Exploring co-creation experience and value in the video game industry: how gamers create value through a rule changing online game that has no rules

Author: Jamie Lee Jo Grohn
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT

Purpose/ Gap – With the shift from goods- to service-dominant logic, it is crucial to effectively enable value co-creation through suitable value propositions. Formulating value propositions includes insights on the customer's preferences, capabilities, and expectations, which can be obtained through the customer's co-creation experiences, since they are the foundation of value. However, there is a limited amount of research in this area, especially from the customer's perspective. In order to close this knowledge gap and successfully facilitate value co-creation, the aim of this study is to explore the nature of value co-creation through the customers' co-creation experiences and their implied determinants. This is done through a case study on the online video game Minecraft, due to its open innovation-friendly environment, allowing for a wide range of co-creation options.

Methodology – Data was obtained through a netnographic approach in community forums and video platform. A total of 84 threads and 169 posts within 6 forums, as well as 23 videos have been selected and analyzed.

Findings – Four distinct areas of value co-creation have been identified in the game, which enable personalized experiences and values. The game's technological and connective environment, the customer's role readiness, and the nature of interaction shape co-creation experiences. Additionally, evidence indicates that co-created value is not only generated through a developer-to-gamer relationship, but also between gamer-to-gamer relationships with the developer as facilitator.

Theoretical Implications – The research contributes to the emergent literature regarding co-creation in virtually and technologically connected environments from a customer's perspective.

Practical Implications – Since customers are the main creator of value, it is important to implement co-creation practices that allow customers to individually create their own co-creation experiences with a low degree of restrictions.

Originality/ Value – The study highlights potential co-creation practices and learnings from an eminently innovative industry, which can lead to business success when implemented.

Graduation Committee members:

Dr. R.P.A. Loohuis	**1st Supervisor, University of Twente**
Ir. B. Kijl	**2nd Supervisor, University of Twente**

Keywords

S-D Logic, Value Co-Creation, Co-Creation Experience, Video Game Industry, Netnography, Case Study

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

9th IBA Bachelor Thesis Conference, July 5th, 2017, Enschede, The Netherlands.
Copyright 2017, University of Twente, The Faculty of Behavioural, Management and Social sciences.

1. INTRODUCTION

Offering ideal services by understanding what customers value is key to business success in service marketing (Kotler & Keller, 2009; Lindgreen, A., Hingley, M. K., Grant, D. B. & Morgan, 2012). With the shift from a goods-dominant logic, where outputs were tangible and transactions discrete, to a service dominant logic, where outputs are seen as intangible and coproduced by customers, new insights on value exchange processes are revealed (Vargo & Lusch, 2004). In the past, consumers were not involved in the process of value creation and were seen outside the firm's sphere. Now, the new logic implies that services and relationships play a fundamental role (Vargo, Maglio, & Akaka, 2008). Firms act as service providers by proposing a potential value, whereas customers are the ones who create the actual value in the co-creation process in collaboration with the firm (Grönroos, 2011; Grönroos & Voima, 2011; Prahalad & Ramaswamy, 2004; Vargo, Maglio, & Akaka, 2008). Interactions that allow customers to co-create experiences provide companies the opportunity to achieve a competitive advantage and are the basis for value creation (Prahalad & Ramaswamy, 2004). Thus, marketers need to be aware that customers are increasingly involved through co-creation in value creation, which raises the importance to observe how they experience, emotionally and cognitively, a service and its values (Ellway & Dean, 2016; Grönroos, 2011; Prahalad & Ramaswamy, 2004). Industries that create unique opportunities and innovation through the usage of digital connectivity, collaboration, and technological advancements provide a highly supporting environment for co-creation (Curley & Salmelin, 2013; Nambisan, 2002). Especially the video game industry entails a unique set of requirements and provides an open innovation-friendly environment, which make this industry suitable for a wide range of co-creation options in the value creation process (Aoyama & Izushi, 2008). Prahalad & Ramaswamy (2004) also emphasize the importance of co-creation in the video game industry by arguing that video games could not exist without active co-creation with customers.

In recent years, the video game sector has developed from a niche segment into an enormous global industry and is seen as the "vanguard of technology" that appears to be unerring (Fabricatore, Nussbaum, & Rosas, 2002; Langlotz, Rhode, & Whaley, 2008; Wolf, 2007). By integrating and making use of new media, platforms and technological advancements, the market grew significantly in the last decade and eventually achieved a revenue of $101 billion globally in 2016, making it to one of the most attractive industries in the past decade (Newzoo, 2017). Video gaming platforms and communities such as Twitch or YouTube Gaming allow for great reach of games to a large audience and connect developers and gamers (Gilette & Soper, 2015). Additionally, with the rise of smartphones and applications, mobile gaming became relevant and enables on-the-go gaming, creating a new and lucrative market segment in the gaming industry (Rogers, 2014). Today, video games have reached mainstream and new gamer target groups will further evolve, which will pave the way for even more new gaming developments (Fabricatore et al., 2002). Although the term "video game" appears to be self-explanatory and implies simple gaming on screens or portable devices, the boundaries of the definition have blurred over the last years with the advances in imaging technologies, creating new software and hardware (Wolf, 2008). Consequently, the industry's nature of incorporating a diversity of technical devices, narrative structures, art styles, and game play mechanics in the game development, imply various possibilities on the outcome of the game (Lee, Karlova, Clarke, & Thornton, 2014). In general, video games can be categorized in different genres due to their objectives and game mechanics (Apperley, 2006). With the variety and complexity of games, the identification of the consumer and his preferences in order to satisfy the overall target market is even more essential in the gaming sector (Fabricatore, 2007). The degree of satisfied needs, expectations, and preferences can determine the success of a game (Kotler, 2000).

In context of the video game industry, video game developer, or more specific games, provide the foundation for value creation in an exchange process by proposing potential benefits to the gamer (Fullerton, 2008; Salen & Zimmerman, 2004). In the value creation process, when interacting with a game or game entities, the player is the main value creator (Fabricatore et al., 2002). Hence, gamers act as active participants, who perceive and determine their unique experienced value (Prahalad & Ramaswamy, 2004). However, games may facilitate many ways of co-creation through their environment and nature of the game, which might be unintentional and outside their control (Fabricatore & López, 2012). Exploring this outlined knowledge gap especially in the video game industry can provide valuable insights and reveal opportunities on co-creation practices in this industry, which in turn help businesses within or outside the industry to learn and produce appropriate value propositions (Hilton & Hughes, 2008). The research will be applied in form of a case study on an online multiplayer game, due to the high degree of interconnectivity and usage of network-capable technology and platforms, compared to other games (Steinkuehler, Duncan, & Simkins, 2006). Online games are loosely structured games where gamers are highly free in their way of playing the game and allow to interact with the gaming software, as well as with other players (Steinkuehler & Williams, 2006). The chosen case study will be the game Minecraft, due to its unique commercial success and favorable game characteristics, which makes it suitable to explore the variety of co-created experience and value. Consequently, the main research question of this study is the following:

(1) How does the online video game Minecraft enable value co-creation in the video game industry?

As a support to extensively answer this question, we also need to answer following sub-questions:

(2) What are the key determinants?

(3) What are the consumers' co-creation experiences and outcomes?

Hence, this research paper aims to explore the nature of value co-creation and the customers' co-creation experience in online video games, focusing on the interaction between a game developer provided co-creation environment and its gamers. The goal is to identify value co-creation activities and their resulting benefits through qualitative research striving to discover implications and best practices that could further reinforce effective value creation. Additionally, this study will contribute to existing literature on co-creation experience. There are limited researches on co-creation experience and values from a customer's perspective (Carbonell, Rodríguez-Escudero, & Pujari, 2009; Hilton & Hughes, 2008; Payne, Storbacka, & Frow, 2008). A variety of studies merely focuses on the firm's perspective in value co-creation and examine the impact on a firms value chain (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010; Kristensson, Matthing, & Johansson, 2008; Mascarenhas, Kesavan, & Bernacchi, 2004; O'Hern & Rindfleisch, 2008; Russo-Spena, Mele, Russo Spena, & Mele, 2012). Additionally, some scholars point out the need for researching in online and consumer-created content environments (Nambisan, 2002; Nambisan & Baron, 2009; Payne et al., 2008). In this study, theory and practice are combined in order to answer the main research question through (1) a comprehensive literature review

of scientific papers and (2) participant observations in online forums complemented by (3) videos on video-sharing platforms of involved gamers. The structure of this study begins with the theoretical background and the resulting research framework. Next, the methodology and data analysis will be outlined, followed by the results. The discussion will target to answer the main research question and imply theoretical, as well as managerial implications. Lastly, limitations and future research will be highlighted.

2. THEORETICAL BACKGROUND

To answer the research question, the context of service systems and co-creation from a service-dominant logic needs to be discussed. A set of theories on value co-creation will help to understand the dynamics and relations in the value creation process. In particular, the theory of co-creation experiences and their determinants will be examined. At the end of this section, a research framework will be provided, which will function as a guideline in this research study.

2.1 Service-dominant logic

Marketing has continually moved away from the idea that customers simply buy and consume tangible products through static transactions (Vargo & Lusch, 2004). Now, markets are more dynamic, recognize exchange relationships, and involve performing processes. Also, consumers become an essential part in the creation of value by being actively involved and are not seen as mere recipients of value (Vargo & Lusch, 2010). Resources are no longer performed or acted on (operand), instead they are used to produce outcomes and effects (operant) (Edvardsson, 2005; Vargo & Lusch, 2004). From this service-dominant perspective, markets need to be understood from a service- or process-centric view and not from an output-centered view (Vargo et al., 2008). Therefore, markets are facilitators of value through continuous processes of exchange between firms and customers (Grönroos, 2011). By only offering value propositions, the value is always individually determined and experiential (Payne et al., 2008; Prahalad & Bettis, 1986; Vargo & Lusch, 2008). Hence, value is no longer delivered, but co-created, which is a fundamental implication in service marketing (Voima, Heinonen, & Strandvik, 2010).

2.2 Co-creation actors

In the co-creation process, the involved interactors, that strive to generate value, need to actively participate and collaborate with each other, in order to generate value (Grönroos & Voima, 2011; Payne, Storbacka, & Frow, 2008). Further, co-creation allows to shape and individualize the consumers experience and outcome, meaning that they become the co-creator of the content (Prahalad & Ramaswamy, 2004). Many studies by marketing scholars on co-creation examine the processes of co-creation between firms (service providers) and customers (value creator) and imply that co-creation only occurs between these two actors (Călin, 2009; Grönroos & Voima, 2013; Prahalad & Bettis, 1986; Prahalad & Ramaswamy, 2004; Wikström, 1996). Yet, few studies have outlined that co-creation does not only occur between a firm and its customer, but also among customers directly (Füller, 2010; Kuzgun & Asugman, 2015). Kuzgun & Asugman (2015) propose, next to the firm-customer dyad, two additional dyadic interactions in the co-creation process; the customer-customer dyad and triadic/complex networks. In the customer-customer dyad, value is derived through exchanges of information and feelings between two individual customers in context of the firm's provided value proposition of its service. Interactions on a many-to-many level occur, if there are more than two actors who interact and derive value from it. These multiple actor relationships are the result of the increased usage of online platforms and social media, enabling people to communicate and exchange with multiple other people on a high scale (Hoffman & Novak, 1997). Hence, value is co-created through the interactions of all included actors, by involving "*value proposed by the firm, value created by the customer, value derived from customer-customer interactions, and value derived from many-to-many interactions*" (Kuzgun & Asugman, 2015). It is important that service providers understand the creation process of a consumer and identify how to effectively facilitate co-creation activities, in order to enhance value leading to business success. (Sheth, J. N., Sisodia, R. S., Sharma, 2000; Vargo & Lusch, 2004). Consequently, the theory of co-creating value will be examined from a service-centered view in the up-coming section.

2.3 Value co-creation

Many researches on value co-creation have resulted in a variety of definitions. Thus, a literature review in table 1 has been conducted in order to clarify the conceptual meaning of value co-creation, leading to a comprehensive and operational definition.

As mentioned, interaction between participants in the value network is key when co-creating value. The value is shaped and determined by the type of relationship, the way of interaction, and how the consumer perceives it (Vargo & Lusch, 2008). An offering can only suggest a value proposition, whereas value is created by the customer (Vargo & Lusch, 2004). This is also reflected in the concepts of value-in-exchange and value-in-use, which imply that resources from the provider sphere need to be

Authors	Description of value co-creation	Main concepts
(Vargo & Lusch, 2004, 2008)	Service market offers value proposition and the customer creates value. Value is created through interaction, relationships, and resources between the involved actors and customers are always value co-creator. Perception and the nature of interaction of a customer determines and shapes the co-created value.	From a dominat-logic view to a service dominant view Premises of co-creation
(Grönroos, 2011); (Grönroos & Voima, 2011)	The provider produces resources (value-in-exchange) in the provider sphere, aiming to facilitate the customers value creation process (value-in-use) in the customer sphere. Co-creation of value happens in the joint sphere through dialogical process and direct interaction. Firms can only deliver potential value, which is transformed into real value by the customer.	Value creation spheres Value-in-exchange Value-in-use Value facilitator, creator, and co-creator
(Payne et al., 2008)	Value is created by experience. The customer value creation process is dynamic, interactive, non-linear, and often unconscious. Value porpositions support the co-creation of experience, which emphazise the relationship of the customer and an offering. Supplier provide co-creation and relationship experience designs	Co-creation experience Relationship experience Co-creation experience design
(Prahalad & Ramaswamy, 2004)	Basis of value are co-creation experiences through heterogeneous interactions. Experiences vary and are personalized. Locus of co-creation between customer, communities and firm. Firms provide experience environments in which consumers are involved and interact, allowing to co-construct the service experience that suit their context	Co-creation experience as basis of value Experience environments Contextual experience
(Hilton & Hughes, 2008)	Co-creation emergent in self-service-technology (SST) domains. Consumer co-creates value derived through usage of the product or service provided by the supplier. Value is experienced. Participation through suggestions, novel innovation ideas, or information sharing, which enable other customers to derive value from it and eventually promote the firm and the product.	Service output experience Co-creation from a SST view Socio-cultural involvement

Table 1: Literature Review on Value Co-Creation and Their Main Concepts

acted on by the consumers in the customer sphere transforming those into value through co-creation in the joint sphere (Grönroos & Voima, 2011). Although Vargo & Lusch (2004, 2008) mention the experiential aspect in the value co-creation process, Payne et al. (2008) go one step further and argue that value is created through experience. These experiences are a synopsis of cognition, emotion, and the behaviour within an encounter process between the customer and firm (Payne et al., 2008). Hence, the process is dynamic, non-linear, and mostly unconscious, stressing the importance of contributing to an appropriate and effective experience environment with a set of resources (Payne et al., 2008). According to Prahalad & Ramaswamy (2004), *"co-creation experiences are the basis value"* and occur in the context of an individual. Therefore, consumers construct their own experiences and values in a network of interactions and systems, because their individuality influence the co-creation experiences (Prahalad & Ramaswamy, 2004). The market can be seen as a forum for co-creation experience, and the co-creation process is two-way, recognizing consumer to firm and consumer to consumer (Prahalad & Ramaswamy, 2004). The integration of the firm, the products and services, channels, and consumer communities constitute the experience environment for individuals (Prahalad & Ramaswamy, 2004). In line with this, Hilton & Hughes (2008) also emphasize that value is experienced. Value is co-created through the usage and sense-making of a product or service. Co-creation experience, especially in a self-service-technology (SST) environment, is influenced by novel innovation ideas, innovation sharing, or suggestions, enabling value generation (Hilton & Hughes, 2008). Correspondingly, the relevance of socio-cultural involvement is outlined in value co-creation. As a result, innovating on experience environments allows for new co-creation experiences benefiting to the derived value of the consumer (Hilton & Hughes, 2008; Prahalad & Ramaswamy, 2004).

In summary, value co-creation entails that:

(1) interactions, relationships, and networks between actors are needed

(2) value is unique and personalized

(3) experience is the basis of value

(4) the environment of the value provider, as well as the individual consumer himself shape experience

(5) value co-creation is highly emergent in technological and community based domains

Concluding, the future success of a business depends on understanding that value is determined through personalized interactions and their resulting co-creation experiences. Gaining insightful information on the determinants of co-creation experience will allow to optimize the co-creation environment and proposed value effectively.

2.4 Co-creation experience

This section will first discuss the context of co-creation experiences before presenting a categorization of experiences and their resulting benefits. In the following, the determinants of co-creation experiences, as identified by Verleye (2015), will be explained and connected to the value co-creation process.

2.4.1 Co-creation experience dimensions

As mentioned, co-creation experiences are the essence of value and deducted by the consumer from the provider (Payne et al., 2008). Due to the nature of individual sense-making and the variety of context settings, experiences can be different and linked to distinct values (Prahalad & Bettis, 1986). The study of Nambisan (2002) supports this by concluding that the way of customer interaction, when co-creating value, is linked to their individual experience which in turn shape value. Especially in online environments and communities, their actual experiences and expected values influence their engagement and nature of participation in the value co-creation process (Nambisan & Baron, 2009). As a result, four distinct experience dimension have been identified in a virtual co-creation system setting being; pragmatic, sociability, usability, and hedonic (Nambisan & Nambisan, 2008). Further, it has been concluded that positive (or negative) experiences lead to positive (or negative) outcomes (values) regarding innovation (intensity of value co-creation of the customer) and the relationship between customer and firm (Nambisan & Nambisan, 2008). Complementarily to these four dimensions, Holbrook (2006) identifies economic, social, hedonic, and altruistic values in consumption experience, adding the economic and altruistic dimension in co-creation experience, since he argues that the customer value can be seen as an interactively created preference experience. In addition, Füller (2006, 2010) has added the cognitive dimension, in which he recognizes the personal skill development and idea generation of a consumer. Table 2 illustrates a comparison of the experience dimensions of the above addressed literature.

In total, six co-creation experiences have been identified; pragmatic, social, personal, hedonic, economic, and cognitive. These dimensions are in line with the dimension identified within the co-creation experience framework of Verleye (2015).

Pragmatic co-creation experiences involve the realization of product relevant information or finding solutions to current needs or personal problems. For example, a digital artist could gather information through online reviews about the features of a certain image processing software. *Social co-creation experiences* imply that the consumer stands in dialogue with other consumers or the community and consumer could ask as an example for the interests of others to meet new people. When looking at p*ersonal co-creation experiences*, consumers mainly seek to acquire recognition or good reputation, through, for instance, personal accomplishments. *Hedonic co-creation experiences* entail joyful or pleasurable activities. As an example, a consumer could enjoy being mentally stimulated by solving a puzzle. *Co-creation experiences that are economic* provide compensations according to the inputs or efforts made. For instance, consumers could earn monetary rewards when contributing to the assets of a firm or a service. Lastly, *Cognitive co-creation experiences* are about skill development or personal growth. Increasing knowledge and improving skills related to a service or product could be one example for this co-creation experience.

Since co-creation experiences are dependent on the facilitators offerings (co-creation environment), the individual consumer (role), and the interactions between co-creation partners, the next section will reveal the determinants of co-creation experiences, which will also give insights about the processes and key activities of co-creation (Verleye, 2015).

2.4.2 Co-creation experience determinants

Verleye (2015) identifies four determinants of co-creation experience: the level of technology and connectivity of the co-creation environment, the role readiness of the customer, and the characteristics of interactions between co-creation actors.

The level of technology is part of the co-creation environment and mainly provided by the firm or product. It is defined as the availability of online tools, devices, and interfaces which enables personalized co-creation experiences (Verleye, 2015). As an example, customers can engage and share a service or idea and even produce a new product in virtual consumer environments (Nambisan & Nambisan, 2008). Though, the level of technology

	(Nambisan & Nambisan, 2008)	(Holbrook, 2006)	(Füller, 2006, 2010)
Pragmatic	Pragmatic (e.g. product-related information)	-	Pragmatic (e.g. need, information seeking)
Social	Social (e.g. community dialogue)	Social (e.g. status-enhancing)	Social (e.g. make friends, help community)
Personal	Usable (e.g. ease to interact and use product)	Altruistic (e.g. personal effect, behaviour)	Personal (e.g. recognition, self-efficacy)
Hedonic	Hedonic (e.g. mental stimulation, enjoyment)	Hedonic (e.g. pleasure, aesthetic)	Hedonic (e.g. playful, curiosity)
Economic	-	Economic (e.g. prizing, compensation)	Compensation (e.g. reward, money)
Cognitive	-	-	Cognitive (e.g. skill development, ideas)

Table 2: Review and Comparison of Experience Dimensions

can strongly vary for different service providers, services engaged in online connected environments tend to have a higher degree of technology (Verleye, 2015). Enhancing experimentation, providing a better visualization of outcomes, increased learning, and co-creation acceleration are the main identified reasons why the level of technology influences the co-creation experiences.

Another part of a co-creation environment includes the *level of connectivity*, which defines the methods of interconnecting parties with each other in the value co-creation process through communication channels, linkages, or support tools. Hence, environments with high level of connectivity facilitate successful co-creation, leading to favorable co-creation experiences and outcomes (Füller, 2010; Verleye, 2015). Virtual consumer environments such as online communities, network providers, or chat messaging are one of many examples that enable a high degree of connectivity.

A *consumers' role readiness* is also an essential factor that determines co-creation experience, since the needed knowledge and abilities of consumers help to achieve the aimed co-creation experiences and therefore outcome (Päällysaho, 2008; Verleye, 2015). Role readiness consists of consumers motivation, role clarity, as well as their skills in context of the service (Verleye, 2015). If a consumer lacks motivation and skill, or is unaware of what is needed, it is unlikely to successfully act as a co-creator.

Lastly, the *characteristics of interactions* between co-creator actors is another determinant of co-creation experiences and takes place within the co-creation process (Verleye, 2015). According to Payne et. al (2008), interactional encounters and relationships shape the co-created experience. Characteristics could be the quality, intensity, degree of acquaintance between two partners (Verleye, 2015).

2.5 Research framework

A research framework, which visually illustrates and connects the discussed theoretical background, is used as a guidance for this study aiming to effectively answer the main research question (RQ1). In addition, there are two focus areas, representing the two sub-questions. There are three spheres, indicating the firm and customer, as well as the co-creation encounter (Grönroos & Voima, 2013; Vargo & Lusch, 2004). Within these spheres, the four identified determinants of co-creation experience are embedded, since they correspond to the respective sphere (Verleye, 2015). The concept of co-creation experience determinants is used to gain insights about the key processes (RQ2) that influence and enhance co-creation experiences and values (Payne et al., 2008; Prahalad & Ramaswamy, 2004). Co-creation experiences and their outcomes and values can vary and be shaped through different sets of determinants and co-creation processes (RQ3). Gathering valuable insights about these outlined areas will shed light on how online video games enable co-creation in the video game industry.

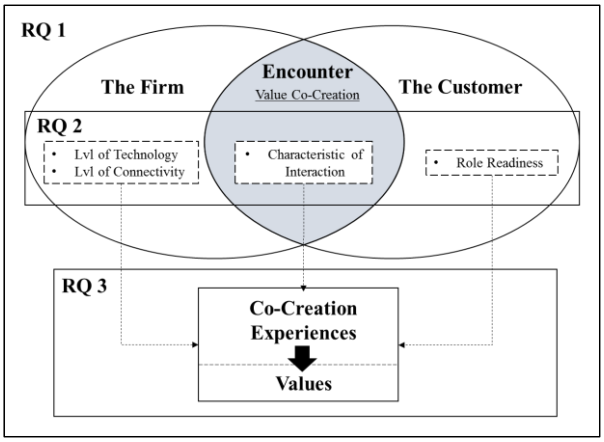


Figure 1: Concluding Research Framework

3. METHODOLOGY

In contrast to literature reviews, an empirical study enables to gain valuable insights on real world practices through direct or indirect observations (Strauss & Corbin, 1990). Therefore, an empirical approach was conducted in this study through qualitative research methods. It provides a suitable way to explore how online video games enable value co-creation, since the interest lies on *how* and *what* decision and processes are made (Alasuutari, 2010). Additionally, the totality of the situation can be grasped through the profundity of research, enabling to understand and explain unknown contextual conditions or complex phenomena (Bogdan & Taylor, 1990). In order to investigate the details and depth of the chosen research environment, a case study will be used with the focus on online video games (Thomas, 2011). The resulting empirical evidence exposes the co-creation experiences and values, and their entailing determinants from a customer's perspective, which are crucial to answer the proposed main research questions.

To gain these insights, the environment, and consumers of the selected game needs to be closely observed. Since the majority of activities and contextual dialogues happen online through digital interactions and communities, a netnographic research method will be applied to use these conversations as data.

3.1 Netnography

Next to being mere marketing tools to marketers, online platforms, social media, and online communities should also be considered as a way to generate high-level consumer insights (Kozinets, 2005). The term for this method is called netnography, which can be seen as ethnography adapted to the complexities of technologically and virtually mediated social environment (Kozinets, 2005). This method focuses on social interactions and pays close attention to the context of these interactions. Hence, these derived conversations and interactions are used as data. Netnography implies that these virtual interactions can be used by marketers to adapt marketing activities in regard to *"brand perceptions, […] trend identification, new service models for co-creation of value, […] and opportunities for marketing campaign activation"* (Kozinets, 2005). Consequently, the approach offers greater insights into the virtual and computer-mediated environment in regard to the role of involved consumers and the used product or service (Xun & Reynolds, 2010). The derived raw data in the online environment has the advantage to be detailed, naturally-occurring, authentic, highly involved and often creative, which perfectly fits to the type of knowledge needed for this research study (Kozinets, 2015). Compared to other stand-alone data collection methods, such as focus groups, surveys, or face-to-face interviews, the data from online consumer interactions are obtained in an unobtrusive, unelicited and relevant way (Kozinets, 2005). This results in generating favorable primary data that is credible and immersive (Bengry-Howell, Wiles, Nind, & Crow, 2011). Additionally, combining it with other methods, like videography, allows for data triangulation, which enhances the variety of sources and allows for a deeper understanding (Guion, Diehl, & Mcdonald, 2011; Kozinets, 2015). Hence, the netnographic approach is a very strong and fitting method for this research.

3.2 Sample

To identify the variety and depth in the phenomenon of value co-creation in online video games, an information-rich game including its gamer base will be analyzed in form of case study, being *Minecraft* (MC). Covering this case sample by gathering data through the players provides more insights and generalizable knowledge about the causal questions in this study, leading to an extensive answer on how online games enable value co-creation (Zartman, 2005). Hence, the players involved in MC, as well as the game itself, are the observed sample in this research. Nevertheless, the nature and specific attributes of the game needs to be outlined and described in detail in order to provide a reasoning and basic foundation for using this case (Zartman, 2005)

The game has been selected, because of its immense popularity, commercial success, and innovativeness, making it to one of the bestselling games of all time. MC is virtually connected and can be player together with other gamers online, enabling sharing, communication, and other various interactions. Additionally, creation and building elements are the core characteristics of this games, which enables a high degree of creativity and customization, allowing the player freedom in their game play and creating own experiences. Another feature is the unique in-game environment, art style, and game mechanics and was created as a completely new game by a Swedish game developer. Together with Microsoft studios and Sony Interactive Entertainment, the game was published on nearly all available platforms, making it highly accessible to many gamers. However, with every platform, an adapted version of MC has been developed. Nevertheless, the core features remain the same for every version. For a more detailed description of the game, a fact sheet can be found in appendix 1.

3.3 Data collection

Relevant data will be deducted through involved gamers of the MC case study as primary data. These gamers can be encountered and observed online in various ways (Lankoski, Björk, & Stirling, 2003; Xun & Reynolds, 2010). Following the netnographic approach, the data will be collected online and in two ways; through participant observations in online forums, as well as through videography. Forums have the overall advantage to contain a vast amount of information relevant to the game (Im & Chee, 2006). Videos complement the recorded information in online gaming communities and ensure verification or highlight inconsistencies (Kozinets, 2015). Hence, they act as tool and visualize topics, explanations, or support and give voice to research participants (Jewitt, 2012).

3.3.1 Online Forum

Online forums enable electronic data collection by providing a rich amount of insights on how consumers exchange ideas and knowledge, discuss, argue, make friends, play games, share support, or make plans (Im & Chee, 2012). Furthermore, they are easy to use, accessible, unobtrusive, and provide media support, such as commenting or hyperlinking (Lankoski et al., 2003). Consequently, the documented actions enable to explore the gamers interactions with the game and other gamers and give an analytic perspective, which perfectly suits to the requirements and aim of this study (Lankoski et al., 2003). These interactions and conversation of relevant online forums will be observed and analyzed, which are either official forums, unofficial fan forums, or sub forums. Forums are usually very structured and classified in topics and sub-topics, covering many different subjects or matters. Nevertheless, the high amount of conversations and variety of topics in forums cannot be observed completely, which emphasizes the need of only gathering relevant data information data. Kozinets (2005) as well as Im & Chee (2012) suggest in this case to make use of computational tools or software in order to carefully select, manage, and analyze data. For instance, search engines or functions in forums enable to easily source and track knowledge of interests, allowing to reduce the amount of information efficiently leading to collecting relevant data. A total 84 threads and 169 posts within 6 forums have been selected and analyzed. Appendix 2 provides a comprehensive description of the observed forums.

3.3.2 Videography

Videos can be utilized effectively in an exploratory research design and act as an extended data-discovery next to online forums (Jewitt, 2012). Hence, it reinforces our empirical study by complementing and comparing the interactions and activities deducted from online forums. Additionally, means and processes in video games, which might just be discussed in forums, can be extensively displayed, which makes it easier to understand and interpret the information (Jewitt, 2012). Selected videos and their entailing data need to be relevant to the data needed in order to answer the main research questions (Jewitt, 2012). Therefore, to avoid data overload, videos that build up on knowledge deducted from the online forums will be selected, which fully uncover the processes. Relevant videos can be found through video platforms, such as YouTube, YouTube Gaming, Twitch, or blogs. They can cover opinions, reviews, support, or other experience-relevant topics and provide a visual representation of it. To conclude, video materials of gamers, as recommended in the netnography theory, will be used in the observation of participants, since they complete the experienced portrayal of gamers (Kozinets, 2005). A total 23 videos including 284 minutes have been selected and analyzed. Below, one can find an overview of the observed data.

Type of data	Quantity	Application in analysis
Dataset 1: Participant observation (Online forums)	6 forums in total including: 84 threads analyzing 169 posts	Identification and analysis of: ▪ the four determinants of co-creation experience in terms of the degree and variation ▪ consumer resources, roles, and motivation ▪ co-creation experiences and values including their linkage to the determinants
Dataset 2: Participant observation (Videography)	23 videos in total with a cumulated length of: 284 minutes	Explanation and in-depth analysis of: ▪ the determinants of co-creation experience in terms of mechanic and impact ▪ the uploaders role and motivation ▪ visualization of co-creation experience

Table 3: Overview of Empirical Data

3.4 Data analysis

Since the online environment offers a nearly unlimited amount of data in form of conversations and interactions, it is important to know which data is going to be more relevant compared to others. This section elaborates on the data analysis method used to find, interpret, and categorize relevant data. Further, an example on how raw data is being interpreted and categorized according to the research framework will be given.

Initially, data needs to be generated through participant observations in forums and video graphic content. This first order data represents the perspective of the participant in an online conversation and is therefore emic (Visconti, 2010). Hence, it deals with the way how the game and its external environment is perceived by a gamer. On the basis of the first order data, the researcher needs to interpret and make sense out of it, which describes the etic approach (Visconti, 2010). This approach uncovers what information is considered as important. Only then the relevant data can be categorized and applied to the used research framework, since the "e*mic and etic address the cultural and epistemological frameworks […] according to the role assumed by the informant's or the researcher's viewpoint*" (Visconti, 2010). In this process, the data will be observed and analyzed in an iterative approach, meaning that data will be reviewed and evaluated constantly. This ensures that the researchers, as well as the participants interpretation match.

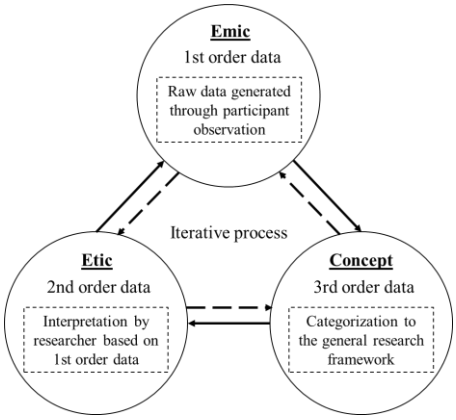


Figure 2: Used Data Analysis Method

In line with this approach, the information data of gamers will be firstly observed as a whole in the online environment for a better overview, followed by a more focused and detailed observation, searching for pertinent data. Simultaneously, the data is already being interpreted and processed for categorization according to the guiding research framework. As Im & Chee (2012) and Kozinets (2005) suggest, computer assisted software tools, namely Microsoft Excel and Microsoft Words, are used as a support to describe, categorize, compare and visualize the extracted data efficiently. Examples of the conceptualization and analysis of data can be found in appendix 3. In addition, a short overview of the discussed methodology is illustrated in appendix 4.

4. RESULTS

This section summarizes the key results of the netnographic participant observation through online forums and videography. First, the determinants of co-creation experience are presented. Next, identified co-creation experiences and their values, which are connected to the determinants, are discussed. This will eventually lead to key findings on how value is co-created.

4.1 Determinants of co-creation experience

As already mentioned, the degree and characteristics of the determinants have an impact on the co-creation experience and value. Below is explained what specifically amounts to the four determinants in MC. An overall summary of the identified key determinants can be found in appendix 5.

4.1.1 Level of technology

The 3D open world of MC incorporates many technological features inside and outside the game, which makes it for many gamers attractive to play and utilize these virtual mechanics, making it a "sandbox" game.

> *"[…] I like games where I'm given a lot of freedom. I can shape the world how I want it to be. I can make whatever I want. I can go anywhere and do anything I want. Add in skins, and you can be anything you want! If what I want to do isn't in the game currently, I'm almost certain there's a mod I can install that will add it, thanks to the modding community! Plus, with each new update, there are more things to do, more sights to see, more things I can make."*

Hence, many gamers appreciate the amount and variety of in-game mechanics and technological possibilities, such as crafting, merging, customizing, or in-game commanding. Additionally, the game has very elaborate game physics, meaning that there are sophisticated rules of nature, that determine for example the varying geographical setting. Furthermore, the game allows for individual customizing outside the game through modding. Mods are made by the individual player through third party software tools or editors and adds a nearly infinite amount of ways to modify features like appearances, customized game monsters, or new game mechanisms, into the game.

> *"It's also pretty easy to mod to make it fit other people's desires. In my opinion, MCEdit makes Minecraft even more fun. I like making worlds for messing around with MCEdit filters and making crazy creations that just make no sense at all (then at the end I delete the worlds)."*

Because of the variation of customizable content and game mods, many ways of how to engage and play the game have evolved through the gamer base.

> *"I like to play Survival [sic] mode (on easy, since I'm still learning recipes) rather than creative. I'm not really interested in pvp, but if there's a newbie-friendly server out there that matches my playstyle, I'd love to hear about it!"*

Five overall game modes can be identified, which are survival, creative, adventure, spectator, and hardcore mode. Each has its own rules and mechanics, and can be even further customized and adapted by the player through modding, allowing even more unique mini-game creation. There is a network of server systems, that are dedicated to specific types of modes and gameplay.

"This is the entire purpose of not having a universal server. […] On minecraft [sic], you don't like item dupes, go play on a server that doesn't use them. I don't like them and I do exactly that, and in fact everyone on my server respects this rule set from the owner without even trying to cheat on it."

MC is available on nearly every gaming device and consequently comes with different editions and versions of the game adapting to the capabilities of the platform it is played on.

"I bought and played MC on console and ended up preferring mouse and keyboard controls. The precision you get from it is hard to give up. That and getting to mod, use whatever resource packs you want, and use whatever skin you want makes PC worlds better for me."

Hence, extensive and elaborate modding is only available on PC. But that does not mean that console or handheld devices do not support customization. On the other hand, engaging other players in different game modes on consoles or handhelds is less complex than setting up a dedicated server on PC.

"Console is also better because you don't have to setup a server to play with friends, you just invite them with Xbox live or whatever the PS4 alternative is."

Overall, there are myriads of ways to create, engage, and connect within the game due to the high degree of technological input.

4.1.2 Level of connectivity

As indicated before, servers are needed for establishing a virtual environment for MC in which multiple players are connected and can play together. There are two types of servers; realms, which are official subscription-based servers by the MC developers, and third-party servers, which need to be set up and managed by the players themselves through third-party hosts.

"Do you think I should get a minecraft [sic] realms server, or host my own? (I know how to host my own, and install plugins/change maps and port forward, etc.) My own server is laggy to my friends, and I don't want that, but I can install plugins […]. I just want one to play with my friends without them lagging."

Nevertheless, both options have their advantages and limitations. Next to that, players can communicate in-game through chat functions or third-party voice communication tools, like Skype or TeamSpeak. Messaging in-game can be either done through the dedicated command function or by modding.

"As you know there is a "/tell" command in most servers but it doesn't fit me. by [sic] using this mod you can chat privately with target player without having to type that command every time! […]"

Furthermore, external platforms, official as well as unofficial, offer an environment for gamers that connects them, allowing for game relevant discussions, sharing, and support. This creates a social community, which can vary in size and involvement. Example platforms that support the communities' interactions are dedicated forums, YouTube, Twitch, or Facebook.

"Hello everyone I am VinnieGaming (YouTube) and I am looking for people or a group that wants to do YouTube/ Twitch in the future. The idea of this message is to get people or a group of people well acquainted with each other for better content […]."

To sum up, the game, as well as the players themselves provide many ways to connect, interact, and socialize with each other by using several communication channels. Chatting and voice speak are commonly used during the game, whereas Twitch and YouTube channels create a visual environment to show in-game gameplay. Hence, the resulting community actively participates on social media and forums, regarding game relevant topics, which contributes to shaping the gamers co-creation experience.

4.1.3 Role readiness

Entering the virtual world of MC comes with the task to of familiarizing yourself with and understanding the in-game environment. However, most players engaged in the game indicate basic knowledge about the logic and possibilities, which can also be accredited to the intrinsic understanding of video games in general through the gaming scene. Although the standard gameplay appears to be simplistic and self-explanatory, the evolved variation of features and modified inputs through customization and modding can complicate gaming processes. Thus, a foundation of relevant skills, knowledge, and resources are needed by gamers.

"[…] If you're, as I assume, trying to learn how to make mods/Minecraft extensions in some regard, I'd, of course, recommend learning Java. […] Some java stuff, especially when you're trying to develop things as addons toMinecraft, is quite hard, especially from the get-go. […]"

Next to the necessary skills in programming, designing, and IT, monetary and technological resources are also needed to set-up the game. However, there are many guides and video tutorials, which help acquiring these skills and resources. Consequently, gamers are highly willing to invest and learn. This indicates a high degree of motivation and understanding of their role, in order to achieve their prospected goal from this game.

"[…] A solid 24 hours of walking around my experimental track, trying to visualize the design that would achieve what i [sic] wanted it to achieve, and pondering those circuit thingies on the wiki; and it clicked. And kept on clicking. The flood gates are open and i [sic], jezzaman [sic], UNDERSTAND [sic] the design and practical application of redstone [sic] circuits! Mwahaha!"

Since the game is set in a virtual gaming community through the multiplayer function, personal roles and tasks are also inevitable. Third-party servers need to be monitored and managed. Thus, a set of roles need to be arranged and assigned to players, ensuring a smooth and unimpeded game play. Also, many search for partners that have the same interest and offer task specific "jobs".

"[…] I have basic server coding experience (creating new world, creating status bar below IP) but I need someone to help me get a server up and to hopefully profit from it. I have the money and all the expenses, so what I need now is a reliable partner with the following requirements: […]"

All in all, the majority of gamers are aware of the game features and required skills. Thus, they have a clear understanding of their role and are highly motivated to gain and use these skills and resources, allowing them to achieve their set goal.

4.1.4 Characteristic of interaction

The degree of interaction frequency and quality depends on the time spend on the game. Hence, a relationship is built and shaped between the individual player and the game (including the game developer) and other players, allowing the relationship to be trustworthy, respectful, and supportive. Additionally, the majority is very committed and constantly in interaction with the game and their community. They support each other and give helpful feedback and suggestions to game specific issues.

"Wow, I really like this. [...] You've done a really great job of making the textures feel like they have a third dimension. You're doing a great job so far, keep it up!"

Furthermore, the game developer Mojang encourages player suggestions and feedback, helping to foster updates and new in-

game ideas. This approach, for example, resulted in officially supporting modding within the game. Nevertheless, due to the huge amount of inputs, suggestions, and game ideas, the company has difficulty to provide the expected responsiveness the community sometime expects.

> *"The suggestion forum is a great part of the minecraft [sic] forums where we all can post our ideas on how to make minecraft [sic] a more enjoyable game. However, how often does Mojang actually come and look at the forums? […]"*

Moreover, the game developers are interested in personally interacting with MC players trough an annual convention called MineCon, bringing YouTubers, third-party developers, and the casual gamer together. Lastly, various support approaches regarding game issues are offered by the game developer through channels such as their official website, in-game, or social media.

4.2 Co-creation experiences and values

In line with the nature of the game, there are many ways of shaping and designing the game play through the player base, resulting in unique and very personalized co-creation experiences and values. Next to the actual game play itself, which includes various options on how to play MC, three additional and distinct co-creation experiences have been identified. A comprehensive table of the identified co-creation experiences and values can be found in appendix 6.

4.2.1 Gameplay

As mentioned in the section before, there are different game modes in which the game can be played. All modes have their own rules and features. The three most used modes are survival, adventure, and creation. The survival mode is about merely collecting items, fighting enemies, and crafting with the aim to thrive and survive, whereas adventure is all about exploring player-created worlds in which some game play features are limited to prevent disrupting the created world. Creative mode is one of the most popular modes and enables players to freely construct or destroy blocks, mechanisms, or structures. The survival and adventure aspect, like for instance health bars, are enabled and no damage can be taken by the player. However, the game modes can be switched, which depends on the settings of the server. This gamer indicates this gameplay variety by expressing his way of playing with the game.

> *"My motto for playing Minecraft: Always have a project. […] At first, I loved exploring the landscape and caves I found. After a while of that, I mined some diamonds with no real goal in mind. After I started to lose interest in that, I decided to build some stuff, and I've never looked back. I've worked on creating houses, interesting landscapes, tree villages, floating mountains, villages on the water, railway systems, and underwater arboretums."*

Another feature, which shapes the game play of MC, is the infinite amount of ideas and customized inputs, such as self-made or downloadable mods or plugins. Integrating these modified ideas into the game can create novel game mechanisms or even mini-games. Hence, the game has the potential to never appear repetitive.

MC can be played as a single player and without any modification, as well as with multiple other people and the usage of user generated content, indicating costumer-to-customer and customer-company co-creation. As an example, gamers can team up for dedicated projects and create buildings or new tools together in multiplayer modes. Nevertheless, the individual gamer needs to understand the context of the game in order to know his options in enjoying the game.

> *"I like it because it is the only game that you don't stop playing when you get bored, you look for something INGAME [sic] to entertain you again. […] On servers there are even more possibilities, setting up a company that makes fireworks for others or enchanting tools for people, or just talk to some friends you got on the server."*

This statement clearly highlights the derived values of fun and entertainment, as well as socializing and interacting with gamers that share the same interests.

4.2.2 Social environment

Meeting new people and eventually befriending them is another identified co-creation experience in MC, due to the favorable game settings and virtual environment facilitating this process. Finding and socializing with new people is closely related to the gameplay, since both are mutually connected. The virtual world of MC appears to be like a second world for the player, in which he can work, play, and communicate with other players. Thus, it is very unlikely that a player is not engaged in socializing with another player during the game, except when playing it completely on single-player mode. Communication as well as coordination is mostly done through messaging and voice talk when working together on a project like constructing a new building or tool. Next to that, players can also compete with each other in multiple ways through many player vs. player modes offered by the game itself. In addition, customized mini-games created by players themselves enable different ways to play with or against each other. Eventually, small groups of players with the same values, game preferences, and goals, emerge throughout the game, which is defined as clans in MC.

A further way to find and connect to like-minded gamers is by actively searching through forums or social media. The following proposal of a gamer shows how he tries to convince another gamer to join his clan, due to similar interest.

> *"Hey there! The clan i [sic] am in has a small group for minecraft [sic] (about 10+ peeps) and our own server run and sponsored by ClanWarz. The whole clan (all games) has around 3000+ members so there's plenty of scope! We are very active on the server and have a Ventrilo server too to make chat easy […] We are all friendly and open in the Minecraft division with most of us around the 18 - 30 age [sic], so very similar to yourself! We do practice sessions of two hours at regular intervals where we do [sic] build comps [sic], exploration challenges, mining exploration and PVP! […]"*

It is common that a short application is required in order to get accepted into certain clans, ensuring same values and targets. An application process may contain a brief presentation about one's experiences, skills, and personality and sometimes even include a skype meeting. Additional postings can also be related to finding people for specific projects or other purposes.

Hence, the game is characterized as a socially interconnected game. As a result, a huge community has evolved, which regularly interacts in- and outside the game. Playing together comes with the benefit of collaborating together within the game, stimulating enjoyable interactions in a group.

4.2.3 Skill development

The third identified co-creation experience the game facilitates involves the support and development of game relevant skills. In order to progress and fully utilize the capabilities of MC, certain resources or skills like programming, designing, and in-game knowledge are essential. These requirements are not always given when encountering the game for the first time. Also, the skill and knowledge level differ with each player. Due to the supportive

nature of the community and the game itself, there are many ways to acquire and enhance personal skills. One of them is to actively ask in discussions about help and solutions. Other players are mostly providing very helpful suggestions in order to solve the problem. In addition, some players already actively prepare guides for frequently asked issues.

> *"Hello everyone, my name is Gianluca. I'm an avid Minecraft player who knows how to program in the Java programming language. Being in the development field for over 3 years has allowed me to find some simple, yet confusing mistakes. A lot of them revolving around the Bukkit scandal. […] So, in this thread, I'll show you how to create a server, as it's not as easy as it used to be."*

Fan based websites also contain many articles about game topics, trying to connect the context and logic behind MC. Furthermore, video tutorials, which have the advantage to visually demonstrate knowledge, are a popular method to explain game mechanisms or set-ups including their related issues. For instance, many YouTubers show in step-by-step guides how to set up servers or customize through modification. In addition, third party tools and software developed by gamers or small companies ease certain processes, which initially demand a certain level of knowledge and skill.

> *"Hello everyone and welcome to EasyMC. EasyMC is a tool used to create mods. This tool is very easy to use and allows creating a new .java file to be much simpler. […] You DO [sic] need ModLoader if you plan on using the code generated by this program. […] Everybody have fun creating mods! […]"*

Therefore, the game itself, as well as the community, foster the development of skills, which are not only useful within the game, but can also be helpful outside the game context. As an example, MC has the potential to be the steppingstone into the world of programming and media design. The following gamer highlights his opinion in which ways MC can enforce certain skills.

> *"I think that Minecraft commands, and command blocks, can be a great gateway to the wider world of programming. Also making skins and texture pack design can get someone interested in computer graphical design. I even think that redstone [sic] circuits are excellent in teaching young children in logic and process. Some kids just want to play, some want to build, and some want to figure out how to do stuff with redstone [sic]."*

Mojang has noticed this phenomenon and launched an educational version of MC last year called "Minecraft Education". It is exclusively used in schools or other educational environments with the purpose to promote creativity, collaboration, and problem-solving skills through the open-word setting of MC. A code builder interface within the game enables to easily learn programming by engaging computer science concepts through designing and creating. Educators can also act as a tutor for students in the game, giving them instructions, hints, and solutions. Basically, it can be seen as a virtual classroom setting in which unique and creative learning experiences can be conveyed through enjoyable and rewarding means.

All in all, players have the opportunity to engage skill enhancing methods in order to achieve personal self-development. This is can be either done indirectly, by playing the game, or directly through the community or MC education.

4.2.4 Video content and streaming

As indicated, user-generated video content and live streaming are commonly used when playing MC, in which gamers can be either seen as a content provider or viewer. Many of these videos show game play, reviews, showcases of created buildings, maps, or skins. But in spite of that, the vast majority provide informational content through tutorials or guides for MC, since it is the most effective way to explain game related topics by actively showing it in-game. In fact, MC related videos are one of the most popular videos on the video-sharing platform YouTube, which clearly demonstrates the great extent of the games fan base, as well as the power of the video content creators in terms of influence and popularity. Thus, many gamers seek to participate in the YouTube scene with MC.

> *"I recently started a youtube [sic] channel and would like to create Minecraft youtube [sic] videos, I know that I cannot use copyrighted content for my videos and make money off of it (monetized) and I would possibly like to earn money from my videos. Is it legal for me to make Minecraft youtube [sic] videos and post them to youtube [sic] without special permission from Mojang? […]"*

Unlike other game developer, Mojang welcomes the spread of video game material through these third-parties. This way, an increased awareness and customer reach was created, which consequently resulted in the huge popularity and success of MC. This approach is also the case for live streaming on platforms like Twitch, one of the game developers' strategic partners today, where players can interact with viewers during the game through voice talk and chat functions. Nevertheless, technological resources and knowledge regarding video content creation and streaming are needed. Especially skills like recording, cutting, and scripting are needed, as well as a unique concept idea in order to ensure a certain amount of quality. Naturally, these videos are further spread and shared within the community on forums, which comes with the creation of an interconnected community in streaming. Next to the social aspect and network of people, video content providers mostly enjoy creating videos in interaction with their peers.

> *"As someone who has youtubed [sic] in the past […] I think that you shouldn't be doing it just for the subscribers, but with the enjoyment of making videos themselves. […] I don't have any expensive editing software, but I try to make my videos high-quality and look appealing. […] I feel that subscriber interaction is important - no matter how many subs you have. I used to do a series called QuestCraft, where I asked my subscribers for challenges to complete in videos."*

In summary, video content does not only enable the promotion of the game, but also allows to support and entertain other fellow players. Next to the enjoyment of creating content, it functions as an additional way to interact and connect with other gamers. Additionally, with enough views and success, monetary benefits can be earned through advertisements and business collaborations.

5. DISCUSSION

With the increasing consumer involvement in value creation, it is crucial that firms effectively offer and facilitate value propositions that support value co-creation (Grönroos, 2011; Grönroos & Voima, 2011). For this reason, marketers need to be aware of appropriate methods, which support the co-creation environment and their customers preferences (Prahalad & Ramaswamy, 2004). Especially in video games a wide range of co-creation activities are available, due to their digital connectivity and technological involvement. In order to gain invaluable insights that close this knowledge gap, a case study was conducted on the online game Minecraft. Hence, the aim of this research study was to "*explore and identify the nature of value co-creation through the customers' co-creation experience*

and value, as well as their implying determinants". A guiding research framework was individually constructed and is prominently based on research literature with the focus on co-creation between involved actors and their corresponding value spheres.

Evidence shows that the provided environment of the firm and the gamers implied skills and roles are the foundation of co-creation that shape the unique values of a gamer. This is in line with the concepts on co-creation experience determinants proposed by Verleye (2015). Further, the virtually connected environment functions as a platform between actors involved in the co-creation process. Although the interaction is handled online, the main structures for co-creation, as given through the conducted literature review and research framework, are still prevalent. Results also show that value is also co-created among gamers and not merely between a firm and a customer. Firms act in customer-to-customer relationships as value facilitators. Another new insight gained through this study is that the co-created experiences areas are interconnected. This means that, for example, gameplay enables a player to find like-minded gamers leading to social interactions and friendships, or skill development, allowing for a broad range of game play options. This interconnectivity of experiences reflects the effectiveness of the key determinants and in-game features, leading to unlimited outcomes. Accordingly, the four co-creation experience areas, which are affected by the key determinants, entail myriad ways of personalized experiences and values. Thus, experiences and values differ with every gamer.

In summary, this research has demonstrated that the part exploratory adventure, part creative building world, revolutionized the gaming industry through unprecedented game play, creativity, and unlimited capabilities. Additional and refined concepts on value co-creation have been found and fundamental practices for marketers have been identified.

5.1 Theoretical implications

This research combined the concepts of value co-creation, co-creation experiences and values, as well as Verleye's (2015) determinants of co-creation experience. The findings contribute to the existing concepts in theory in several ways.

First, the results confirmed and yield additional evidence on the summarized concepts of value co-creation. Co-creation experiences are unique and essential in the value creation process. Furthermore, the study showed that co-creation goes beyond the relationship between a firm and the consumer. Co-creation happens to appear also between other consumers, with the firm functioning as facilitator. Although the firm appears to be physically absent in this case study, findings show that the technological involvement and online environment substitute as a platform for co-creation. This provides proof that the main structures, which are the basis for co-creation, are still given and adapted to the technological capabilities and nature of the industry. Lastly, the study raises the importance of complementing key determinants of co-creation experiences. Most studies do not elaborate on possible factors including their interrelationship that shape co-creation experiences. This has the potential to be of value to further research.

5.2 Managerial implications

Given the technological context of this study, the empirical findings are especially significant for marketers involved in virtually and community based environments, which enable co-creation. Evidence highlights the importance of implementing practices that allow customers to individually create their own co-creation experiences with a low degree of restrictions. As a consequence, potential barriers need to be detected and eliminated, in order to avoid disruptions in the value creation process, which in turn could lead to customer dissatisfaction. Furthermore, emergent co-creation experiences, which are initially unintentional, should be realized and reinforced through a supportive environment and initiative. As the case study demonstrated, skill development evolved into a crucial co-created value, which the company picked up on by releasing an education version of the game in order to endorse knowledge and creativity. In addition, freedom in value co-creation has the potential to cause user generated content such as ideas or insights on new products, services, or businesses. Since the consumer knows best about his preferences and expectations, he can be utilized as a co-producer or co-ideator. Hence, marketers need to be in constant dialogue with the customer by monitoring and listening community based communication and content.

5.3 Limitations and further research

In order to generate insights on the nature of value co-creation in the gaming industry, a case study based on the online video game Minecraft was conducted, which includes participant observation in forums and videography. However, due to the limited scope and restricted time frame of this study, the game was the only case study on which the results and eventually the outcomes of this research are based on. As mentioned in the beginning of this thesis, video games can greatly differ in their style, genre, and game play features, allowing for many possibilities on how games enable co-creation experiences, leading to distinct co-created values.

Further, the study merely focuses on the customer perspective, due to their increasing involvement in value co-creation, which sheds light to their derived co-creation experiences and values. Nevertheless, insights about the developers' perspective are not included and might imply further findings that could complement the results of this research.

As a consequence, further studies in this area should include at least more than two games as case studies, allowing for comparison and complementation. Alternatively, a game with other game features from a different genre could be observed as case study, which can then build on to the findings of this study. The perspective of game developers is another field for additional research, since co-creation involves the developer as a facilitator. This can be easily done by involving the facilitator through qualitative interviews.

6. CONCLUSION

To conclude, the games' nature and novel environment, which allows players to co-create their personalized gaming experience, sets a milestone in the video game industry. The game goes beyond the boundary of mere gameplay by including social, personal, and sometimes even economic aspects in- and outside of the game. Dedicated communities have evolved and contribute to co-created value between other gamers including the game as facilitator. Hence, Minecraft is an open space in which gamers come together and shape their own experiences around nearly anything, making the game a creative and innovative powerhouse. Recently, few game developers start to slowly follow suit by enabling more value co-creation options through game modifications and community building.

7. ACKNOWLEDGMENTS

First of all, I would like to express my sincere gratitude to my first supervisor, Dr. Raymond Loohuis for his continuous support during my research study. His expertise, invaluable feedback, and aspiring guidance helped me a lot in completing my research paper. I would also like to show my appreciation for the helpful input of my second supervisor, Björn Kijl. Last but not least, a special thanks to my family and friends, who have always supported and encouraged me throughout my bachelor studies.

8. REFERENCES

Alasuutari, P. (2010). The rise and relevance of qualitative research. *International Journal of Social Research Methodology*, *13*(2), 139–155. https://doi.org/10.1080/13645570902966056

Aoyama, Y., & Izushi, H. (2008). User-led Innovation and the video game industry. *IRP Conference*, 0–22.

Apperley, T. H. (2006). Genre and game studies: Toward a critical approach to video game genres. *Simulation & Gaming*, *37*(1), 6–23. https://doi.org/10.1177/1046878105282278

Bengry-Howell, A., Wiles, R., Nind, M., & Crow, G. (2011). A review of the academic impact of three methodological innovations: Netnography, child-led research and creative research methods. *Social Sciences*, (July), 35.

Bogdan, R., & Taylor, S. J. (1990). Looking at the bright side: A positive approach to qualitative policy and evaluation research. *Qualitative Sociology*, *13*(2), 183–192. https://doi.org/10.1007/BF00989686

Călin, G. (2009). Strategies for Increasing Marketing Flexibility: An Application of the Service Dominant Logic. *Annals of the University of Oradea, Economic Science Series*, *4*(1), 685–689.

Carbonell, P., Rodríguez-Escudero, A. I., & Pujari, D. (2009). Customer involvement in new service development: An examination of antecedents and outcomes. *Journal of Product Innovation Management*, *26*(5), 536–550. https://doi.org/10.1111/j.1540-5885.2009.00679.x

Curley, M., & Salmelin, B. (2013). Open Innovation 2.0: A New Paradigm. *OISPG White Paper*, 1–12. https://doi.org/10.1109/HIS.2008.172

Edvardsson, B. (2005). GURU ' S VIEW Service quality : beyond cognitive assessment. *Managing Service Quality*, *15*(2), 127–131. https://doi.org/10.1108/09604520510585316

Ellway, B. P. W., & Dean, A. M. (2016). The reciprocal intertwining of practice and experience in value creation, *16*(3), 299–324. https://doi.org/10.1177/1470593116636088

Ernst, H., Hoyer, W. D., & Rübsaamen, C. (2010). Sales, Marketing, and Research-and-Development Cooperation Across New Product Development Stages: Implications for Sucess. *Journal of Marketing*, *74*(5), 80–92. https://doi.org/10.1509/jmkg.74.5.80

Fabricatore, C. (2007). Gameplay and game mechanics design: a key to quality in video games. *Proceedings of the OECD-CERI Expert Meeting on Videogames and Education*, 1–18. https://doi.org/10.13140/RG.2.1.1125.4167

Fabricatore, C., & López, X. (2012). Sustainability learning through gaming: An exploratory study. *Electronic Journal of E-Learning*, *10*(2), 209–222.

Fabricatore, C., Nussbaum, M., & Rosas, R. (2002). Playability in Action Videogames: A Qualitative Design Model. *Human-Computer Interaction*, *17*(4), 311–368. https://doi.org/10.1207/S15327051HCI1704_1

Füller, J. (2006). Why Consumers Engage in Virtual New Product Developments Initiated By Producers. *Advances in Consumer Research*, *33*, 212–217. https://doi.org/43008804

Füller, J. (2010). Refining Virtual Co-Creation from a Consumer Perspective. *California Management Review*, *52*(2), 38. https://doi.org/10.1016/0737-6782(88)90039-2

Fullerton, T. (2008). *Game Design Workshop: A Playcentric Approach to Creating Innovative Games*. *Technology*. https://doi.org/10.1007/s13398-014-0173-7.2

Gilette, F. & Soper, S. (2015). How twitch turned video game voyeurism into big business. Retrieved from https://www.bloomberg.com/features/2015-the-big-business-of-twitch/

Grönroos, C. (2011). Value co-creation in service logic: A critical analysis. *Marketing Theory*, *11*(3), 279–301. https://doi.org/10.1177/1470593111408177

Grönroos, C., & Voima, P. (2011). Making sense of value and value co-creation in service logic. *Working Paper No. 559*, (January). Retrieved from https://helda.helsinki.fi/handle/10138/29218

Grönroos, C., & Voima, P. (2013). Critical service logic: Making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, *41*(2), 133–150. https://doi.org/10.1007/s11747-012-0308-3

Guion, L. A., Diehl, D. C., & Mcdonald, D. (2011). Triangulation : Establishing the Validity of Qualitative, 2–4.

Hilton, T., & Hughes, T. (2008). Co-production and co-creation using self service technology: The application of service-dominant logic. *Octago Forum 2: Academig Papers*, *2*, 20–40.

Hoffman, D. L., & Novak, T. P. (1997). A New Marketing Paradigm for Electronic Commerce. *The Information Society*, *13*(1), 43–54. https://doi.org/10.1080/019722497129278

Holbrook, M. B. (2006). Consumption experience, customer value, and subjective personal introspection: An illustrative photographic essay. *Journal of Business Research*, *59*(6), 714–725. https://doi.org/10.1016/j.jbusres.2006.01.008

Hoyer, W. D., Chandy, R., Dorotic, M., Krafft, M., & Singh, S. S. (2010). Consumer Cocreation in New Product Development. *Journal of Service Research*, *13*(3), 283–296. https://doi.org/10.1177/1094670510375604

Im, E.-O., & Chee, W. (2006). An Online Forum as a Qualitative Research Method. *Nursing Research*, *55*(4), 267–273. https://doi.org/10.1097/00006199-200607000-00007

Im, E.-O., & Chee, W. (2012). Practical guidelines for qualitative research using online forums. *Computers, Informatics, Nursing : CIN*, *30*(11), 604–11. https://doi.org/10.1097/NXN.0b013e318266cade

Jewitt, C. (2012). An introduction to using video for research An Introduction to Using Video for Research. *National Centre for Research Methods Working Paper*, 1–22.

Kotler, P. (2000). Marketing Management , Millenium Edition. *Marketing Management*, *23*(6), 188–193. https://doi.org/10.1016/0024-6301(90)90145-T

Kotler, P., & Keller, K. L. (2009). *Marketing Management*. *Organization* (Vol. 22). https://doi.org/10.1080/08911760903022556

Kozinets, R. V. (2005). Netnography : The Marketer ' s Secret Weapon. *Journal of Applied Physics*, *97*(3), 0–12. https://doi.org/10.1017/CBO9781107415324.004

Kozinets, R. V. (2015). Netnography. The International Encyclopedia of Digital Communication and Society, 0–22. https://doi.org/10.1002/9781118767771.wbiedcs067

Kristensson, P., Matthing, J., & Johansson, N. (2008). Key strategies for the successful involvement of customers in the co - creation of new technology - based services. *International Journal of Service Industry Management*, *19*(4), 474–491. https://doi.org/10.1108/09564230810891914

Kuzgun, E., & Asugman, G. (2015). Value in Services – A Service Dominant Logic Perspective. *Procedia - Social and Behavioral Sciences*, *207*, 242–251. https://doi.org/http://dx.doi.org/10.1016/j.sbspro.2015.10.093

Langlotz, A., Rhode, M., & Whaley, C. (2008). Video Games

Industry Overview: An Analysis of the Current Market and Future Growth Trends. *Holgerlanglotz.De*, 1–50.

Lankoski, P., Björk, S., & Stirling, W. C. (2003). Game Research Methods. *Satisficing Games and Decision Making: With Applications to Engineering and Computer Science*. ETC Press.

Lawer, C. (2005). On customer knowledge co-creation and dynamic capabilities. *Computer and Information Science*, (Miscellaneous Papers), 1–19.

Lee, J. H., Karlova, N., Clarke, R. I., & Thornton, K. (2014). Facet Analysis of Video Game Genres. *iConference 2014 Proceedings*, 1–13. https://doi.org/10.9776/14057

Lindgreen, A., Hingley, M. K., Grant, D. B. & Morgan, R. E. (2012). Value in Business and Industrial Marketing: Past, Present, and Future. *Industrial Marketing Management*, *41*(1), 207–214.

Mascarenhas, O. A., Kesavan, R. K., & Bernacchi, M. (2004). Customer value-chain involvement for co-creating customer delight. *Journal of Consumer Marketing*, *21*(7), 486–496. https://doi.org/10.1108/07363760410568707

Nambisan, S. (2002). Designing Virtual Customer Environments For New Product Development: Toward a Theory. *Academy of Management Review*, *27*(3), 392–413. https://doi.org/10.5465/AMR.2002.7389914

Nambisan, S., & Baron, R. A. (2009). Virtual Customer Environments: Testing a Model of Voluntary Participation in Value Co-creation Activities, (518), 388–406.

Nambisan, S., & Nambisan, P. (2008). How to Profit From a Better "Virtual Customer Environment." *MIT Sloan Management Review*, *49*(3), 53–61.

Newzoo. (2017). *2016 global games market report: trends, insights & projections towards 2019*. Amsterdam, North Holland: Newzoo.

O'Hern, M., & Rindfleisch, A. (2008). Customer Co-creation: A Typology and Research Agenda. *Review of Marketing Research*, (Working Paper No 4), 84–106. https://doi.org/10.1108/S1548-6435(2009)0000006008

Päällysaho, S. (2008). Customer interaction in service innovations - a review of literature. *Customer Role in Service Production and Innovation – Looking for Directions for Future Research*, *195*, 30–60. Retrieved from http://eprints.herce.fi/126/

Payne, A. F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science*, *36*(1), 83–96. https://doi.org/10.1007/s11747-007-0070-0

Prahalad, C. K., & Bettis, R. A. (1986). The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal*, *7*(6), 485–501. https://doi.org/10.1002/smj.4250070602

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, *18*(3), 5–14. https://doi.org/10.1002/dir.20015

Rogers, S. (2010). *Level up! : the guide to great video game design*. Wiley; 2 edition (April 28, 2014).

Russo-Spena, T., Mele, C., Russo Spena, T., & Mele, C. (2012). "Five Co-s" in innovating: a practice-based view. *Journal of Service Management*, *23*(4), 527–553. https://doi.org/10.1108/09564231211260404

Salen, K., & Zimmerman, E. (2004). Rules of Play: Game Design Fundamentals. *Nihon Ronen Igakkai Zasshi. Japanese Journal of Geriatrics*, 672. https://doi.org/10.1093/intimm/dxs150

Sheth, J. N., Sisodia, R. S., Sharma, A. (2000). The antecedents and consequences of customer-centric marketing. *Academy of Marketing Science*, *28*(1), 55–66. https://doi.org/doi:10.1177/0092070300281006

Steinkuehler, C. A., Duncan, S., & Simkins, D. (2006). Massively Multiplayer Online Games & Education: An Outline of Research. *Civilization*, 11.

Steinkuehler, C. A., & Williams, D. (2006). Where everybody knows your (screen) name: Online games as "third places." *Journal of Computer-Mediated Communication*, *11*(4), 885–909. https://doi.org/10.1111/j.1083-6101.2006.00300.x

Strauss, A., & Corbin, J. (1990). Basics of Qualitative Research. *Basics Of. Qualitatice Research 2nd Edition*. https://doi.org/10.4135/9781452230153

Thomas, G. (2011). A Typology for the Case Study in Social Science Following a Review of Definition, Discourse, and Structure. *Qualitative Inquiry*, *17*(6), 511–521. https://doi.org/10.1177/1077800411409884

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, *68*(1), 1–17. https://doi.org/10.1509/jmkg.68.1.1.24036

Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, *36*(1), 1–10. https://doi.org/10.1007/s11747-007-0069-6

Vargo, S. L., & Lusch, R. F. (2010). From Repeat Patronage to Value Co-creation in Service Ecosystems: A Transcending Conceptualization of Relationship. *Journal of Business Market Management*, 1–11. https://doi.org/10.1007/s12087-010-0046-0

Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*, *26*(3), 145–152. https://doi.org/10.1016/j.emj.2008.04.003

Verleye, K. (2015). The co-creation experience from the customer perspective: its measurement and determinants. *Journal of Service Management*, *26*(2), 321–342. https://doi.org/10.1108/JOSM-09-2014-0254

Visconti, L. M. (2010). Ethnographic Case Study (ECS): Abductive modeling of ethnography and improving the relevance in business marketing research. *Industrial Marketing Management*, *39*(1), 25–39. https://doi.org/10.1016/j.indmarman.2008.04.019

Voima, P., Heinonen, K., & Strandvik, T. (2010). Exploring customer value formation – a customer dominant logic perspective. *Publications of Hanken School of Economics*, (552), 1–17.

Wikström, S. (1996) The customer as co-producer. European *Journal of Marketing, Vol. 30 Issue: 4*, pp.6-19, doi: 10.1108/03090569610118803

Wolf, M. J. P. (2007). The Video Game Explosion : A History from PONG to PlayStation and Beyond. *Video Game Explosion, the*, 401. https://doi.org/10.5860/CHOICE.46-0107

Xun, J., & Reynolds, J. (2010). Applying netnography to market research: The case of the online forum. *Journal of Targeting, Measurement and Analysis for Marketing*, *18*(1), 17–31. https://doi.org/10.1057/jt.2009.29

Zartman, I. W. (2005). Comparative Case Studies. *International Negotiation*, *10*(9), 3–16. https://doi.org/10.1163/1571806054741137

9. APPENDICES

Appendix 1 – Overview and description of the sample game

<table>
<tr><td>Title:</td><td>MINECRAFT</td><td rowspan="6"> 
</td></tr>
<tr><td>Genre:</td><td>Sandbox, survival, adventure</td></tr>
<tr><td>Release date:</td><td>18th of November 2011</td></tr>
<tr><td>Developer:</td><td>Mojang</td></tr>
<tr><td>Publisher:</td><td>Mojang, Microsoft Studios, Sony Interactive Entertainment</td></tr>
<tr><td>Platforms:</td><td>Microsoft Windows, OS X, Android, iOS, Xbox 360, Xbox One, PlayStation 3, PlayStation 4, PlayStation Vita, Wii U, Nintendo Switch, Apple TV</td></tr>
<tr><td>Sold units:</td><td>122 million in total (February 2017)</td></tr>
<tr><td>Description:</td><td colspan="2">Minecraft was created in 2009 by the Swedish and independent video game designer Markus Persson (gamer name: Notch), who initially released a work-in-progress beta version. The game was finally developed and published by Perssons own game company, Majong, and then bought by Microsoft for US$2.4 billion in February 2014. The game play allows gamers to interact with the game and other players virtually in a 3D open world setting. Because of this creative building mechanism in the game, players are able to build levels, constructions, artworks, and structures. In addition, the game includes a variety of gameplay modes like a survival mode, creative mode, adventure mode, or other novel and customized modes. Due to the huge success in the past years, the game was able to also enter the merchandising, board game, and book market. Hence, the brand Minecraft has become more than just a game and developed to an own franchise.</td></tr>
</table>

Appendix 2 – List of observed online forums

www.minecraftforum.net/forums							
Type:	Official community forum of MC	**Members:**	4,870,275	**Threads:**	2,470,064	**Posts:**	29,420,776
Description:	Main hub for game discussions, modifications, custom maps, servers, and resource packs, which can be shared. Forum section is a sub-link of the website, since the page offers also other sub links. Forum is divided into general discussion, mapping and modding, diverse console editions, servers, support, and off-topic. Downloadable content is available.						
www.planetminecraft.com/forums							
Type:	Creative community fan site of MC	**Members:**	2,189,969	**Threads:**	1,853,848	**Downloads:**	321,136,258
Description:	Offers MC discussions, MC servers, creation showrooms, support, YouTube channels, and off-topic. Highlights latest community challenges. Navigation enables quick links to projects, skins, packs, servers, and rules of the website. Mainly used by players in order to browse, share, and download content for MC.						
www.minecraft.curseforge.com/forums							
Type:	Forum of third party company Curse	**Members:**	1,325,582	**Threads:**	2,208	**Posts:**	15,080
Description:	Forum dedicated to the software tool Forge for MC, which enables modding. Offers modding discussions and packages.						
www.mccentral.org/forum							
Type:	Unofficial MC forum	**Members:**	81,774	**Threads:**	108,334	**Posts:**	565,228
Description:	Discussions about game mods and servers. Mainly about diverse game play modes created by the community. Supporting tools such as TeamSpeak, map suggestions, and server ideas can also be found.						
www.minecraftforum.de/							
Type:	Unofficial German MC forum	**Members:**	16,714	**Threads:**	65,164	**Posts:**	n/a
Description:	Biggest German MC discussion forum. Gives information about MC news, support, mods, textures, skins, redstone, maps, other console versions, and the main German servers. Additionally, there is a market place where members can search and offer in-game resources. No application on downloadable content offered.						
www.reddit.com/r/Minecraft/							
Type:	Main subreddit of MC	**Members:**	4,870,275	**Threads:**	n/a	**Posts:**	n/a
Description:	Unstructured discussion platform about all kinds of topics. Rough filter options are given and dedicated subreddits to specific topics can be found in the navigation. No download or sharing feature.						

Appendix 3 – Example of conceptualizing and analyzing data

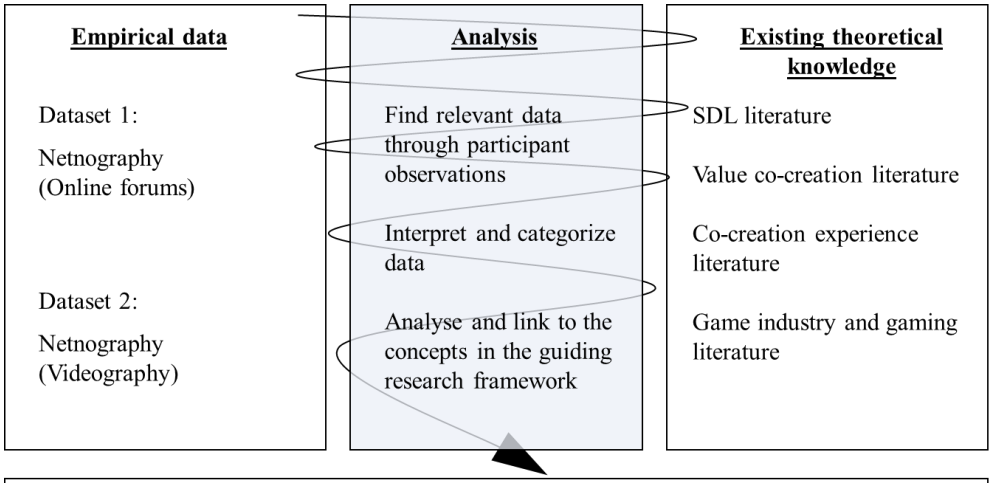
Conceptualization of data

Source	Raw data	Content
Post No. 1	"*Mods* add new stuff which is always exciting, and *Maps* tell you stories, or test your skills. The reason we play Minecraft is that it's so *diverse*."	Mods, diverse gaming features
Post No. 2	"So, a lot of people seem to like Minecraft *Realms*, and I have no idea why because it really is quite bad compared to *other servers*."	Types of server, comparison
Video No. 1	"How To Make a 1.11.2 Minecraft *Server*"	Server, step-by-step tutorial

Analysis of data

Identified concept	Analysis	Category
Mods	Modding is an in-game feature	Determinant – Technology
	Can be applied to various purposes and game features	
	Enables unlimited possibilities of customization	
Server	Servers are needed to create a foundation for playing	Determinant – Technology
	Different types of servers	Determinant – Connectivity
Tutorial on server	Knowledge is needed for a server set-up	Determinant – Role Readiness
	Gives information and explanation	Co-creation experience
	Tutorial helps other gamers	
	YouTuber channel awareness and support	

Appendix 4 – Overview of methodology

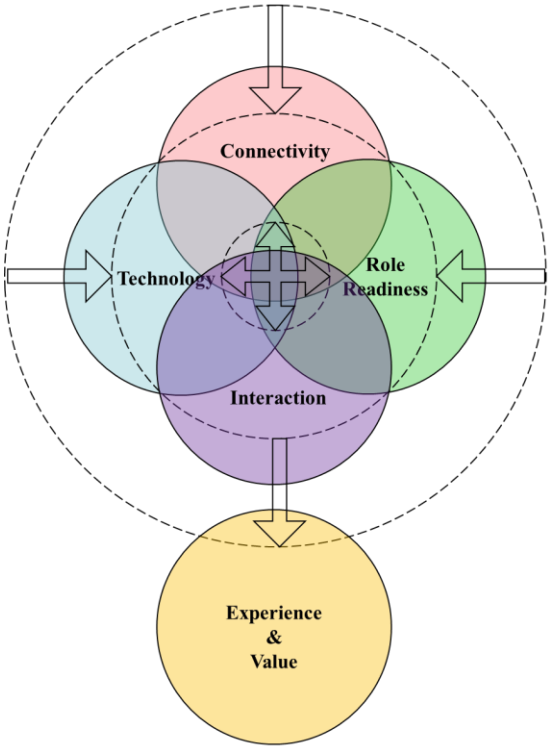


Outcome of analysis

Analysis of datasets result in:

- Specifying the key determinants of co-creation experiences
- Identifying co-creation experiences and values
- Categorizing co-creation experiences and values
- Linking the findings to the co-creation process in online video games

Appendix 5 – Results of key determinant of co-creation experiences



Technology

High level of technological inputs by providing a variety of game mechanics and technological features, which facilitate unique creations, experimentation, learning, game customization, and eventually co-creation experiences.

This is achieved trough:

- Game play (e.g. crafting, merging, game modes, redstone)
- Availability of MC on many platforms and devices including adapted game versions
- Server customization
- Modding
  - Third-party tools
  - Plug-ins
  - Skins
  - Enemies (Mobs)
  - Maps

Connectivity

High level of connectivity through many interfaces, which enable high interconnectivity and thus co-creation.

Easy to connect and communicate with other players through:

- Variety of servers (offering different virtual environment)
- In-game messaging (e.g. classic commands or plug-ins)
- Voice-over-Internet Protocol (VoIP) software for audio communication (e.g. TeamSpeak or Skype)
- Discussion boards, YouTube, Twitch, Wikia, or other dedicated fan sites

Role Readiness

Necessity of required **skills, knowledge**, and **resources** in relation to the targeted achievements with the game. However, many player are aware of the possibilities of the game and their needed requirements, which results in a high motivation to achieve and fulfil these requirements.

These requirements include:

- Programming, designing, and software skills (e.g. Java, Photoshop)
- Understanding of game context and mechanics
- Monetary and technological resources (e.g. buying the game/ server or needed equipment like headphones or a high-performance PC)
- Clarity of role within the community

Interaction

Frequent and **approachable** interaction between the game developer and its gamers, as well as between gamers and other gamers through support channels, in-game relationships, and personal encounters (e.g. MineCon)

These interactions are characterized as:

- Supportive
- Easily accessible
- Relatively informal and player directed

Appendix 6 – Identified co-creation experience and value

	Gameplay	Social Environment	Skill Development	Video Content/ Streaming
Nature of Co-Creation Experience	Different ways of playing the game through a variety of game modes, objectives, and in-game features with or without other players involved. This results in many uniquely created "projects" such as mini-games, buildings, or new tools.	The nature of the game is characterized by interacting with other fellow player in order to achieve similar interests and goals. Enables to easily connect and befriend like-minded players, leading to a creation of clans. Overall, the MC community is very large and can be also found outside the game through community platforms.	MC enables to generate and develop needed knowledge and skills in order to progress in the game. This can be either done by the game itself or community support. Most acquired skills can be also used outside the game, such as programming, creativity, and logical thinking. Recently, an education version has been launched last year.	The game (including the game developer staff) enables another way of co-creating experiences in MC through user-generated video content in the web video environment. Next to the effect of increasing awareness and gaming support, videos about MC additionally entertain gamers, enable networking, and might even have the potential to generate money.
Used Technology	• Hardware (game relevant) • Mods incl. software • Server settings • In-game features	• Hardware (game relevant) • Relevant server • In-game features	• Hardware (game relevant) • Software (third-party) • In-game features	• Hardware (game and streaming relevant) • Software (e.g. cutting or recording)
Connectivity Method	• Servers • In-game communication	• Servers (clans) • Forums • Social media • In-game communication	• Servers • Forums • Video platforms • MC Education	• Forums • Video platforms • Social media
Consumer Role	The player needs to understand the context and capabilities of the game. Having a clear understanding and goal results in high motivation.	In a multiplayer setting the individual role within a group (clan) needs to be known. Certain roles, skills, or knowledge are required when engaging playing together or working on projects.	Awareness of required skills and resources, which are wished to be worked on. Includes knowledge and motivation to find, learn, and experiment in an hands-on approach.	Next to the understanding of the gaming context, media design skills are needed. These skills include video scripting, recording, and cutting. Additionally, the motivation and the nature of interpersonal encounters with the audience need to be clear.
Nature of Interaction	• Gamer-to-gamer • Developer-to-gamer	• Gamer-to-gamer • Developer acts as a facilitator	• Gamer-to-gamer • Developer-to-gamer	• Gamer-to-gamer • Developer acts as a facilitator
Experienced Value	• Hedonic • Social	• Hedonic • Social	• Pragmatic • Cognitive • Hedonic	• Hedonic • Personal • Social • Economic