings contained within this study addresses the need for managers to continuously review the technological advancements within the industry and adjust the business model accordingly. This will ensure that companies will be able to provide value for the community and users it serves. The companies seeking to implement a successful GaaS business model must review their resources and infrastructure to review its viability. In particular, the suggestion is made to managers to look at resources that they will commit post game to continue the viability of services, thus allowing for the service to be an instrumental part of the user's experience.

This study of the business model and strategy focus from the perspective of strategic management excluding social science, engineering, information science and other areas. A study from a different discipline may yield other results. The literature review revealed the broad study and perspectives of the business model. It is a broad area that cannot be covered in its entirety within this study. The responses from the interviewees discussed in the empirical study may be biased towards the GaaS model as it is a primary revenue driver within the industry. A limitation of the study was the number of case studies. While they explored both large and small enterprises, further study with many firms would be beneficial to add to the model. Hence, the application of the deigned GaaS model may be limited in developers with similar business. In light of these limitations, we suggest that further studies are conducted as new technology and GaaS methods emerge. We also believe that further research into revenue generating aspects of GaaS such as freemium is warranted.

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Appendix A:

The history of Video Games and the industry:

Video games are considered a recent innovation in the entertainment industry. The inaugural home gaming console was released in 1972, called the “Magnavox Odyssey” and was followed quickly by the commercially successful Atari in 1975 (Wolf, 2008). The term “video game” was still not a commonly used terminology, and was considered a close circuit electronic playground (DeMaria and Wilson, 2002). Since then, home entertainment consoles have been released to the market in waves or generations (Davis et al,2015). From 2012 to present , we are considered to be in the eighth generation of consoles, with Sony’s “PlayStation”, Microsoft “Xbox” and Nintendo’s “Switch” dominating the market share (Davis et al, 2015).

However gaming was not restricted to the just home gaming consoles. As personal computers became more common in households, so did games to complement it. As mentioned above the games were initially produced for educational purposes for the new technology. However they developed similar to the consoles, as games progressed to incorporate various genres and capture a greater portion of the segmented market. In recent years, smartphones have opened the gaming world to more consumers than ever before. Games can easily be downloaded from the various application stores such as the app store.

Not only did the output increase from 8 bit to 1080p, from pixels to life like graphics, but technological advances allowed the player to move beyond the traditional controller and use real world actions and movements to control the game (Moersen, 2018). Popular examples of this are the Nintendo’s Wii or the Xbox Kinect, where the player are the controller. As technology progresses, these changes take a different approach such as augmented reality blending the real world with the game. This was popularised with the popular game

“Pokémon : GO”(Knapp, 2018). Technology allowed players to also create virtual worlds with the introduction of VR or virtual reality, altering the perception of the user.

The advent of the internet brought with it multiplayer and MMO's, also known as massively online games where people around the world could continue the culture of arcades as players strive to once again top the leader boards. This also marks a new shift from single player games to online games. With the development of online games, the new gamers prefer to play games on PC and the internet also make it accessible for game publisher release games on PC instead of the offline packaged game store. We can see that the way gamers purchase their games has changed from traditional brick and mortar stores to online market places such as Valve's Steam platform on PC (Lin et al, 2017).

Appendix B:

Interview Guides

Tarsier games

Introduction:

- We know you started as a small start up in, some say in 2004 as team Tarsier changing to Tarsier games in 2009, with 7 employees, can you tell us more about your background?
- How do you feel taking over from a previous CEO Mattias, who won Swedish CEO of the year. What made him unique, what makes you different or unique?
- Why did you decide to make your own games and move away from Sony?
- How do you feel you excel past competitors?
- Why did you change target demographic with Little Nightmare as opposed to Little Big Planet, was that because you separated from Sony? Was this a financial decision?
- How much did City of Metronome influence Little Nightmare?

Collaboration:

- How does changing publisher affect the content you create?
- How did you get in contact with Sony for such an ambitious project like Little big Planet? What was it like to work with Sony
- How was your strategy affected by Sony?
- How is your current relationship with Bandai Nando.
- How do you collaborate with companies that license your product?
- What was the difference between moving from just producing DLC to a full game for PS Vita? You quoted this in a release interview.

GAAS:

- What is your current opinion on the business model movement towards a gaming as a service model? What is your definition of it?
- Your game Little Nightmare had 5 pieces of DLC, did you plan this pre-launch or only after the success of your game?
- How did it extend the lifespan vs Statik?
- Is this the reason why have you not released any DLC for Statik?
- Recently Little Nightmare has gone to mobile, Will we see more of your games going mobile? What strategy would you like to adapt?
- Have you adapted a generic strategy for the global market or specific to each region.
- Would you consider a trial of Statik as a GaaS model type?
- Do you think financials and revenue is now being prioritised over customer experience and needs?

Future of GaaS

- With reference to Statik, do you think VR is compatible with the GaaS model? Why do you feel that VR does not get as much add ons as traditional games in general?
- What do you see as the future innovations in the area?
- When do you think customers would revolt, and refuse to pay?
- Do you think the industry can focus on one platform, like Statik, or have to encompass all platforms. Will you develop cross platform? Or will you stick to one platform?
- Do you think review embargos will become the norm for the industry to mask microtransactions in games? We noticed you had no embargo for Statik
- Do you think GaaS is sustainable as a long term business focus as adopted by companies like Ubisoft?

Massive Games

Introduction

- We have read so much about Massive games and you, can you tell us your story in your own words?
- With that, and beyond increasing the employee's from 40 to over 400 how has the company changed with the increase in successful titles?

- We read and discovered you view other games to see what they do well, would you say this is your main competitive advantage or if not what is?

GaaS

- Around two months ago, you said that “We made a conscious decision to rethink the live-phase. Instead of thinking of it as ‘games as a service’ we redefined it as ‘games as a relationship’” our thesis is to study the effects of GaaS. With that what is your opinion on Gaming as a service, could you define it?
- Has the strategic decision to push for games with this model been made inhouse or by Ubisoft. If so could you explain? We noticed that you released 11 different paid DLC(via steam) for the Division from 2016-2017, and was it a financial success? How was it different to once off stand alone games.
- You said in an interview that “The Division was going to be the champions league of games”. Do you think GaaS opens all games to the entire market, and that segments no longer need to be catered for?
- Do you feel this model prioritises revenue over the customer experience, why or why not?
- Media reports suggest that Avatar will be based on the GaaS model, is this true? Will it be supported by a team?
- How does your strategy change based on geographic regions, or does it remain homogeneous ?
- Which platform has the most revenue for you? Why have you not expanded or developed any games for the mobile market
- How long do you feel the lifespan of games like Division 2 can be expanded for in line with GaaS, Indefinite?

Future of GaaS

- How do you see GaaS Developing? PVP Modes or some other mechanism to get players to engage?
- What do you think are the main threats to this Business model?
- Do you think it can be adopted long term? Do you think it will shift from a Freemium with microtransactions or remain purchasing a game with add ons?
- What is your opinion on the adoption with new technology such as VR and AR, will you incorporate them in the future?
- What’s your opinion of cloud gaming service to GaaS since Sony, NVIDIA and Microsoft are trying to build a new platform for cloud games.

Wuhan Buling Games

Introduction

- How does the publisher influence your development strategy?
- How do you collaborate with your publisher, how do they interview strategy ?
- We found that the regulation for releasing games in Chinese market is quite complex, can you explain how this influences your strategy?

GaaS

- How do you feel China differs from the global market in terms of video games?
- There are currently no definitions of GaaS, and we suppose every entrepreneur has their own definition, how would you define it?
- Do you feel it will be the industry standard business model. Tencent and NetEase are the leaders of operating games and providing ongoing service, are known to use these models?
- What is your opinion on Gaming as a service, do you think it has had a positive impact? Why or Why not?
- We noticed that your games are released to the global market. How does your strategy change based on geographic regions, or does it remain homogeneous ?
- We also noticed that your game Brain Machine has been released on different platforms, Does the strategy vary between them, for instance mobile?
- Which platform has the most revenue for you? How do you think the role of mobile device in GaaS?

Future of GaaS

- How do you see GaaS Developing? PVP Modes or some other mechanism to get players to engage?
- What do you think are the main threats to this Business model? (for China and globally)
- Do you think it can be adopted long term? Do you think it will shift from a Freemium with microtransactions or remain purchasing a game with add ons?
- What is your opinion on the adoption with new technology such as VR and AR, will you incorporate them in the future?
- What's your opinion on the startups' business model in gaming industry? For example, do you think GaaS can be applied well to the small studios? Or does it only work for AAA titles.

- What components or capabilities do you think are enable a successful adoption of the GaaS model?
- We want to discuss some more about the importance of IP to game developers, what's your opinion about that? What do you think is the main Chinese IP?

DICE

Introduction

- We have read so much about DICE, we are big fans of Star Wars BF2, can you share us about your story and background?
- We found the number of employees in 2016 was 640, has it changed a lot since? It has been 3 years. Do you think that competition for employees is high with Sweden being a hub for game development?
- You have a lot of IPs compared to other game developers, particularly those with “hardcore” fan bases such as Star Wars. Would you say this is your main competitive advantage or if not what is? Most importantly what challenges do these IP'S bring for you?
- How does your publisher (EA) effect the strategy?
- You have been at Dice since 2013, how has the development and strategy changed in your time period?

GaaS

- In your opinion, what is gaming as a service? Given that almost all of your games are providing ongoing services and updates? Some have described it as gaming as a relationship.
- When designing your games is the primary strategy to incorporate GaaS?
- Do you feel this model prioritises revenue over the customer experience, why or why not?
- Why have you not expanded or developed any games for the mobile market. How do you think this market will expand?
- How has the process for GaaS altered the internal structure of the teams.
- How does your strategy change based on geographic regions, or does it remain homogeneous ? For what do you think of the regulation in China?

Future of GaaS

- How do you see GaaS Developing? What innovations do you think will occur? Do you think PvP models lead to this.
- What do you feel is the lifespan of GaaS?
- What do you think are the main threats to this Business model? Consumer backlash for instance?
- Do you think it can be adopted long term? Do you think it will shift from a Freemium with microtransactions or remain purchasing a game with add ons?
- Do you think it is a viable long term strategy?
- What is your opinion on the adoption with new technology such as VR and AR, will you incorporate them in the future? We saw this in the first BF game.
- What's your opinion of cloud gaming service to GaaS since Sony, NVIDIA and Microsoft are trying to build a new platform for cloud games.
- Do you think GaaS will become more consumer centric, we see this on your continued addressing of issues on reddit
- How do you feel this strategy will be globally?
- Do you think base games will be free, and have premium content in them?