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VALUE PROPOSITIONS IN AUGMENTED REALITY MOBILE GAMES:

MOST DESIRABLE GAME FEATURES IN POKÉMON GO

TIIVISTELMÄ

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Arvoehdotukset lisätyn todellisuuden mobiilipeleissä: eniten hyödynnetyt
ominaisuudet lisätyn todellisuuden mobiilipeli Pokémon GO:ssa
Jyväskylä: Jyväskylän yliopisto, 2022, 68 s.
Tietojärjestelmätiede, pro gradu -tutkielma
Ohjaaja: Tuunanen, Tuure

Tämä pro gradu -tutkielma tutkii arvoa, arvon yhteisluontia ja erilaisia arvoeh-
dotuksia maailmanlaajuisessa ja suositussa lisätyn todellisuuden mobiilipelissä,
Pokémon GO:ssa. Tutkielman tavoitteena on selvittää mitä ovat ne ominaisuudet,
joita käyttäjät pelissä mieluiten käyttävät. Lisäksi tutkimuksella halutaan saada
tietoa siitä, minkä vuoksi käyttäjät pitävät joistain ominaisuuksista ja millaista
arvoa ne heille tuottavat. Tutkielma tutkii myös sitä, minkä tyyppisiä arvoehdo-
tuksia nämä käyttäjien mainitsemat ominaisuudet edustavat. Tutkimus toteutet-
tiin teemahaastatteluna. Lisäksi haastattelu sisälsi laddering -menetelmän avulla
kerättyä syventävää tietoa (n=14) käyttäjien kokemista arvoista. Tuloksia lähes-
tyttiin ja käsiteltiin tulkitsevasti yrittäen ymmärtää ja tulkita vastauksien syvälli-
sempi merkitys. Analysoinnin avulla saatiin selville ne syyt, minkä vuoksi käyt-
täjät kokevat tietyt pelin ominaisuudet mieluisaksi. Tämän syventävän tiedon
avulla oli mahdollista suorittaa luokittelu erilaisiin arvoehdotusluokkiin. Tutki-
mus osoitti, että valittu lähestymistapa eli laddering -tekniikka ja ymmärtävä
analysointi sopivat arvon ja arvon yhteisluomisen tutkimiseen tuottaen juuri ha-
luttua syventävää tietoa tutkittavasta kohteesta. Tutkimuksen tuloksena löydet-
tiin 31 suosittua attribuuttia Pokémon GO:ssa. Lisäksi löydettiin 20 arvoseu-
rausta sekä 22 arvoa, joiden avulla oli mahdollista saada syventävää tietoa ja pe-
rusteluja käyttäjien valitsemille suosituimmille ominaisuuksille. Perustelujen
tuoman syventävän tiedon avulla oli mahdollista suorittaa attribuuttien luokit-
telu erityyppisiin arvoehdotuskategorioihin. Peli ja sen yksittäiset ominaisuudet
sekä pelin tarjoamat mahdollisuudet muodostavat mielenkiintoisen kokonaisuu-
den erilaisia arvoja ja arvoehdotuksia. Tutkimuksen tuloksia voidaan hyödyntää
hyvin esimerkiksi erilaisten viihteellisten palveluiden suunnittelussa, joissa li-
säksi hyödynnetään mahdollisuuksia arvon yhteisluomiseen.

Asiasanat: arvo, arvon yhteisluominen, arvoehdotukset, lisätyn todellisuuden
mobiilipelit, palvelukeskeinen logiikka, Pokémon GO

ABSTRACT

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Value propositions in augmented reality mobile games: Most desirable game features in Pokémon GO
Jyväskylä: University of Jyväskylä, 2022, 68 pp.
Information Systems, Master's Thesis
Supervisor: Tuunanen, Tuure

This master's thesis examines value, value co-creation and different value propositions in the global and popular augmented reality mobile game, Pokémon GO. The aim of the thesis is to find out what are the features that players prefer to use in the game. In addition, the research aims to gain information on why players like certain features and what kind of value these features provide for them. The thesis also examines what type of value propositions these features represent. The research was carried out as a themed interview, also including in-depth information (n=14) about players' values collected using the laddering method. The results were approached and treated interpretively, trying to understand and interpret the deeper meaning of the answers. With the help of analysis, the reasons why players find certain features of the game pleasant were found. With the help of this in-depth information, it was possible to carry out the classification into different value proposition categories. The study showed that the chosen approach, i.e. laddering technique and comprehensible analysis, are suitable for studying value and value co-creation, producing exactly the desired in-depth information about the researched object. As a result of the research, the 31 most popular attributes in Pokémon GO, 20 value consequences and 22 values were found and with the help of which in-depth information and justifications for the most popular features chosen by players were obtained. With the help of the in-depth information provided by the justifications, it was possible to classify the attributes into different types of value proposition categories. The game and its individual features as well as the opportunities offered by the game form an interesting whole of different values and value propositions, and the results of the research can be well utilized, for example, in the design of various entertaining services, where opportunities for co-creating value are also utilized.

Keywords: value, value co-creation, value propositions, augmented reality mobile games, service-dominant logic, Pokémon GO

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1 INTRODUCTION

We live in the world of services. In many industrialized countries the services sector is the main sector of the economies (Spohrer et al., 2007). In OECD countries by the beginning of 21st century, the number of services in economies was about 70%. This number includes all type of services (Wölfl, 2005). The growth of this sector has been fast in recent decades and it is an ongoing process (World Trade Organization, 2019), although the worldwide COVID-19 pandemic caused severe impacts for the global trade of services (World Trade Organization, 2021). One of the main reasons for the growth of the service sector is digitalization (World Trade Organization, 2019), but there are also other reasons like changes in manufacturing and innovation processes, technological and social innovations, improvements in organizations and management, the rise of the service prices and general changes in the lifestyle (Ochel & Wegner, 1987).

The change to this current service-based society from the society of agriculture is interesting. The evolution from agriculture to industrial economies made dramatic changes to people's daily lives. The first two industrial revolutions brought industrial factories, new innovations like machine tools, steam power and railroads. These opened totally new world for manufacturing and enhancing productivity. New ways of work made possible to use for example mass production for increasing the efficiency. (Schwab, 2017). The orientation was to products and production (Grönroos & Voima, 2013) and efficiency and effectiveness were the most important aspects in development and manufacturing processes of that time (Vargo & Lusch, 2008a).

Earlier, when the economy was based mostly on exchange of manufactured standardized goods for money, the perception of value was based on the fact that value can be determined by the company and can be embedded into the product (Vargo & Lusch, 2004a). Marketing did its own part and buying and owning new products as an access to the happiness was sold convincingly to the customers (Senge et al., 2001). Living standards increased, the population grew and people started to see their own possibilities in the future lives more positively, so the market continued to expand (Lucas, 2002).

As the economy grew, people were getting richer than earlier and got new possibilities to spend money to entertainment rather than to necessary goods, and that made a great foundation to the new revolution (Blinder, 2007). Industrialization had reduced physical labor and released human resources elsewhere. Service-based economies like finances, logistics, retailing, education or healthcare services started to grow and faced a massive revolution (World Trade Organization, 2019), and through this second Industrial Revolution economy changed more toward services (Blinder, 2007). Simultaneously, since 1960's, the world changed in another way as well. Among other important innovations this era, The Third Industrial Revolution, gave computers and the Internet to the world. This revolution is also called the Digital Revolution or the Computing Revolution. (Schwab, 2017).

Revolutions in the surrounding world have been drivers for technological changes and vice versa as well. The Fourth Industrial Revolution frames and analyzes how the living and interaction between humans and technology has changed. With these new technologies people are getting new ways to function and be connected to each other and observe the world. (Philbeck & Davis, 2018; Schwab, 2017). Widespread availability of computers and internet connections over the world have formed digital infrastructure capable of providing digital services in new innovative ways, which have enabled the gigantic growth of digital services (Williams et al., 2008). The fusion of new technologies enables interaction across different domains (digital, physical, biological) and the powerfulness is increasing when all these are combined and are reinforcing each other. There is a significant shift to how these new technologies are related to the creation, exchanging, and distributing of economic, political, or social value. These things are making this revolution different from the previous revolutions. (Philbeck & Davis, 2018; Schwab, 2017).

Digital technologies enable new ways for different kinds of actors to be in interaction with each other and collaborate (Schwab, 2017). Since service-dominant logic was presented by Vargo and Lusch (2004a), customer participation got new viewpoints and understanding of the user roles and the value evolved. This evolution significantly renewed thinking of different actors and value creation process. It can be seen as the basis research for modern views of service-dominant logic (Vargo et al., 2008; Vargo & Lusch, 2004a, 2008a). The role of the customer is no longer isolated unaware and passive. Instead, it is connected and informed. Companies are no longer is dictating things alone (Prahalad & Ramaswamy, 2004a), and customer is no longer an external element (X. Zhang & Chen, 2008) or only the source of money (Saarijärvi, 2012). The role of the markets is to be a space or forum for potential co-creation experiences (Prahalad & Ramaswamy, 2004b).

Companies and customers co-produce services and value together. Companies create different value propositions and customers experience the value in use. (Vargo & Lusch, 2004a). Point is that different actors are supporting each other's value creation. Instead of just selling goods or services, companies want to help customers in their value creation and at the same time they are willing to

engage customer resources into their processes to support company's value creation (Saarijärvi, 2012). Both companies and users are value creators, but also the beneficiaries of value co-creation (Liu et al., 2018; Vargo et al., 2008; Vargo & Lusch, 2004a).

There has been and still is compelling need to discuss how digital services should be designed. In many studies focus is on selecting the most suitable requirements elicitation technique for defining and prioritizing the requirements to ensure the best quality (Goguen & Linde, 1993; S. Tiwari et al., 2012). Technical specification should not be a first thing to do. More important thing should be to gather understanding of the benefits the customers wants and to design customer experience (Armstrong et al., 2014). Time is different than earlier and major technological innovations, disruptions and megatrends are changing the world constantly and quickly. Tangible innovations with intangible features and different digital services are the present day, like also the fact that physical and biological world can be in interaction with digital technologies. (Schwab, 2017). Customer needs must be understood. It is no longer what companies or organizations' end-users need or how efficient or effective processes are, as we have traditionally used to think. In this new era of digital world and consumer information systems, digital services must be designed by focusing the consumer point instead of organizational users. Consumers are expecting personalization and experiences (Tuunanen et al., 2010) and they are willing to be active members of value co-creation process and want to feel they can participate for creating personalized and unique value (Prahalad & Ramaswamy, 2004a). In a general level, digital service design process is significantly different from earlier ways to design goods and services (Williams et al., 2008).

Although co-creation with customers have positive impact on service capability and customization (X. Zhang & Chen, 2008), it is good to mention that there are also challenges involved. Not all consumers want to participate or provide their inputs. Integrating actors to the development process might also be difficult (Tuunanen et al., 2010). All companies might not be benefiting from value co-creation or they don't have customers who could be involved into the process, so these opportunities should be carefully assessed (Saarijärvi, 2012). Value co-creation can also change into value co-destruction (Lintula, Tuunanen, & Salo, 2017; Lintula, Tuunanen, Salo, et al., 2017).

The idea of customer's value creation processes is not new, but for a long time literature focused mainly on the value-in-exchange in economics and business economics (Grönroos, 2008). Later different mechanisms have been presented to support value co-creation process, but literature mainly has focused on abstract level possibilities in different business contexts without giving concrete information on how different actors can be involved into process or how traditional actor roles could be reshaped (Saarijärvi, 2012). Literature have also been concentrating too much to product process perspective (Cossío-Silva et al., 2016) or there has been a lack of interacting mechanisms among the constructs (X. Zhang & Chen, 2008). Easily value co-creation only supports company's new product design, development and production processes and customer side value

is forgotten (Saarijärvi, 2012). In order to eliminate the lack of the literature that the customer point of view have been missing, Tuunanen et al. (2010) have created a conceptual framework for development of consumer information system (CIS) which they define as following:

> Systems that enable consumer value co-creation through the development and implementation of information technology enabled processes that integrate system value propositions with customer value drivers.

Value co-creation is seen as an interplay, where users get value propositions and their behavior depends on their personal goals or values. Tuunanen et al. (2019) investigated customers' utilitarian and hedonic value drivers and linked them to CIS themes (construction of identities, social nature of use, context of use, participation in service production, service process experience, goals, and outcomes) and based on that, suggest that systems should be designed according to users' value drivers.

1.1   Research objective and questions

This study adopts the same point of view as Lintula et al. (2018) used in their research earlier and through service dominant-logic lens have conceptualized Pokémon Go as a service provider offering different value propositions for the users. Players may take advantage of these value propositions and by adding their own resources like knowledge and money or integrating their time, they are actively co-creating value. By playing virtually, and at the same time in physical dimensions, players from all over the world, may co-create player perspective values like feeling fun or social unity or enhancing their physical wellbeing (Lintula et al., 2018).

The main goal of this thesis is to find out on what are the most desirable game features in worldwide AR-game Pokémon Go and what type of value propositions they represent, so the research questions are the following:

- *What are the most desirable game features in Pokémon Go?*
- *What type of value propositions these features represent?*

1.2   Method

This study consists of two parts. First part consists of literature review as a theoretical background. The second part is about empirical qualitative field study. The empirical part of this study uses the data collected from Pokémon GO players.

Data gathering has been planned to do by interviewing 10-20 Pokémon GO players, which have been asked to list the features they use the most in the game, and also features they don't use or that are used the least. Mentioned features are supplemented with a deeper insight using the laddering interviewing technique and all answers are recorded to a specific form. Content analysis starts by classifying ladders into attributes, consequences and values and then using individual summary codes to breaking down the answers. (Reynolds & Gutman, 2001). In this thesis, these attributes are thought as value propositions that the game offers and they are classified into different categories based on (Rintamäki et al., 2007) classification of value propositions.

1.3   Thesis outline

This thesis starts with a literature review. The literature review consists of concepts which are needed to understand the whole entity such as value, service, value co-creation and value propositions. Also the framework for value co-creation in Consumer Information Systems (CIS) including customer value drivers and system value propositions is introduced (Tuunanen et al., 2010). In the beginning the change from goods-dominant logic to service-dominant logic is browsed through together with general digitalization and multiple industrial revolution to lead the reader's mind to see the changes in value, value-creation, and value experience or even perhaps to understand better the reasons behind this change.

2 THEORETICAL BACKGROUND

The purpose of this chapter is to present the theoretical background of the study. This study resolves around the value co-creation, so the theoretical overview concentrates to describe how the value can be understood and how the understanding has changed as the surrounding world has changed from good-oriented to service-oriented thinking. Important aspects are the value co-creation process, the concepts of value, service and different value propositions.

2.1 The concept of value

The definition of value has changed in recent decades, but it still cannot be unambiguously explained. If already Aristotele in his time pondered the differences between 'use value' and 'exchange-value' (Fleetwood, 1997), it is obvious that this issue has interested people for a very long time. Later in time it has been discussed about 'the real value' and 'the nominal value' (Smith, 1937) or the value has been an 'interactive relativistic preference experience' or has been explained by opposite definitions like extrinsic and intrinsic, active and reactive or self-oriented and other-oriented value (Holbrook, 1999). The meaning of value depends on the perspective from which it is viewed, but also on the era the viewing is done.

   In the time of first Industrial Revolutions, the orientation was goods-dominant logic which means that the economy was mainly based on products and production and the efficiency of manufacturing processes. From the point of value, products were delivered with embedded value. The value was planned and decided in the manufacturing companies and their marketing departments. Customers were not involved in companies' planning or designing process, so in basic, customers bought value which someone else had decided they would need. Value for the customer was worth of money which was paid to the company (Grönroos & Voima, 2013).

Traditionally and as a central process of economic exchange, value means monetary values, which companies can earn from markets by selling manufactured products or services (Vargo et al., 2008). This goods-dominant logic is based on the exchange of manufactured products and money. During the manufacturing process, the value will be embedded into the product and during the exchange, value is transferred while tangible goods and money change hands in discrete or static transactions. (Vargo & Lusch, 2004a). Value is controlled by the manufacturer and is worth of money spent (Grönroos & Voima, 2013). The price is formed according to supply and demand in the market (Vargo et al., 2008). The core idea in the early economics was in transactions. Transfer of the ownership of the goods or use against money in transaction between different parties was the way how the value was transferred from the company to the customer. The old argue "The product is something that has value to someone" (Kotler, 1972) describes these thoughts well.

This old-fashioned view is very product- and company-centric and mainly focuses to dominate and control the markets. The more effectively and autonomously firms designed new products and delivered value to the customers, the better it was. The needs of the end users were hardly taken into account, so also new innovations were created from the perspective of the company (Kim & Mauborgne, 1997; Prahalad & Ramaswamy, 2004b). The interaction between different parties was not important. In short, companies were producers and customers were consumers (Echeverri & Skålén, 2011). As the main purpose of the value was to enrich the business, the customers were only users or destroyers of value (Vargo et al., 2008). People were targeted for marketing efforts that focus on selling, buying and owning physical products (Vargo & Lusch, 2004a) and by owning a something, user was valued and got happiness to his life (Senge et al., 2001).

As the economy has changed and become more service-focused, the meaning of value has also changed as illustrated in table 1. The alternative view for goods-dominant logic is service-dominant logic, which points out that value cannot be defined alone by the company. The value is neither a feature which could be transferred. The value is much more than just some single attribute, which the company have defined and embedded. Instead, value is actively co-created between different actors in collaborative process (Senge et al., 2001; Vargo & Lusch, 2004a, 2004b).

	G-D logic	S-D logic
Value driver	Value-in-exchange	Value-in-use or value-in-context
Creator of value	Firm, often with input from firms in a supply chain	Firm, network partners, and customers
Process of value creation	Firms embed value in "goods" or "services", value is 'added' by enhancing or increasing attributes	Firms propose value through market offerings, customers continue value-creation process through use
Purpose of value	Increase wealth for the firm	Increase adaptability, survivability, and system wellbeing through service (applied knowledge and skills) of others
Measurement of value	The amount of nominal value, price received in exchange	The adaptability and survivability of the beneficiary system
Resources used	Primarily operand resources	Primarily operant resources, sometimes transferred by embedding them in operand resources-goods
Role of firm	Produce and distribute value	Propose and co-create value, provide service
Role of goods	Units of output, operand resources that are embedded with value	Vehicle for operant resources, enables access to benefits of firm competences
Role of customer	To 'use up' or 'destroy' value created by the firm	Co-create value through the integration of firm-provided resources with other private and public resources

TABLE 1 Goods-dominant logic vs service-dominant logic in value creation (Vargo et al., 2008)

Exchange of things is not the base for value creation, instead all change is based on changing services to other services. Value is seen more as an experience (Vargo et al., 2008), which appears, or is created in use (Grönroos & Voima, 2013; Vargo et al., 2008). If there are some tangible elements included into this process, the potential value of those is presented to the customer, but the value is finally determined by the customer. Instead of value itself, companies can only offer value propositions (Vargo & Lusch, 2004a) as an invitation to the co-creation process (Lusch & Nambisan, 2015). The product or the service, or offerings as they are often called (Michel et al., 2008; Normann & Ramirez, 1993; Pagani, 2013; Vargo & Lusch, 2004a) is not the value itself, instead the value can be derived by using them. As a conclusion, offerings are used as a tool to reach individually experienced benefits (Senge et al., 2001). Companies exist to serve customers and enabling them to benefit, not only produce something (Senge et al., 2001).

Grönroos (2008) mentioned, that value can be an outcome of the self-service process which the offering has made possible. This customer service logic describes how customers may also use different resources in this process to be able to create unique value themselves. Of course, the customers must have needed skills to be able to run the self-service process. The second opinion is to be involved in the process, where one is able to enjoy the full-service where the value outcome may be a better feeling after the process. If a person has all the necessary tools, a place where to work and skills to for example repair his own car by himself, he may do it, otherwise it is better to use car service company. If needed skills or resources are missing, the product or the service is not usable or some unexpected and unpleasant things happen, the value-in-use may be in low-level or even negative. (Grönroos, 2008).

Lusch and Nambisan (2015) reconceptualized value to be happened when the customer feels the offering useful in some context. This context and participating actors with each's own resources may change from time to time, so also the experience of value is dynamic (Lusch & Nambisan, 2015).

People rarely reflect their experiences by discussing about the value itself. Everyday discussion concentrates to benefits and feelings. Value happens when the customer feels the value proposition useful and beneficial (Lusch & Nambisan, 2015). This individual value is felt in use through physical, mental, social or virtual actions and it also reacts through past, current or imagined future experiences. (Grönroos & Voima, 2013). Customers are willing products to fulfill their needs and they are seeking the core customer value (Armstrong et al., 2014).

Customer benefits can be tangible like transportation (Senge et al., 2001) or intangible like freedom or fun (Senge et al., 2001), self-expression (Armstrong et al., 2014), satisfaction (Michel et al., 2008), adventures or relaxation (Rintamäki et al., 2007), pleasure, happiness, enjoyment or entertainment. These mentioned intangible values are often called as hedonic values. They help user to reach a fulfilling experience and encourage them to prolonged use, with the easiness of use and visual attraction. They also help users to accept pleasure-oriented information systems like computer games (Van der Heijden, 2004).

2.2 The concept of service

The differences between goods and services have been discussed for a long time, but many of these discussions are from marketing point of view and in the past, marketing was a separate function after production (Gruen, 1997). The marketing activities were placed as a separate tasks to be performed in the product development process (Magrath, 1986).

As being just targets for marketing, customers were not involved into innovation or development processes (Vargo & Lusch, 2008a). Products were seen as units of exchange and that created the criteria for economic exchange and marketing during that time (Vargo & Lusch, 2004b). At that time one common set of tools for marketing was the marketing mix and four P's (product, price, promotion and place), which was introduced already in the 60s. It mainly concentrates to the point of the company and how it can best target marketing efforts to the customers. Although the motivation of both customer and producer was mentioned, no further attention was paid to it (Borden, 1964). Marketing saw people as objects, numbers or statistics (Gruen, 1997). At that point, perspective was not customer-oriented and for example, services were hardly mentioned in the early marketing (Vargo & Lusch, 2004a).

The marketing of the early services was first based on the similar model as marketing of the goods. From the perspective of services, this caused some challenges. If intangible services are marketed as tangible products (Yudelson, 1999), some important aspects are easily forgotten. Services cannot be stored like goods, but they must be available when needed. Service is something which is usually experienced in person and is happening at a certain moment. Difficulties in dealing uniformly products and service marketing and the increase of understanding the customer perspective inspired Magarath to extend the 4 P's with personnel, physical facilities and process management viewpoints so that it could better serve the marketing of services (Magrath, 1986).

Early services were mainly based on face-to-face delivery (Ghani & Kharas, 2010) and happening directly between the customer and the service provider, who added her knowledge for this rendered service experience (Michel et al., 2008). Due to the digitalization, nowadays many services are portable, tradeable and can be scaled globally and transferred over the Internet to all over the world (Ghani & Kharas, 2010).

The definition of service is still a bit unclear. Vargo and Lusch (2008b) make a difference between singular term 'service' and plural term 'services'. Service refers to the process of using one's resources for the benefit of another entity and it also refers more to an intangible type of product (Vargo & Lusch, 2008b). Services can be seen through final-demand products like transportation services, haircuts, hotels, education, medical care, communication or they can be classified by factor and non-factor transactions (Kravis, 1983). One view is that services are the resolution of long-term changes is economic revolution (Kravis, 1983; Ochel & Wegner, 1987), but often services are defined what they are not or how they

differ from goods. Sometimes services are defined so, that because they are immaterial or intangible products and if they are not part of agriculture, mining, manufacturing, construction or other industry sector, they must be part of the service sector (Kravis, 1983).

From the point of goods-centered view, services are often described in terms of a type of intangible good to be able to create distinction between goods and services. That viewpoint is willing to develop different ways for production and distribution, depending on which one, intangible or tangible good, is involved. Services are seen as units of output (Vargo & Lusch, 2008a). As mentioned above, services are described so that there is not much physical tangibility involved (Kravis, 1983), although in reality, tangibility and intangibility are not good options to be used in the service definition. They see things too much from the manufacturing viewpoint (Vargo & Lusch, 2004b), which is somehow misleading. It is not relevant to define services as immaterial product, by their technological characteristics (Ochel & Wegner, 1987). One common definition is that intangible and nonstorable goods are services, but as these or almost any characteristics are quite heterogenous, this definition fails to make distinction between goods and services clear (Kravis, 1983). Vargo and Lusch (2004a) define services as

> the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself.

Products and services are not mutually exclusive (Vargo & Lusch, 2004b) and it might not be relevant to create distinction between those, because they can easily be limited to each other (Michel et al., 2008). Even commonly used characteristics like intangibility, heterogeneity, inseparability or perishability are not good attributes to distinguish these from each other (Vargo & Lusch, 2004b).

Peter Hill discussed in 1977 about service situations, service relations and changing conditions in service delivery. He mentioned differences in ownership changes between goods and services. When the ownership is clear, which means that all inputs are owned by the producer and can be assigned to the buyer, who buys the ownership against money, then it must be the good. But if there are some inputs whose owner is unclear, ownership cannot be changed. The ownership of goods can always be changed, so these unclear cases must be services. Hill also highlighted that only goods, whether they are tangible or intangible, can be entities. Services also always require relationship between the provider and the customer and they cannot be exported to another country. (Gadrey, 2000). According to Armstrong et al. (2014) products may include services, but service is not tied to a physical product. Services consist of intangible activities, benefits which are given from one to another and satisfaction and they do not require any ownership. Products are mechanisms for delivering services, so product innovations are more likely service innovations (Lusch & Nambisan, 2015).

Service- dominant logic serves new type of logic of exchange. It sees service as a process in which different actors are in conjunction with other parties using their own resources for getting benefits. Service is thus an application of

competences or operant resources, which both mean knowledge and skills (Vargo & Lusch, 2008a). Products and services could be thought as offerings (Michel et al., 2008; Pagani, 2013), activity-based combinations of products and services (Pagani, 2013). Service could also be thought as a flow of actions (Magrath, 1986), where different parties change services with each other (Vargo & Morgan, 2005) and the service experience happens when different actors act in same process (Grönroos, 2008). These activities provide benefits and derive value for each party either through a good or appliance and are changed in the markets (Vargo & Morgan, 2005). Services always happen in certain place and time, so they cannot be stored (Tuunanen et al., 2019).

Digital services differ from traditional services. Although ownership has been thought to be related to physical products and not to services, one difference is that digital ownership and rights are important part of digital service context. Williams et al. (2008) define digital services as following:

> Services, which are obtained and/or arranged through a digital transaction (information, software modules, or consumer goods) over internet protocol (IP).

Traditional services usually need personal communication, but in digital services the service provider and the user usually never meet. Both these digital parties can be either providers or users to each other. One more difference is that digital services always require computer technology, but interactions may happen also other way that digitally. (Williams et al., 2008).

Digital services are offering novel value propositions, automated consumer-facing processes, close consumer relationships (Wulf et al., 2017) and they are usually planned to benefit users by solving some of their problems or satisfying their needs in a real life. On the other side also the company is expecting to achieve some objectives, like business, interaction and technological objectives. (Williams et al., 2008). Users of digital services easily feel powerfulness, because of availability for other similar choices from competitors. To be successful, digital service should offer personalization and connectivity. They must be context adaptive and available everywhere. They also must be fun to use. (Leimeister et al., 2014). Different value propositions from the service system are available for the users and regarding to own needs, users take advantage of them (Tuunanen et al., 2019).

2.3   Value co-creation

The existing literature of value co-creation looks at things from few different perspectives; products vs. services and company-centered vs. customer experience-centered. Main themes consists of customer experience and competence as a tool to value co-creating, customer involvement, collaboration between consumers and a company, innovation of services, service science development and service-dominant logic from three main theoretical perspectives (service science,

innovation and technology management, marketing and consumer research) (Galvagno & Dalli, 2014).

Some business models present value creation and value capture, but often value creation in these models means value creation for the company's stakeholders and value capture for the company owners by delivering and receiving value in transactions between the consumers and the company. Value creation often consists of value propositions offered by the company, targeting to whoever the value propositions are offered to, appropriation to ensure sufficient profit and delivery in a cost-effective way. (Biloshapka & Osiyevskyy, 2018). Value co-creation forces companies to accept a different angle of approach, where the customer is not just a target in consumer aggregation. Instead customers are active participants and the company cannot control what and how they value their things or how they create their experiences. (Prahalad & Ramaswamy, 2004b). According to service-dominant logic the economy is no more goods and company-centric so, as also Prahalad and Ramaswamy (2004b) say, traditional markets have been challenged as table 2 illustrates.

	Traditional Goods-Centered Dominant logic	Emerging Service-Centered Dominant logic
Primary unit of exchange	People exchange for goods. These goods serve primarily as operand resources.	People exchange to acquire the benefits of specialized competences (knowledge and skills), or services. Knowledge and skills are operant resources.
Role of goods	Goods are operand resources and end products. Marketers take matter and change its form, place, time, and possession.	Goods are transmitters of operant resources (embedded knowledge): they are intermediate "products" that are used by other operant resources (customers) as appliances in value-creation process.
Role of customer	The customer is the recipient of goods. Marketers do things to customers: they segment them, penetrate them, distribute to them, and promote to them. The customer is an operand resource.	The customer is a coproducer of service. Marketing is a process of doing things in interaction with the customer. The customer is primarily an operant resource, only functioning occasionally as an operand resource.

Determination and meaning of value	Value is determined by the producer. It is embedded in the operand resource (goods) and is defined in terms of "exchange value".	Value is perceived and determined by the consumer on the basis of "value in use". Value results from the beneficial application of operant resources sometimes transmitted through operand resources. Firms can only make value propositions.
Firm-customer interaction	The customer is an operand resource. Customers are acted on to create transactions with resources.	The customer is primarily an operant resource. Customers are active participants in relational exchanges and coproduction.
Source of economic growth	Wealth is obtained from surplus tangible resources and goods. Wealth consists of owning, controlling, and producing operand resources.	Wealth is obtained through the application and exchange of specialized knowledge and skills. It represents the right to the future use of operant resources.

TABLE 2 Traditional goods-centered dominant logic and emerging service-centered dominant logic (Vargo & Lusch, 2004a)

Millions of customers are networked globally and can be aware of other consumers' feelings, actions, and reactions. They actively give feedback to companies and share it with other consumers. They also have access to all kind of information regarding to companies, products, technologies, performance, prices, quality and performance (Prahalad & Ramaswamy, 2004a). Customers are willing to influence in every part of the business system, so it's no longer relevant from the company's perspective to try to control the whole process or sales channels alone. Customers want to interact and co-create value with the company and they should also be able to interact with communities of professionals, service providers and other consumers. (Prahalad & Ramaswamy, 2004a).

Customers are usually participating in social networks with either existing or potential co-customers. They share their positive and negative experiences, in social networks and may have a great impact to other people in this network, who for example are reading influencers' blogs or written reviews. Customers are also giving support to each other through social networks. They give contributions and insights for each other, for new product development and product usage. (Harmeling et al., 2017). H. Zhang et al. (2020) highlights the importance

of formal and informal social media connections like face-to-face meetings or seminars where also customers are invited, enabling conversations, information and knowledge sharing and cognitive linkage between customers and employees, communities inside social messaging apps.

Sometimes value creation may refer to a situation, where customer is creating value-in-use and value co-creation refers to situations where direct or indirect interaction is happening between different parties. From the point of service-dominant logic literature, both of these are treated as co-creation. (Grönroos & Voima, 2013).

The value co-creation process is a continuous process where customers, other actors, competences, resources, and different roles are integrated and re-configured to each other. The more complex offerings, the more complex configurations (Normann & Ramirez, 1993). Vargo et al. (2008) have used a service system to abstract the idea of value co-creation process, which integrates different resources. Each service provider creates their offerings available to the markets and potential customers either accept or not the proposed value. If proposition is accepted, customer is assisted in their own value co-creation process and beneficiary uses all involved resources to be able to experience the value in context of their own networks (Vargo & Lusch, 2008a).

In value co-creation process different parties create value together in a collaborating process. Company is offering different kinds of value propositions like goods and services by utilizing different resources available. Customers then use these and through this process are able to create unique value (Vargo & Lusch, 2008b). Later refinements elaborate value to providers to include all actors, not only companies. Value creation requires multiple actors and always includes the beneficiary. The process is relational and beneficiary oriented and is coordinated through actor-generated institutions and institutional arrangements like formal laws, practices, informal social norms or conceptual and symbolic meanings or as a set of these (Vargo & Lusch, 2016).

Suppliers and customers are on the same side and interacting with each other to be able to develop new opportunities for new and growing businesses (Galvagno & Dalli, 2014). Different parties change services into services and sometimes use goods as a tool for service provision (Vargo & Lusch, 2008a). Both the customer and the company are collaborators in creating value and extraction of economic value, which may happen at multiple point of interaction. (Prahalad & Ramaswamy, 2004b).

Key drivers for value co-creation are operant resources, like skills and knowledge (Vargo & Lusch, 2008a), customer's experience, logic and ability to extract value of used resources (Grönroos & Voima, 2013), ability to work with other actors (Frow & Payne, 2011), network assets, persuasion capital, creativity (Harmeling et al., 2017) or core competences or organizational processes (Vargo & Lusch, 2004a). Chandler and Vargo (2011) mentions brand knowledge and shared information and H. Zhang et al. (2020) mentions social capital embedded in the social-media-interactions. Each actor may in some context also be a resource to other actors. Operant resources can be either physical or mental (Vargo

& Lusch, 2004a). Common thing for these operant resources is that no-one owns them, single user is not able to take control of them (Chandler & Vargo, 2011) and they usually are dynamic, infinite and produce effects (Vargo & Lusch, 2004a). Latest updates for service-dominant logic see operant resources as fundamental sources of strategic benefits (Vargo & Lusch, 2016).

High-quality interactions, which may be anywhere in the system, transparency, understanding the risk-benefits, dialogue and access are important enablers for successful value co-creation. Consumers may want opportunities to interact in the way they want through multiple channels and impose their views of choices. They may also want to be able to build together with the company and company's experience environment a personalized experience. (Prahalad & Ramaswamy, 2004b).

Prahalad and Ramaswamy (2004b) suggest, that to enable value co-creation it is important to build blocks of interactions between consumers and a company. Key blocks are dialogue, access, risk assessment on both sides and transparency. Both parties must be on an equal footing, have the same transparency access to information and needed tools. Active dialogue means interactivity, shared learning and communication, which also maintains the loyalty and deeper engagement. Transparency reduces the asymmetry between the company and the customer by allowing the customer to be aware of information like prices, costs and profit margins.

Grönroos and Voima (2013) see value creation as an all-encompassing process including provider and customer activities and categorizing different actions in value creation into three separate spheres. This is illustrated in figure 1. As a provider (provider sphere) and in a role of a value facilitator, the company produces potential value by resources and processes, which customers may use in their value creation. While customer is creating value (customer sphere), the provider has a passive role. Customer is creating real value, from potential value independently without direct interactions and separate from the provider. Customer is active and experimenting with resources, processes, and the outcomes of processes socially, physically, mentally, temporally, spatially or virtually. Customer can create value-in-use either individually or collectively and either independently or socially.

In addition to these two spheres there is joint sphere (value co-creation sphere), where the customer has two roles. One on them is to co-produce with the company resources and processes and other one is to create real value jointly with the company. From the production perspective, customer is in direct interaction and may act as a co-developer, co-designer or a co-manufacturer. From the value creation perspective, customer may invite the provider to the process. From the company point of view, the provider may have an opportunity to engage the customer into the process. This is the actual sphere for value co-creation, but value can happen in any of these spheres and can start directly from joint stage. (Grönroos & Voima, 2013). For value creation and extraction, any point of interaction between different parties may be critical (Prahalad & Ramaswamy, 2004b). However, involving customers in development or design as co-producers

is optional, but value co-creation is not. Value is always co-created. (Vargo & Lusch, 2016).
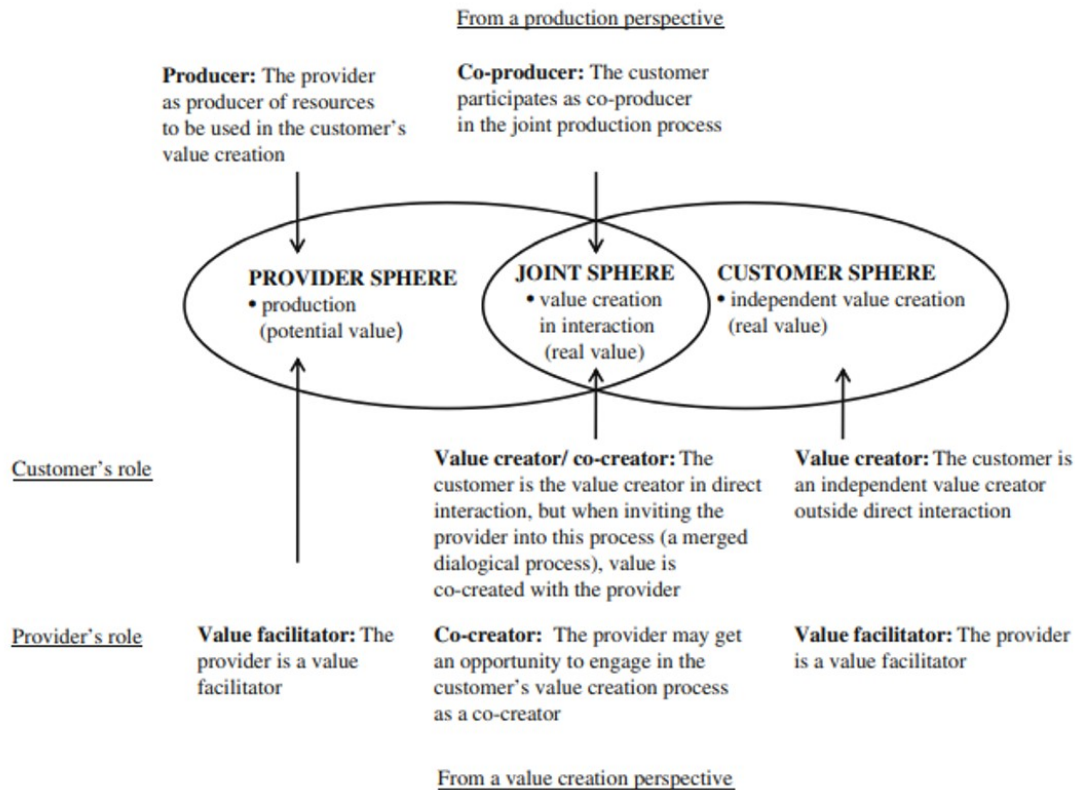

FIGURE 1 Value creation spheres (Grönroos & Voima, 2013)

Each person is unique, so each value co-creation process is unique as well as the co-creation experience and value (Prahalad & Ramaswamy, 2004a). It is important to understand this unique meaning of experience. The quality of company's processes and products easily becomes irrelevant if the experience is bad. If interaction possibilities between companies and consumers are missing, the uniqueness of each customer is forgotten or there is not enough flexibility or capacity to create a variety of experiences, the final experience may not be good (Prahalad & Ramaswamy, 2004a). If a company is noticing problem areas in value co-creation process, it should take corrective measures and allocate resources more effectively to problem areas like raise stakeholders' knowledge and skills, help them to be creative, trigger their passion, build trust and commitment and ensure connectedness (Merz et al., 2018).

Value co-creation does not mean that value creation is moved from the company to the customer (Vargo et al., 2017). It does not mean either customer focus, it does not mean customer service, in does not mean customers outsourced activities, it does not mean a wide range of products. Nor it means marginal customization of products or services, nor single customer customization by using mass

customization features defined by the company, nor scripting or staging of customer events around company's offerings. It does not mean market research or situations where customer is a product manager, innovator, or co-designer. In addition, customer might even sometimes be wrong, so it is not worth to keep customer as a king. (Prahalad & Ramaswamy, 2004b, 2004a).

Context influences value co-creation through its influence on resources and service. Context is sometimes defined as a unique and complex set of actors and links between those which is illustrated in figure 2. A multi-level conceptualization describes the context. Micro-context level frames exchange between individual actors, where each actor has indirect interaction and is serving another actor actively. Meso-context level consists of model where actors can have direct interactions and at the same time, they indirectly help another actor. Macro-context level consists of multiple simultaneous direct and indirect interactions. Meta-context layer is covering all these other service-for-service exchange layers and forming a fundamental aspect of value co-creation, service ecosystem. (Chandler & Vargo, 2011).
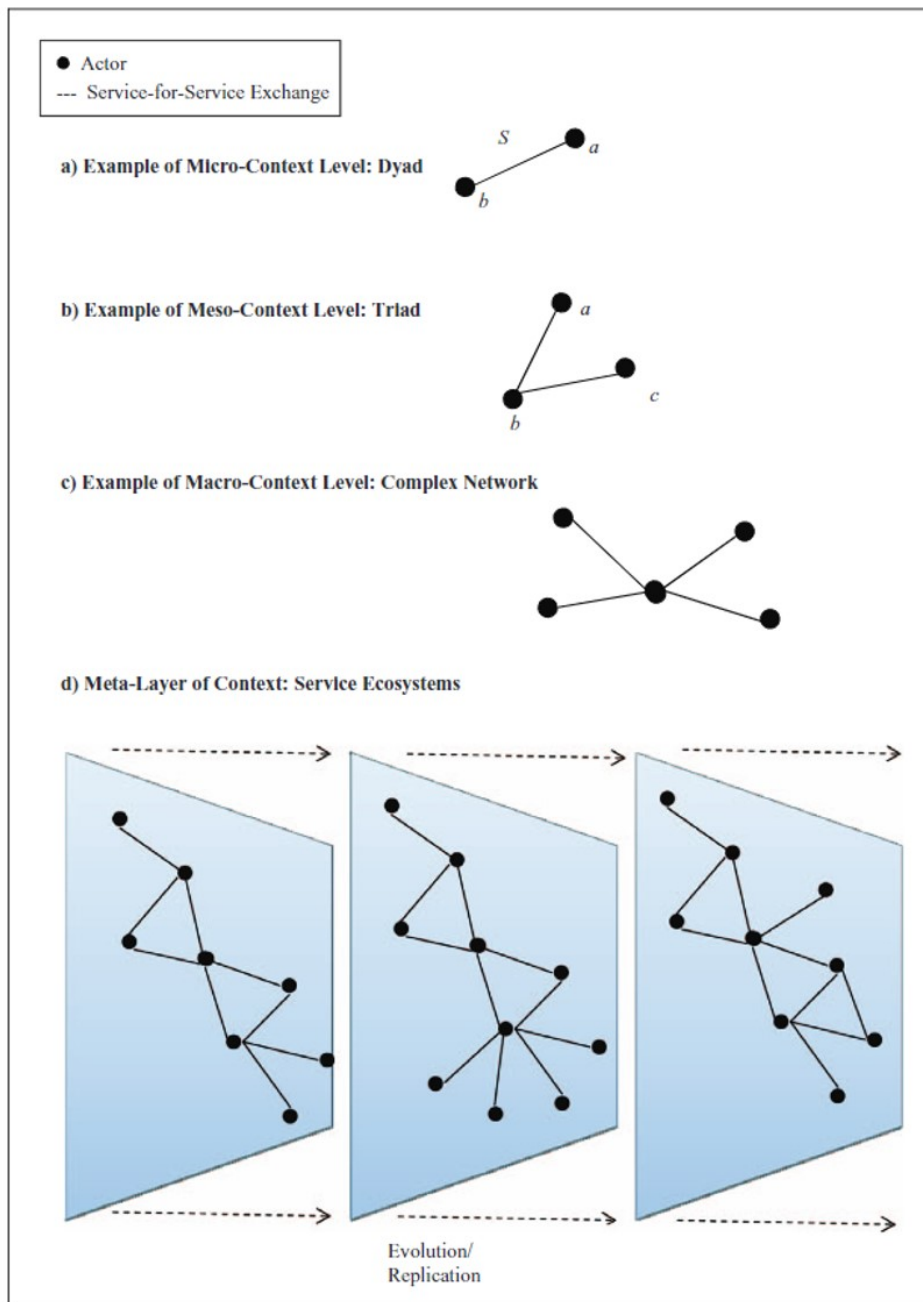
FIGURE 2 Different layers in context (Chandler & Vargo, 2011)

Akaka et al. (2013) highlight the meaning of continually changing cultural context in service ecosystems. The context changes depending on the social structure, the relationships among different actors and other contextual factors. Interactions relate and evolve in many perspectives (micro, meso, macro). In microlevel, an institute is guiding exchange and interaction happens between individual actors. Meso-level context includes microlevel interactions, additional actors and distinct set of institutions. Macro level consist of national, regional and global context. Social context affects in a complex way to value creation, because of the diversity of resources, multiplicity of institutions and the enactment of a plethora of practices in a particular context. In service ecosystems, different actors globally

can, in different levels, enact various practices and engage in service-to-service exchange. (Akaka et al., 2013). Institutions can be thought as game rules. They help to understand service ecosystems and social activity like value co-creation. (Vargo & Lusch, 2016).

Value-in-context view have been recognized to include both value-in-use and value-in-exchange as its' functions. The company may propose value propositions which may include value-in-exchange implications like price and product attributes and value-in-use implications which happen during the usage like utilitarian, symbolic, hedonic or other similar values (Kuzgun & Asugman, 2015). Value-in-context has been said to be an extension of value-in-use by centering to value-in-use, but at the same time being influenced by environmental factors like time, place, social norms, culture and access to other internal and external resources. Value depends on the person and overall socio-historic situation where it may or may not be created. (Akaka et al., 2015).

Kuzgun and Asugman (2015) mention multi-actor integrations (dyads, triads, networks), value co-creation and long-term relationships as three key dimensions of value-in-context. Dyadic relationships happen between company and customer or among customers. Triadic or complex networks are many-to-many networks.

In dyadic company-customer relationships company is creating value propositions with their service related to service quality, price benefits, utility benefits or the knowledge and skills of service staff. Customer creates value (satisfaction, trust, commitment) by using and utilizing the service and value proposed. In dyadic customer-customer relationships the value is created in interaction between different customers. The derived value is the positive information shared about company and its service, so called positive 'word-of-mouth communication'. In triadic and complex networks customer is engaged in social many-to-many networks and computer mediated environments (virtual brand communities, social media). The derived value is related to long term engagement of the customer who thinks and communicates positively about the company and its' services. (Kuzgun & Asugman, 2015). Customer engagement becomes a psychological state during co-creative customer experiences in cognitive, emotional and behavioral value co-creating processes (Brodie et al., 2011). Harmeling et al. (2017) define customer engagement as

> a customer's voluntary resource contribution to a firm's marketing function, going beyond financial patronage.

Also Verhoef et al. (2009) mentions that social environment affects to customer experience. Social environment consists of direct and indirect or positive and negative interactions between customers and company and company's employees. Interactions may also happen among customers (Verhoef et al., 2009) or between customers and customer communities (Prahalad & Ramaswamy, 2004b).

Value co-creation have been often seen as a value mediator, but it has also been seen that there is an association between trust and/or commitment with

social satisfaction, which in turn affects economic satisfaction, at least in manufacturing domain and in b-2-b context (Sales-Vivó et al., 2020).

However, it should not be forgotten that not all companies are interested in value co-creation and not either all value co-creation mechanisms can unleash customer resources which can be integrated by delivering economic, functional, emotional or symbolic value propositions (Saarijärvi, 2012).

2.4   Value propositions and value co-creation mechanisms

The evolution from goods-oriented view to digital and service-oriented view have made changes in actor roles and interaction. Customers are no longer targets outside of the company or only sources of money. Companies are no longer unilaterally providing goods with embedded value. All actors in the process are actively participating and initiating new ways to support each other's value creation. (Saarijärvi, 2012; Vargo & Lusch, 2004a).

As Saarijärvi (2012) mentions, value co-creation mechanisms have been in the central role in the recent evolution. New technologies and the internet are often facilitating these mechanisms and creating new ways to be in interaction and integrating resources. (Saarijärvi, 2012). Digitalization enables new ways to innovate and create, but also to experience the value. Customers are having a huge amount of personalized and customized offerings available regardless of time and place. They are willing to participate via mobile devices, digital platforms and interfaces. (Piepponen et al., 2022). Integrated networks where suppliers and customers work together are important for market interaction especially in mobile, computer or software technology related areas (Ballantyne et al., 2011). Value co-creation process happens between multiple actors, including also the beneficiary (Vargo & Lusch, 2016). In addition to customers and companies, an actor can also be non-human like internet of things (IoT), artificial intelligence (AI) or human-machine interface (HMI) (Taylor et al., 2020). Any actor in the process may initiate value propositions (Ballantyne et al., 2011).

Early literature is mainly focusing on how value can be delivered for the customer, not so much for the value co-creation or value propositions (Ballantyne et al., 2011). Traditional view identifies ways to support company's value creation. Companies often want to engage customers and their additional social, cultural or physical resources into company's processes using different co-creation mechanisms like co-production, co-design, co-promotion, co-outsourcing or co-development. Often these support company's value creation and see customers as resource providers. However, from the company value point of view, this customer role as a resource provider is giving important customer insights, which together with customer creativity or even concreate customer work support the company's new way of product development, design and production processes. It might be fruitful to think things also from other perspectives such as how additional customer resources (not money) could be engaged for helping the delivery of the value propositions for the customers in these value co-creation

processes. This is one of the changes and new benefits which companies may get from value co-creation mechanisms like co-promotion, co-design, or co-development. (Saarijärvi, 2012).

Companies wish to engage their customers to their value co-creation process by offering value propositions which motivate and empower their customers. Engagement can be based on customer-owned resources, on interactive tasks or on experiment. Customer-owned resources consists of network assets, persuasion capital, knowledge stores and creativity. Interactive tasks are typically based on the core offering. They are tasks which customers complete either mentally or physically such as supporting other customers, writing a review, investing personal ideas and knowledge, and while tasks are completed, customers usually get extrinsically rewarded like getting discounts, points or badges. In experimental engagement, motivation comes from positive emotions and enjoyment by simulating psychological and emotional connections to other actors or resources. Experimental events are central elements in customer engagement, and they enrich the content which the customer is generating and the content which the company can extract from the event. Task-based initiatives and experimental-based events usually complement each other. While customers are motivated to complete task which company have defined, experimental initiatives increase and supplement motivation, autonomous customer contributions and enrich the product experience and engagement. (Harmeling et al., 2017).

Customers want to have something desirable and when companies offer them motivating value propositions, they are more likely voluntary and actively participating. Building psychological ownership (task-based) and self-transformation (experimental-based) motivate customers to prefer the company to the competitors, create long-term relationships, make their own resources available and that way enhancing the company and accept value propositions and economic transactions which give benefits for the company. (Harmeling et al., 2017).

According to service-dominant logic, value is always determined by the customer, so the company can no longer unilaterally dictate customer what the value is. Companies may only offer customer value propositions, which represent the potential value (Vargo & Lusch, 2004a). Or as Ballantyne et al. (2011) elaborates, companies may participate in value creation by developing value propositions as reciprocal promises of value, but value will still be determined by beneficiaries (Vargo & Lusch, 2016). Expectations for value depend on actor's own goals and the situation factors including consequences of actions. This situation-mix affects to motivation how actor enters marketing interaction to which service providers want to attract customers as a goal to share resources, satisfy customer needs and their goals. Value propositions, as a part of value co-creation process, are interaction-specific long-term judgements which are meant to share resources and skills. (Taylor et al., 2020). They consist of multiple transactions and are delivered over a longer time frame. Usually they are co-created in interaction between different actors and targeted to some specific markets. (Ballantyne et al., 2011).

For successful value proposition creation, it is important to understand the requirements and then develop and influence a process which enables efficient and effective knowledge sharing and dialogue and managing the in-use-experience. Knowledge sharing and dialogue activities are essential activities, as well as process-orientation, interactivity and knowledge generation. All parties generate service to other parties and reciprocally obtain it themselves. For successful value proposition, deep relationships between stakeholders is needed. (Frow & Payne, 2011). For longer term relationships and equitable exchange, reciprocal value propositions are essential especially with multi actor-networks. Co-creation and co-evolving of value proposition happen over time, so it is natural that also value-in-use is realized over time. It should not be forgotten either that the process itself and the propositional agreement it enables may appear as a unique value to someone. (Ballantyne et al., 2011).

Rintamäki et al. (2007) conclude that while identifying the customer value propositions, the most important thing is to understand the key dimensions of customer value that motivate the targeted customers, then develop the value propositions and finally evaluate its ability to create competitive advantage. The company should be able to justify, document and demonstrate its value propositions. Company's offerings may include similar technical, economic, service or social features as its' competitors also has, but customers are seeking reasons for which one to select. (Anderson et al., 2006).

Frow and Payne (2011) approach the value proposition creation by first identifying the stakeholders and determining the core values. After which facilitating dialogue, knowledge sharing, identifying value co-creation opportunities and finally co-creating stakeholders value propositions. The process is iterative and consist of sensing, monitoring, feedback and integration of knowledge and other resources through trust, learning and adaptation.

Ballantyne et al. (2011) highlight three things for successful value proposition creating and communicating. First, reciprocal value proposition consists of a chain of different things, like variety of interaction, value propositions, negotiated agreements and value-in-use determinations and value-in-use assessment. Second, the dominance of suppliers should be changed to perspective where also customers and other actors are initiative and actively participating. And third, communication and the emergence of customer requirements should be seen as an interactive and mutually creative process and co-constructed dialogue, not as communication-as-transfer (Ballantyne et al., 2011).

Value propositions are enablers for value co-creation process and have potential for co-learning and co-development of new skills and knowledge. Through the communication they enable, they bring exchange activities and development of relationships closer together. (Ballantyne et al., 2011). They act as strategic tools to be used externally communicating the core benefits of offerings and internally focusing on the right things to be able to deliver promised benefits. Customer value propositions have the ability to link organization and its' customers by being central management tool for achieving a competitive position in the market and delivering value to the customers. They definitely are the core of

company's offerings, important management concept and justifying the existence of the company (Saarijärvi, 2012) and should be used as an active and continuous co-operative tool between companies and customers for negotiating, shaping and co-creating desired outcomes and value with each other. (Piepponen et al., 2022). Value propositions ties customers and company perspectives together (Rintamäki et al., 2007) and they are important mechanisms in value alignment within multiple stakeholder relationships (Frow & Payne, 2011), as also called as service eco-systems (Akaka et al., 2013). In these systems value propositions represent a point of view where actors believe in another actor's likelihood of committing needed resources to ensure the achievement of the actor's own goals (Taylor et al., 2020). Ballantyne et al. (2011) highlights the importance of reciprocal value propositions. Interactive learning approach and for example contemporary internet environments where markets are seen as social and interactive multi-actor networks with versatile relationships is giving additional benefits for creating reciprocal value propositions. (Ballantyne et al., 2011).

Value propositions should be unique (Rintamäki et al., 2007) and make claims of savings and benefits to the customer and in best cases, the offering may provide superior value (Anderson et al., 2006). They should be described in terms of perceived benefits or reduced costs and it should be transparent who is the beneficiary (Ballantyne et al., 2011). Naturally propositions should increase the benefits and decrease the sacrifices of the customer, so that the customer is able to feel that he stays on the positive side. Competences and resources should be utilized better than competitors have done to result in competitive advantage (Rintamäki et al., 2007) or strategic benefits (Vargo & Lusch, 2016). Propositions depend on the context from where and for what and by who they are created (Chandler & Vargo, 2011).

Anderson et al. (2006) have noticed that term value proposition is used by suppliers in three different ways. First, they may be used to describe all the benefits that customer might get by accepting the market offering. This requires well-known customers and competitors, but despite of that information, target customers may still not feel they are benefiting as expected. Second, value propositions may represent the fact that customer has competitive alternatives and value propositions are differentiating the company's element of offering from the next best alternative. Third, as resonating focus value propositions they concentrate on one or two superior points of difference which customer is valuing the most. (Anderson et al., 2006; Saarijärvi, 2012).

Rintamäki et al. (2007) divides value propositions into four different types of categories: economic, functional, emotional and symbolic value propositions. Economic and functional value propositions are reflecting utilitarian value and they are mainly based on decreasing sacrifices like lower prices, customers' time and effort savings or help for the customer for decision making. Utilitarian value propositions are more instrumental and task-based, rational, functional, cognitive, means to an end (Saarijärvi, 2012) and directly related to the company's core offering. Economic value is mainly based on direct buying and price is one of the main drivers for the customers, although it doesn't always mean the lowest price.

Customers may also consider the quality-price ratio and sometimes make more sacrifices to get better quality. For some customers this type of ratio is not important, and some customers always trust in basis of price. To be able to create economic value propositions, the company should have enough resources and competences like purchasing volume, an efficient distribution system or digitalized efficient supply chain. With economic value propositions, different transactions are playing an essential role, but according to service-dominant logic, exchange is related to benefits and the real value, not the good itself. Figure 3 illustrates the identifying customer value propositions (Rintamäki et al., 2007).
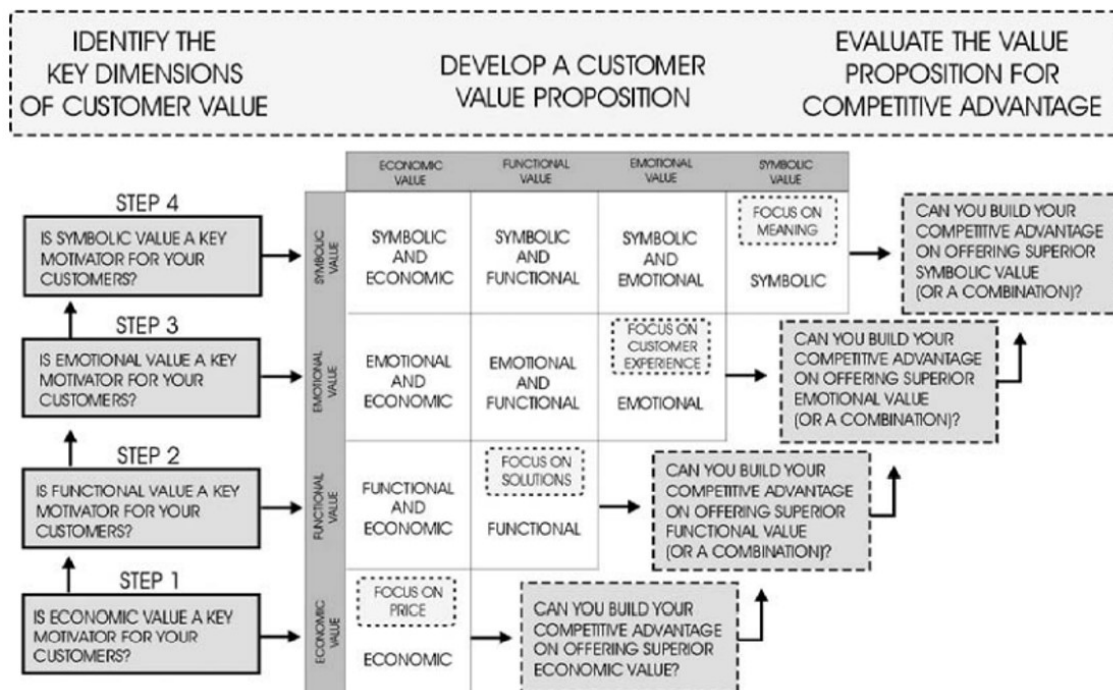

FIGURE 3 Identifying customer value propositions

Functional value propositions are meant to meet the exact functional need of the targeted customer and support customers' individual value-creating processes. Often economic and functional value propositions can be proposed as combined to be able to minimize customer effort and sacrifices. (Rintamäki et al., 2007). Emotional value propositions like clue propositions are based on different senses (visual, auditory, olfactory, sensory gustatory) and they appeal to people's emotions and motivate customers who are seeking for hedonic experiences. These clues are the heart of an experience and can be provided by people or by the environment. They can also be combined with economic and functional value propositions. (Rintamäki et al., 2007). Symbolic value propositions can be combined with any other propositions, and they motivate customers who may utilize the offering for self-experiment. As a conclusion, if economic value is a key motivator for the customer, price is the target where to focus. If key motivator is functional value, focus should be on solutions or if it is emotional, focus should

be on customer experience and finally, if the key motivator is symbolic value, focus should be on meanings (Rintamäki et al., 2007).

Saarijärvi (2012) uses (Rintamäki et al., 2007) reasoning as a natural and valid basis to divide value propositions into different value dimensions (economic, functional, emotional, symbolic). Based on that, he gives strategic implications of the mechanisms of value co-creation. Different value co-creation mechanisms offer additional customer resources (other than money) for company's value co-creation processes and support for the delivery process of customer value propositions. He also highlights that value co-creation mechanisms facilitate the delivery process of the company, but that depends on the customer value proposition, as well as the company's' willingness to utilize value co-creation processes. In some cases, not all customer resources are usable or integrable for delivering value propositions.

Saarijärvi (2012) chooses customer value-propositions as the central management concept and links different type of propositions with value co-creation mechanisms. There are multiple value co-creation mechanisms available, but companies should carefully considerate their value co-creation processes so that they support the strategy and value propositions of the company. It is critically important for the company that it has carefully analyzed the nature of their customer value propositions, understood the core of their offering, acquired in-depth information about customers and their available resources. This helps companies to evaluate the opportunities of different value co-creation mechanisms. Additional customer and appropriate value co-creation mechanisms offer unique opportunities and support for delivery processes and act as critical success factors in the future. (Saarijärvi, 2012)

Economic value propositions are often related to lower monetary sacrifices, so useful value co-creation mechanisms such as co-production and co-distribution, are related to engaging additional customer resources for the delivery of an economic customer value propositions. Functional value propositions are related to product attributes and often affecting to customer's daily lives. That's why best value co-creation mechanisms such as co-development of the whole experience-process and crowdsourcing are those which engage customers' knowledge and expertise for company's development process of new products and services. This helps to reach a common vision of where and how the actual value is created. Delivering emotional customer value propositions by using value co-creation mechanisms need careful consideration to how it is implemented. Customer experience consists of, among other things, memorable events and effect of other customers. The most useful mechanisms empower customers to active participation of creating and delivering customer experiences. Co-experiencing like engaging customers to design experimental service interfaces and retail atmospheres are well-known mechanisms for delivering emotional customer value propositions. Symbolic value propositions are related to meanings in daily actives where customers are expressing themselves, defining self-image and maintaining their social status. Plausible mechanisms engage customer resources for

reinforcing and co-constructing meanings. Blogs, brand communities or promotion activities are useful tools. (Saarijärvi, 2012).

Lenka et al. (2017) approaches value co-creation mechanisms from the view of the company and define two mechanisms for driving value co-creation process. Perceptive mechanisms produce information of customers' needs and with digitalization capabilities they allow companies to support customers in their value co-creation in meaningful ways. Companies may gather a huge amount of data and by sharing that data with their customers allow them to improve the service and its performance, efficiency and effectiveness together. Customers engage into company's processes and resources and can find opportunities for value creation. Responsive mechanisms are also enabled through digitalization capabilities. They are related to company's capabilities to respond for changes in demands of the customers.

Lenka et al. (2017) uses the value co-creation model made by Grönroos and Voima (2013) which consist of three separate spheres (figure 1). Individual spheres are provider sphere and customer sphere. Third sphere is a joint sphere, where he locates value co-creation mechanisms. Enablers for successful value co-creation are intelligence capability, connect capability and analytic capability. These digitalization capabilities enable interaction and value co-creation between different actors.

When value propositions face digital transformation, they become a part of more wide range of similar propositions, and they are expected to meet the same quality standards. Customers are also expecting to have multichannel non-stop information whenever they feel and need it. Providers have iterative sense-making practices, like proactive experimentation, customer behavior analytics, customer participation facilitation, collecting continuous feedback and promoting digital offering adaptation. They want to develop practices which benefit all parties and enable creation of innovating new value propositions. Creating proactively experimentations and testing them provide valuable information about customer opinions and that way enhance the general understanding of the values which are important for customers. Customer behavior analysis deepens that information. (Piepponen et al., 2022).

Companies may promote digital offering adaptation, which are activities for helping customers to adopt and utilize digital value propositions. They can also facilitate customer participation with activities like multichannel feedback possibilities and enabling customer content creation and utilizing customer ideas in product creation. (Piepponen et al., 2022). Harmeling et al. (2017) suggests four different tools for customer engagement; amplification tools which enable customers to retweet, reblog and share in their own networks, feedback tools such as comment boxes, likes, rating and polls for enabling customer reactions and expressing their knowledge of the product or empathy for other customers and creative tools such as upload links, tools for designing and virtual labs and connective tools such as tagging, following, messaging, forums and online virtual communities, which customers may use for connecting to other actors. (Harmeling et al., 2017).

Piepponen et al. (2022) have researched extent literature about how digital transformation impacts to value propositions and noticed that despite of the common insight that digital technology has impacts to value and value propositions, this issue has not been studied as much as processes, activities or mechanisms related to that would have been given from the point of the customer or the supplier and how these activities influence in value creation. Their research also identified the key drivers which facilitate the digital transformation of value propositions, practices for provider and its customers and implications of this process.

Interactive system environments enable different actors to be in interaction to each other. They consist of physical and digitalized things such as numbers, text, pictures, audio and video and allow multi-level heterogeneous relations among the components (artifacts, persons, processes, interfaces). As the physical and digital world are converged in mixed reality, these interactive digital platforms offer new possibilities to create value interactionally. Non-human actors and human persons through digitalized interfaces are more often implicated to value co-creation in these actor networks which create as value-in-interactional. (Ramaswamy & Ozcan, 2018).

2.5   Consumer information systems (CIS)

As economy changed towards service- and consumer-oriented and started to take consumer behavior and motivation more into account, the need for a new approach for developing digitalized services for consumers arose. Consumer information systems (CIS) framework is filling this need. The framework consists of six important elements in CIS development divided to system value propositions and customer value drivers. IS systems should be designed and developed for consumers and needs may be quite different than organizational user's needs. From the consumer perspective, efficiency and effectiveness are giving way to utilitarian and hedonic values and motivations for system use. CIS systems enable value co-creation and integration of system value propositions and customer value drivers using information technology enabled processes. (Tuunanen et al., 2010).

From the point of customer value, CIS development and use has different aspects. When consumers are involved in service process experience, one of the challenges is to find the correct ways and time to do that. Another challenge is to respect customer participation in service and production. Third challenge is related to customer goals and outcomes, their matching to each other and measurement of those. However, customer participation in service production, service process experience and customer goals and outcomes associated with system use are important customer value drivers towards the development process. (Tuunanen et al., 2010). When designing service systems, they should not be designed according to system type, but instead according to these users' value drivers (Tuunanen et al., 2019).

Consumer behavior is influencing to the process of understanding customer needs. When considering consumers, context of use (cultural, situational) affects more to the use of information systems than with organizational users. Customers are active and social actors in their own networks and interacting with other users. They also want to create and alter their identities in real and virtual life and they want systems to enable and give support for to do that. Social nature of use, construction of identities and the context of use are system value propositions (Tuunanen et al., 2010). These are illustrated in the following (figure 4).

There are clear differences in value types between B2B and consumer service systems so that B2B is more often utilitarian value driven and consumer systems more often hedonic value driven, but both might also be hybrid value driven. These results implies that when designing service systems, they should not be designed according so system types, but according to prioritized system features which imply the value structures of the users and enable value co-creation (Tuunanen et al., 2019).
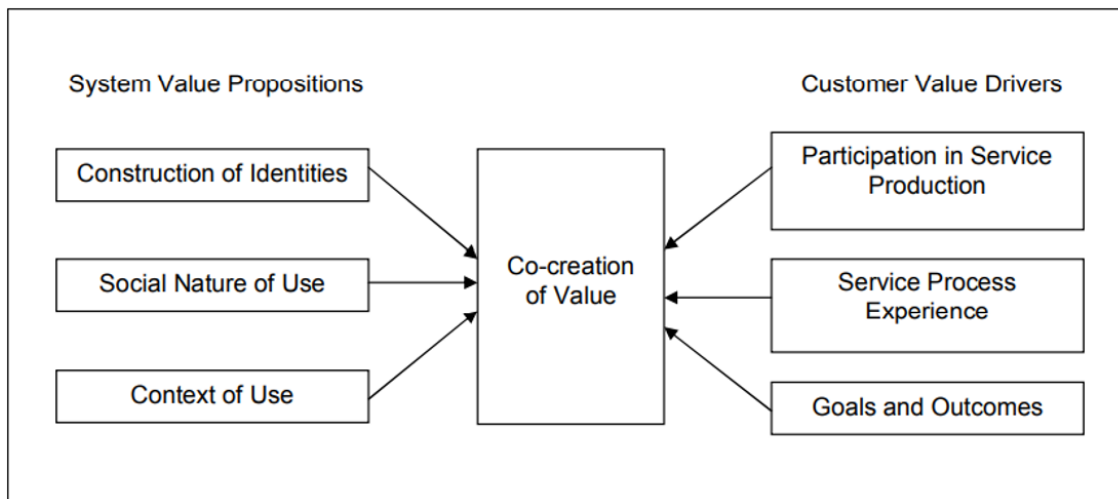

FIGURE 4 Framework for value co-creation in consumer information systems (Tuunanen et al., 2010).

2.6 AR-gaming and value co-creation

Augmented reality (AR) is a real time combination of 3D virtual objects and 3D real environment (Azuma, 1997). AR-enabled services are different than other digital enabled services, because they connect virtual world to the physical world (Lintula et al., 2018).

One of the most important factors in gaming experience is good interaction, which makes demands to create appropriate possibilities for the users to interact with virtual content and each other using different ways (Koh et al., 2010). Most people use online games for three basic reasons. First, they want to play for free. Second, the game should be location-based which means that the game is progressing depending on the location of the player. Finally, the experience of

playing AR-game is important. Positive impacts for the gaming are brought from values such as enjoyment, fantasy, escapism, social interaction, social presence, achievement impacts and self-presentation impacts. (Bueno et al., 2020).

Kokko et al. (2018) investigated value co-creation and value co-destruction in online video games. Communication between friends include encouraging and empowering by giving positive feedback, but also verbal abuse, which is un-wanted negative feedback. Players felt positively making even global relations between other players, but at the same time competition between players may cause bad spirit. Performing on teams inspired players, but also caused too much pressure. Gaming is fun, but as results show, it can also cause negative feelings as also Lintula et al. (2018) found out while researching AR mobile game Poké-mon GO. Playing enables value co-creation but causes also negative effects and value co-destruction.

3 RESEARCH METHODOLOGY

This chapter presents study context, research approach and data collection, coding and analyzing.

3.1 Study context

One of the most famous AR-game is Pokémon GO. When it was launched in 2016, it reached more than seven million of downloads in only one week. This game serves as the context of this study. This location-based augmented reality (AR) mobile game allows users to capture, battle and train virtual Pokémon creatures in the world appearing in phone's screen. The world in the game is a combination of real and virtual world by utilizing GPS, camera and position sensors of the phone. (Martins et al., 2017).

Player's avatar is walking on the virtual map while player is walking in the real world. This virtual environment includes elements from the surrounding such as streets, lakes, parks, monuments and buildings. Some of these elements are nominated as PokéStops or Gyms, and by virtually spinning those, players can collect Poké Balls, revives, potions, berries, eggs or gifts. These items are used to help catching Pokémons, healing them after battles or hatching new Pokémons. The game is free to play, but has in-game shop, where player can buy different items by using in-game earned money or real money. (Wang, 2021). In the shop there are also free items available such as avatar clothes or accessories or free items or alternative things which can be bought only by using real money such as special event tickets (Niantic, Icl., 2022).

One goal in the game is to complete the Pokémon dictionary, as also called Pokédex and attain the highest level of the game. Game is also offering different events, like community days, ability to make in-game friends, sending gifts to other players, trading Pokémons and having a selected Pokémon as a buddy. Game offers also battling and GO Battle League, which is a global matching system where Trainers may battle against each other over the world, earn rewards and improve global ranking. Gyms are similar virtual real-life elements as Poké-Stops, but with extra functionalities. There players may battle against other teams and win it for their own team. Holding the Gym produces also in-game money for the Trainer. This money can be used for buying in-game virtual coins, so called PokéCoins, or necessary items except event tickets, which can also be bought by real money. Gyms also offer different level raid battles, where players in collaborate fight against raid boss in purpose to catch it. (Niantic, Icl., 2022).

Many studies show that the game has motivated people to physically be more active and spend time outside and socializing. It has positive effects to players' mental health and reduced psychological distress and improved cognitive performance (Wang, 2021). It has even helped socially isolated people to go out

from their rooms and communicating with other people (Kato et al., 2017; Tateno et al., 2016).

(Lintula et al., 2018) have conceptualized Pokémon GO as

> a service provider aiming to establish connections and relationships with potential players for value co-creation by offering players value propositions over the AR game platform.

Players can globally co-create value by accepting offered value propositions and integrating their own resources such as knowledge, time or money with the service provider's resources. Potential outcomes from this integration process may be values like fun, physical wellbeing or social unity (Lintula et al., 2018). Elo et al. (2021) have identified eight key values in AR-gaming which support user values. The personal values of pleasure and a healthy life, the moral value of sociality, the social value of a sense of belonging, the competency values of ambition and activity are key user values in value co-creation. For value co-destruction, key values are the moral value of responsibility and sociality and the social value of social recognition.

The study of Wang (2021) shows that motivation and motives of playing Pokémon GO comes from having fun immersive experience, getting physical exercise, social reasons and nostalgia related to Pokémon universe. In turn, technological challenges, slow progress because not willing to put more effort for gaming, lack of variation and too narrow content in the game were the most important reasons to stop playing.

Kari et al. (2017) investigated what types of behavior changes Pokémon GO has promoted or inducted among players. By playing players may try to get rid of being bored or passive. Often playing is enhancing the daily routines of the players such as going to work, buying groceries, or travelling, but it is affecting also non-humans' routines such as the dog of the family, which gets more time outside while the owner becomes physically more active. Gaming also explores the players surroundings by inspiring to visit new places, adds physical and overall activity in life, strengthen social bonds enabling people to spend time with people important to them. It also lowers social barriers and helps in getting to know new people, increase positive emotional expression more spontaneously, intensively, or openly. In addition, it works as self-treatment for helping people to reach their personal wellbeing goals.

Around the Pokémon GO game, there are different crowdsourcing apps which allow users to collaborate with each other and share information (Martins et al., 2017). Sharma et al. (2021) explored players crowdsourcing engagement and findings showed that strong motivations for crowdsourcing is intrinsic values such as comprising enjoyment and intellectual simulation in crowdsourcing communities where players may solve challenging issues of the game. Other important drivers for crowdsourcing engagement are such extrinsic motivation issues as rewards, fame and networking.

Pokémon GO offers interesting opportunities to explore value and value creation among AR gaming. It offers plenty of ways to advance in the game and

perform numerous different tasks by offering different type of value propositions. This study provides information on most desirable game features and different type of value propositions they represent.

3.2   Research approach

The purpose of this study is to gather understanding of the most desirable game features in the AR mobile game Pokémon GO and the types of value propositions they represent. Qualitative approach and laddering technique offer good opportunities for gathering such information.

By interviewing, the researcher is collecting data about thoughts, understandings, and feelings of an interviewee. The interest is in interviewee's experiences and motivation about the pre-defined subject of the interview. (Hirsjarvi & Hurme, 2000). The laddering theory is based on a means- end theory, which consists of product attributes, consequences, and personal values. The history of this technique comes from the personal construct theory (PCT) which was used to organize personal constructs such as how we see the world through our own personality and how we arrange different personal constructs. The laddering technique is often used as tool in marketing and advertising domain. (Breakwell, 2008), because it gives in-depth information of consumers' personal values, their behavior and relationships to products or services. It is often used for finding linkages between different attributes, consequences, and values. It gathers underlying thoughts by challenging the interviewee to think why something is important for her, so there are no wrong or right answers. (Reynolds & Gutman, 2001).

Product attributes are objective, concrete, physical or observable properties or characteries of the product or the service and the first potential focal points. Consequences can be thought as more abstract subjective reinforced benefits, and often resulting from an attribute as a potential second focal point. Personal values, so called end-benefits are the third potential focal point. They are either derived from a benefit but may also exist as an independent emotional association. They are totally abstract and represent users' emotions, needs, goals and beliefs (Breakwell, 2008; Rossiter & Percy, 2001).

3.3   Data collection

The data collecting was performed between September and October 2022. The purpose was to figure out the most desirable game features in Pokémon GO and what type of value propositions they represent. One purpose was also to gather in-dept information of users' reasoning for selected features.

In total, 14 interviews were done. Interviewees were participated from different Pokémon GO-groups and communities in Finland. Six interviews were done face-to-face and eight interviews on a phone call.

Interviews started with a short introduction of the research project and the purpose of the interview. Next, interviewee was asked to open Pokémon GO app, if needed, as a helping tool to remember the features of the game. After that, interviewee was asked and list the attributes and features they use or like the most. Interviewees were also asked to list the attributes and features they use or like the least. After that he or she was asked to present reasons why mentioned features were or were not important. Interviews were not recorded, instead data was collected during each interview to Excel. Interviews lasted from 15 to 90 minutes.

The interviewees, both male and female, were all from different cities in Finland. The effects of place of residence were not examined in this study. Interviewees were between age 7 and 70. All interviews for children under 18 years were conducted in the presence of their parents. The demographic information of the interview participants is presented in the following table (table 3).

TABLE 3 The demographic information of the interview

	n	%
Gender		
Female	8	57 %
Male	6	43 %
Age group		
7-16	3	21 %
17-26	1	7 %
27-36	0	0 %
37-46	7	50 %
47-76	2	14 %
57-76	1	7 %
Occupation		
Student	4	29 %
Employee, entrepreneur	8	57 %
Retired	1	7 %
Other	1	7 %

Gaming levels of the participants were between 33 and 50 (maximum level) and gaming history of the participants was between one to more than five years. Most of the interviewees play daily or weekly and most popular gaming companion is family including own parents, grandparents, children and spouses. Friends in community are also important gaming companion, but players play also alone.

Interviewees were allowed to list multiple gaming companions and the answers tell that gaming sometimes takes place either alone or together, depending on gaming situation. Gaming history, activity and gaming companion is presented in the following table (table 4).

TABLE 4 The gaming activity, level and game companions

	n	%
Gaming history (years)		
1 or less	0	0 %
1-3	1	7 %
4-5	4	29 %
5 or more	9	64 %
Game level		
33	1	7 %
35	1	7 %
38	2	14 %
39	1	7 %
40	1	7 %
41	1	7 %
44	1	7 %
47	3	21 %
49	1	7 %
50	2	14 %
Gaming activity		
Daily	8	57 %
Weekly	4	29 %
Randomly	2	14 %
Game companions (multiple choices)		
Friends	5	36 %
Family	11	79 %
Alone	6	43 %

Most of the participants told they use real money for gaming. The most of the used amount per month was under 10 euros, but larger amounts were also used. Remote raid passes, event tickets and incubators were the most popular things money was spent on. Although game offers free remote raid passes and incubators, most of the players use real money for buying those to improve and optimize their game. Real money can also be used to buy in-game money, PokéCoins, which can be used for buying in-game things, such as mentioned raid passes or

incubators or other items, but not event tickets. Those can only be bought by using real money. Next table (table 5) illustrates the use of the money.

TABLE 5 The use of real money

	n	%
Use of real money		
No	2	14 %
Yes	12	86 %
Amount of real money used		
No money used	2	14 %
Less than 10 € per month	10	71 %
10 -20 € per month	1	7 %
More than 20 € per month	1	7 %
Money used for (multiple choices)		
Event tickets	6	50 %
Incubators	6	50 %
Remote raid passes	7	58 %
PokéCoins	1	8 %

3.4 Coding and Data Analysis

After the data was collected, it was first sorted according to some attribute or feature. Names of the features were harmonized. Some of the data was decided not to be included such as playing using multiple accounts et cetera, which are interesting in themselves, but are not relevant to this study. Interviews collected data about less used features as well, but because this study focuses on most desirable game features, that information is not analyzed either.

Included attributes represent either concrete feature of the game, but also other properties that the game enables. Each mentioned attribute was processed, and value constraints and personal values were clarified from each. Value constraints were derived from the answers where the interviewees reasoned mentioned features, but also utilizing final personal values. Naming of value constraints and values were standardized. If it turned out that one given attribute was associated with different consequences or one consequence was associated with different values, this attribute was separated into several ladders, so that each chain was treated as a separate case.

4   FINDINGS

This chapter presents the findings of this study. It consists of three sections, where first one presents attributes and features mentioned by participants as the most desirable game features. The second section presents value consequences and values. The third one presents the types of value proposition they represent.

4.1   Attributes and features

Interviewees were asked to list features in Pokémon GO they most likely use or like. This information was deepened by asking them to justify why mentioned feature was important to them. Laddering technique is used to seek more in-depth information about consequences and personal values with the intention to understand (Reynolds & Gutman, 2001).

   After analyzing the ladders, the most desirable features in Pokémon GO were clear and they are presented in the following table (table 6).

TABLE 6 Attributes and features mentioned by participants to be most desirable in Poké-mon GO

	n	%
Feature		
Collecting Pokémons	31	11,9 %
Raids	25	9,6 %
Events	24	9,2 %
Tasks	18	6,9 %
Out-game groups and social media	17	6,5 %
Different styles of gaming	13	5,0 %
Gifts	13	5,0 %
Collecting kilometers	9	3,5 %
Community	9	3,5 %
Goldening Gyms	9	3,5 %
Friends	9	3,5 %
In-game shop	8	3,1 %
PokéStops and Gyms	8	3,1 %
Being expert	7	2,7 %
Changing Pokémons	7	2,7 %
Collecting XP	7	2,7 %
Friendship levels	6	2,3 %
Game characteristics	6	2,3 %
Out-game sociability	6	2,3 %
GO battle league (GBL)	5	1,9 %
Suggesting new PokéStops	4	1,5 %
Alternative to everyday life	4	1,5 %
Team GO Rocket Balloons	3	1,2 %
Going out	3	1,2 %

Competition	2	0,8 %
Avatar	2	0,8 %
Hatching eggs	1	0,4 %
In-game postcards	1	0,4 %
Leaderboards	1	0,4 %
Medals	1	0,4 %
Team GO Rocket Leader	1	0,4 %
Total	260	

4.2 Value consequences and personal values

Means-end theory gives information about underlying hierarchies between attributes, consequences and values. Value consequences are provided by attributes ("the means") and values ("the ends") are reinforced by consequences (Reynolds & Gutman, 2001).

This study identified 20 different type of value consequences (table 7) and 22 different types of values (table 8), which are next illustrated.

TABLE 7 Value consequences mentioned by participants

	n	%
Value consequences		
Goal orientation	57	21,9 %
Own benefits	47	18,1 %
Sociability	29	11,2 %
Activity and outdoor	22	8,5 %
Entertainment	18	6,9 %
New motivation	13	5,0 %
Community spirit	10	3,8 %
Competitive spirit	10	3,8 %
Knowledge sharing	10	3,8 %
Connecting to other players	9	3,5 %
Spending time	7	2,7 %
Individuality	5	1,9 %
Helping others	5	1,9 %
Own time	4	1,5 %
Easy to participate	3	1,2 %
Improvements	3	1,2 %
Game ethics	3	1,2 %
Self-expression	2	0,8 %
Free or low cost	2	0,8 %
Social recognition	1	0,4 %
Total	260	

TABLE 8 Personal values of participants

	n	%
Personal values		
Satisfaction	95	36,5 %
Enjoyment	25	9,6 %
Entertainment	20	7,7 %
Sociality	19	7,3 %
Excitement	14	5,4 %
Spending time with others	14	5,4 %
Facilitating or maximizing own or other's gaming	10	3,8 %
Helping others	10	3,8 %
Making new friends	10	3,8 %
Increasing physical activity	7	2,7 %
Own well-being	5	1,9 %
Saving money	5	1,9 %
Getting help	5	1,9 %
Other people's attention	4	1,5 %
Togetherness	4	1,5 %
Competition	3	1,2 %
Relaxation		
Independence	3	1,2 %
Other benefit	2	0,8 %
Easiness to play	1	0,4 %
Loyalty	1	0,4 %
Encouragement	1	0,4 %
Total	260	

4.2.1 Goal orientation

Pokémon GO gives a lot of different possibilities to play goal-oriented way and this intrigues many players. Players may set own goals and then pursue these, some even very intensive and maximizing game experience using special equipment. Gotcha helps to spin PokéStops or collect Pokémons while driving a car, gloves enable gaming in cold weather and power banks and new mobile phones enable better game experience.

Goals may be set based on game features such as collecting specific type of or all published Pokémons, willing to be loyal to co-players, performing different tasks, joining events, collecting medals or kilometers, maximizing level ups or optimizing gaming experience by other ways. Goals may be personal such as just going out or acting according to own pursuit of perfection. Common thing is that

whatever is done, is done goal-oriented and this goal orientation is strongly linked to enjoyment, increasing physical activity, loyalty and satisfaction.

4.2.2 Own benefits

Game serves features which enable a possibility of getting to benefit. Own benefits are related to rewards, which may be in-game items, rare Pokémons or progress in the game. Benefits are also related to using real money in the game for making gaming experience better, fastening own progression or saving money by using possibility to buy cheaper event tickets to other players. Benefits are also related to the feeling that by doing or knowing something, either the gamer or community is benefiting.

Benefits are linked to facilitating or maximizing own or others' gaming. They can also help others or allow free or low-cost gaming. They have positive effect for feeling satisfaction and may give social recognition and are usually linked to sociality.

4.2.3 Sociability

Most players like the social aspect of the game. Regardless of age, players like to play together, meet new people, help each other play, and play with people all around the world. Game helps in getting to know new people in a new place and making friends for example in a new school. Years of playing together have created great memories to people and created long-lasting friendships. Social media (Facebook) and instant messaging apps like WhatsApp or Telegram are widely used in creating and maintaining sociability, by remote or physical presence. It was mentioned that after Covid-19 pandemic, this sociability has decreased. Some of the players miss such a sociability it was before pandemic. Sociability is linked to enjoyment, helping others, independence, making new friends, sociality, and spending time with each other.

4.2.4 Activity and outdoor

Pokémon GO has features that encourage people to go outside and walk. By walking and collecting kilometers it is possible to perform tasks and get some exercise at the same time. During pandemic game created a rhythm for the day for some of the players. The nature of the game enables outdoor activities with friends or family despite the weather and makes you go to interesting new places such as nature trails or forests you wouldn't otherwise go.

Activity and outdoor activities are related to for example following engagements: enjoyment, entertainment, excitement, increasing physical activity, own well-being, satisfaction, sociality, spending time and to other benefits which in this case mean abilities such as training a dog at the same while playing.

4.2.5 Entertainment

Pokémon GO produces a lot of entertainment for the players. The game is not violent, but rather benevolent and friendly. It also contains nice elements and beautiful color scheme, which make Pokémon GO pleasant to use. Some of the users told they just play for entertainment and utilize only game features that they themselves like or collect only some nice-looking Pokémons or in-game postcards. Some saw playing Pokémon GO as similar hobby as any other hobby is. However, game is giving a lot of different opportunities to use it for entertainment, which is linked to easiness to play, enjoyment, entertainment, excitement and satisfaction.

4.2.6 New motivation

New and challenging features, tasks and events are giving new motivation and variation for playing. If player has already reached the maximum 50 level, these especially give new motivation for playing. In general, the idea of being able to complete something works as a motivator. New Pokémons, events and other updates are regularly coming to the game and make players wait for new updates and new challenges. New motivation is linked to competition, entertainment and satisfaction.

4.2.7 Community spirit

Community spirit has similar elements as sociability, but it concentrates more to see things through common hobby and community. Players may be completing the same task regardless of where they physically are. After achieving some world-wide goal, players feel happiness that they made it as a community.

Local communities are also important for arranging game-related meetings. In different messaging channels, players share information about raids and are looking for other participants to join in them or inform they have for example rare Pokémons for trading. One fascinating thought was that you never know what will happen when you go out for a walk. There might be raids where to join or you may meet old friends or create new ones. As an example of this, one interviewee said that a Pokémon player always recognizer another Pokémon player. Community brings people together. This community spirit links to enjoyment, excitement, social recognition, sociality, and togetherness.

4.2.8 Competitive spirit

Although Pokémon GO is not a game where the main idea is to compete against other gamers and win them, the game creates opportunities to do so. People may compete inside families or communities or set individual competitive goals. Some compete to see who can reach new levels the fastest, collects special Pokémons the most or produce tasks the fastest and some see raids and or other battles as competitive challenges.

Outside the game there are also special leaderboards, where players can report their own achievements. This also creates competitive spirit to the game for gamers who like that aspect of the game. Competitive spirit is linked to competition, enjoyment, helping others, satisfaction, and social recognition.

4.2.9 Knowledge sharing

Some players are some sort of Pokémon encyclopedias and they clearly like it. Often these experts want to share knowledge to other players, who, in turn, are happy to receive information they might need. The game itself does not have platform for sharing knowledge, so out-game apps and social media are actively used for this. Knowledge sharing is linked to encouragement, enjoyment, getting help and helping other.

4.2.10 Connecting to other players

As already discussed in previous chapters about the importance of out-game groups, they are important for enabling connections between players either locally or globally all over the world. Different neighborhood WhatsApp-groups or worldwide social media groups have important role spreading information about playing and for example enabling raid invitations for regional raids. They also help in making new friends, either in-game or outside in. Connection to other players is linked to excitement, facilitating or maximizing own or other's gaming, making new friends and sociality.

4.2.11 Spending time

Pokémon GO is often used for just spending time when there is nothing else to do. It gives alternatives for everyday life and at the time of pandemic, it gave something to do during lockdowns. Spending time is linked to entertainment and increasing physical activity.

4.2.12 Individuality

Different gaming styles make the game interesting and fascinating for some of the players. They appreciate the possibility to play by individual way and spend time either alone or together with friends or family to research different ways to play. It the study came up the fact that how the game teaches tolerance for children towards different individual playing styles and thereby teaches general tolerance. Individuality is linked to excitement, spending time with others and other benefits, which in this came means tolerance.

4.2.13 Helping others

Players in general like to help other players, especially when they have already completed some mission or something themselves. Sometimes players may join to raids in purpose to help others, so that others have better possibility to win and collect possibly new Pokémon. They might also let other players open gifts first for maximizing their level-ups and progression that way in the game. Some also buy event tickets for other players who might not have the opportunity to buy it themselves at that moment and that way they are helping other players in gaming. Sometimes help is given to others for also maximizing your own gaming. Helping others is linked to enjoyment, facilitating, or maximizing own or other's gaming, helping others and sociality.

4.2.14 Own time

For some players Pokémon GO serves as an escape from normal life and gives something else to think about. Own time is important and playing gives easy way to have it. Having own time is linked to relaxation and enjoyment. Many also find it relaxing to detach themselves from every days tasks for a moment.

4.2.15 Easy to participate

Possibility to play the game from any location and joining for remote raids at any time of the day keep Pokémon GO easy to participate. Gaming companion is not necessarily needed but can be easily found for remote raids via different apps or social media groups. Easiness to participate is linked to satisfaction and togetherness.

4.2.16 Improvements

Players have possibility to propose new PokéStops to the gaming map. Some feel this proposition as interesting, because it means looking for new places to suggest and interesting new places to visit. Improvements is linked to facilitating or maximizing own or other's gaming results and helping other players.

4.2.17 Game ethics

Game includes a punch of unwritten rules and some, mostly new players, might not know them forehand. For example, own Pokémon must be left for Gym for 8 hours and 20 minutes to be able to earn maximum coins for one day. When this 'rule' is not followed and other team kicks then out too early, some players feel it important to instruct others in the matter. Game ethics is linked to facilitating or maximizing own or other's gaming and helping others.

4.2.18 Self-expression

Player's avatar is also a way to do self-expression. Player can change clothes and accessories and make avatar to look nice. Players can also choose different kind of poses for the avatar. Self-expression is linked to enjoyment and excitement.

4.2.19 Free or low cost

Pokémon GO can be played without spending your own money and one interviewee mentioned that if the game would be paid, he possibly would not be playing. Although some features are not free of charge, but they are affordable, the threshold to participate is low. Free or low cost is linked to saving money and lowers the threshold to play.

4.2.20 Social recognition

Some younger players think that it is cool to have expensive ticket when others might not have it and they seem to think that way to increase their social recognition. Social recognition is linked to other people's attention.

Value constraints and personal values lined to attributes are summarized in next table (table 9).

TABLE 9 Value constraints and personal values lined to attributes and features

Attributes and features	Value constraints and personal values
Collecting Pokémons (31)	• Goal orientation (22) ○ Satisfaction (19) ○ Enjoyment (2) ○ Independence (1) • Activity and outdoor (3) ○ Entertainment (1) ○ Excitement (1) ○ Other benefits (1) • Own benefits (2) ○ Satisfaction (2) • Entertainment (2) ○ Enjoyment (1) ○ Entertainment (1) • Spending time (2) ○ Entertainment (2)
Raids (25)	• Sociability (6) ○ Making new friends (2) ○ Spending time with others (2) ○ Helping others (1) ○ Sociality (1) • Entertainment (5) ○ Entertainment (3) ○ Enjoyment (2)

	- Own benefits (4) - Facilitating or maximizing own or others' gaming (3) - Easy to participate (3) - Togetherness (2) - Satisfaction (1) - Competitive spirit (2) - Enjoyment (1) - Helping others (1) - Helping others (2) - Enjoyment (1) - Helping others (1) - Spending time (1) - Entertainment (1) - Community spirit (1) - Togetherness (1) - Goal orientation (1) - Satisfaction (1)
Events (24)	- Own benefits (5) - Satisfaction (4) - Other people's attention (1) - Sociability (4) - Spending time with others (4) - Community spirit (2) - Sociality (1) - Togetherness (1) - Goal orientation (2) - Satisfaction (2) - New motivation (5) - Entertainment (3) - Satisfaction (2) - Spending time (2) - Entertainment (1) - Increasing physical activity (1) - Competitive spirit (1) - Satisfaction (1) - Entertainment (1) - Enjoyment (1) - Social recognition (1) - Other people's attention (1) - Activity and outdoor (1) - Own well-being (1)
Tasks (18)	- Own benefits (6) - Satisfaction (1) - Goal orientation (5) - Satisfaction (4) - Increasing physical activity (1) - New motivation (3) - Entertainment (4) - Satisfaction (1) - Competitive spirit (2) - Satisfaction (1)

	o Competition (1)
Out-game groups and social media (17)	• Connecting to other players (9) o Sociality (5) o Excitement (1) o Facilitating or maximizing own or others' gaming (2) • Knowledge sharing (6) o Getting help (4) o Helping others (1) o Encouragement (1) • Sociability (1) o Sociality (1) • Game ethics (1) o Facilitating or maximizing own or others' gaming (1)
Different styles of gaming (13)	• Goal orientation (7) o Satisfaction (7) • Individuality (5) o Excitement (3) o Spending time with other (1) o Other benefit (1) • Entertainment (1) o Excitement (1)
Gifts (13)	• Own benefits (7) o Satisfaction (5) o Saving money (1) o Sociality (1) • Goal orientation (3) o Enjoyment (1) o Satisfaction (1) o Loyalty (1) • Sociability (1) o Sociality (1) • Activity and outdoor (1) o Satisfaction (1) • Entertainment (1) o Enjoyment (1)
Collecting kilometers (9)	• Activity and outdoor (5) o Increasing physical activity (3) o Own well-being (2) • Own time (2) o Relaxation (2) • Goal orientation (1) o Satisfaction (1) • New motivation (1) o Satisfaction (1)
Community (9)	• Community spirit (7) o Sociality (3) o Enjoyment (2)

	- o Excitement (1) - o Other people's attention (1) - Knowledge sharing (1) - o Getting help (1) - Own benefits (1) - o Satisfaction (1)
Goldening Gyms (9)	- Activity and outdoor (4) - o Excitement (2) - o Enjoyment (1) - o Increasing physical activity (1) - Competitive spirit (1) - o Other people's attention (1) - Entertainment (1) - o Excitement (1) - Goal orientation (1) - o Satisfaction (1) - New motivation (1) - o Competition (1) - Sociability (1) - o Independence (1)
Friends (9)	- Sociability (6) - o Making new friends (3) - o Spending time with others (1) - o Enjoyment (1) - o Sociality (1) - Activity and outdoor (1) - o Spending time with others (1) - Helping others (1) - o Facilitating or maximizing own or others' gaming (1) - Knowledge sharing (1) - o Helping others (1)
In-game shop (8)	- Own benefits (6) - o Satisfaction (4) - o Saving money (1) - o Helping others (1) - Free or low cost (1) - o Saving money (1) - Helping others (1) - o Enjoyment (1)
PokéStops and Gyms (8)	- Own benefits (5) - o Satisfaction (4) - o Saving money (1) - Activity and outdoor (2) - o Activity and outdoors (1) - o Sociality (1) - Entertainment (1) - o Satisfaction (1)

Being expert (7)	- Game ethics (2) ○ Facilitating or maximizing own or others' gaming (1) ○ Helping others (1) - Knowledge sharing (2) ○ Helping others (1) ○ Enjoyment (1) - Sociability (1) ○ Making new friends (1) - Own benefits (1) ○ Excitement (1) - Helping others (1) ○ Sociality (1)
Changing Pokémons (7)	- Goal orientation (3) ○ Satisfaction (3) - Sociability (3) ○ Sociality (2) ○ Helping others (1) - Own benefits (1) ○ Satisfaction (1)
Collecting XP (7)	- Goal orientation (5) ○ Satisfaction (5) - Own benefits (2) ○ Facilitating or maximizing own or others' gaming (1) ○ Satisfaction (1)
Friendship levels (6)	- Goal orientation (5) ○ Satisfaction (5) - Own benefits (1) ○ Enjoyment (1)
Game characteristics (6)	- Entertainment (4) ○ Enjoyment (2) ○ Easy to play (1) ○ Entertainment (1) - Activity and outdoor (1) ○ Spending time with others (1) - Free or low cost (1) ○ Saving money (1)
Out-game sociability (6)	- Sociability (6) ○ Spending time with others (3) ○ Making new friends (2) ○ Sociality (1)
GO battle league (GBL) (5)	- Own benefits (2) ○ Satisfaction (2) - Competitive spirit (1) ○ Enjoyment (1) - Spending time (1) ○ Entertainment (1)

	• Entertainment (1) o Excitement (1)
Suggesting new PokéStops (4)	• Improvements (3) o Facilitating or maximizing own or others' gaming (2) • Helping others (1)
Alternative to everyday life (4)	• Own time (2) o Enjoyment (1) o Relaxation (1) • Spending time (1) o Entertainment (1) • Activity and outdoor (1) o Own well-being (1)
Team GO Rocket Balloons (3)	• Own benefits (3) o Satisfaction (2) o Enjoyment (1)
Going out (3)	• Activity and outdoor (3) o Increasing physical activity (1) o Spending time with others (1) o Excitement (1)
Competition (2)	• Competitive spirit (2) o Enjoyment (1) o Entertainment (1)
Avatar (2)	• Self-expression (2) o Enjoyment (1) o Entertainment (1)
Hatching eggs (1)	• Goal orientation (1) o Satisfaction (1)
In-game postcards (1)	• Entertainment (1) o Enjoyment (1)
Leaderboards (1)	• Competitive spirit (1) o Competition (1)
Medals (1)	• Goal orientation (1) o Satisfaction (1)
Team GO Rocket Leader (1)	• New motivation (1) o Satisfaction (1)

4.3   The types of value propositions

Rintamäki et al. (2007) have proposed four type of value proposition based on the understanding of the key dimensions of customer value. Understanding of value consequences and derived value helps to identify value proposition types. This study has identified different value consequences and values in Pokémon GO augmented reality (AR) mobile game from the point of most desirable game features.

Economic value propositions are based on saving money or effort, but also for helping players themselves or other better decision making or to better price/quality-ratio or changing of specialized competences or services (Rintamäki et al., 2007). Pokémon GO gives a lot of opportunities related to this. Players may share knowledge and help each other with the purpose of making playing simpler. They also may facilitate, optimize, and maximize their gaming experience by using different gaming styles. Game also serves opportunities for different benefits, either by saving money or getting greatest benefits with as little effort as possible.

Functional value propositions such as effective convenient solutions and user experiences motivate customers who want to minimize own physical and cognitive efforts and utilitarian-level sacrifices (Rintamäki et al., 2007). Game characteristics, whether they are related to the game's pleasant appearance or functionality, work well as functional value propositions. Functional value for the players is created from the extra equipment, easiness to play, gaming styles which are based on to the least amount of work, easiness to participate without leaving your home for joining or getting easily help without much effort. Gaming also usually causes increased physical activity, so daily movement and outdoor activities will be completed almost by accident and there is no need to separately worry about doing your daily outdoor activities.

Emotional value propositions motivate customers with experimental and hedonic expectations and motivations such as enjoyment, relaxation or adventure seeking. Different clues, either people or environment provided, enable valuable customer experiences. Additional services, right atmospheres and themes are used for encouraging customers to the use of service and enable emotional experiences. (Rintamäki et al., 2007). Most game features appeal to players emotionally by causing enjoyment, entertainment, excitement, sociality or togetherness. Game give experiences for players by enabling feeling of satisfaction of reached goals, feeling of enjoyment when spending time with friends and family or excitement when visiting new places or playing competitive. Outside game users may create new relationships and maintain communities and this creates enjoyment.

Symbolic value propositions motivate customers who appreciate the opportunity for self-expression (Rintamäki et al., 2007). Avatar can be used for self-expression, and as an expression of that, reached medals and maximum level reaching, as well as achieved rankings in leaderboards work as symbolic element.

The conceptual framework for consumer information systems development (Tuunanen et al. 2010) noticed customer value drivers and value propositions. As just described above, the social nature and context of use, construction of identities, participation in service production, service process experience and goals and outcomes find their place in this study as well. In Pokémon GO, players appreciate the sociality and are connected to other players by using social networking tools, although the game itself does now have given opportunities for it at the time of this research. Players like to play in individual ways and join for service creation for example by suggesting new PokéStops.

5   DISCUSSION

This chapter reflects the research question by using literature review and results of the study and answers for the research questions. It also discusses about implications to research and practice.

5.1   Research questions

The object of this study was to explore what are the most used game features in Pokémon GO AR mobile game and what type of value propositions they represent. Research questions were:

"What are the most desirable game features in Pokémon GO?"
"What type of value propositions they represent?"

The answer for first question includes the list of game features or opportunities it serves, but also understanding why they are popular. The answer to second question tells what type of value proposition it represents and is answered by utilizing (Rintamäki et al., 2007) classification of value propositions.

Results show that many of the mentioned features represent a combination of different value propositions. Exact results are reported in earlier chapters, but the most desirable game feature is based on the main purpose of the game, collecting Pokémons. It mainly represents emotional value proposition because it causes different feelings in players. The second most popular feature are the Pokémon raids, which are a combination of economic, functional, and emotional value propositions by creating emotions, being related to benefits, or giving and getting help for gaming. The third most popular features are events and tasks, which both represent a mix of economic and emotional value propositions. They are related to benefits and different feelings.

Fourth most desirable feature is not an in-game feature. It is related to groups outside of the game, but around the game and represents economic and emotional value propositions. Opportunities for connecting to other players, knowledge sharing, and game ethics represent these value propositions. Similar, out-game feature is possibility to play using different gaming styles which represents emotional and functional value propositions. Gifts, collecting kilometers, goldening Gyms, friendship levels, out-game sociability with a possibility to make new friends, Team GO Rocket Leader and GO Battle league, medals, leaderboards, in-game postcards, competition, and alternative to everyday life represent emotional values.

Community, friends, in-game shop, PokéStops and Gyms, changing Pokémons and going out represent all economic and emotional value proposition. Hatching eggs represents functional value propositions, avatar both symbolic and emotional value propositions, collecting XP economic, functional, and

emotional value propositions and suggesting new PokéStops economic value proposition.

Akaka et al. (2015) has earlier discussed how value is related to context and is influenced by environmental factors such as time, place, social norm, culture, and success to internal and external resources. Value-in-context is an extension of value-in-use by including elements from value-in-exchange.

In Pokémon GO, value propositions consist of many aspects. Game is offering hedonic and personalized experiences which happen in use, but also value-in-exchange opportunities. Value co-creation happens at many levels. Players may play individually, but at the same time they may interact with other players. They set individual goals, but at the same time they help other plyers or the whole community. Players may create individual gaming styles, but at the same time they are able to work towards a common goal. Resources such as skills, knowledge and experience are shared and used to help other, but also the player oneself. Benefits are mutual.

5.2   Implications to research

Implications to research are presented in this chapter. Goal is to discuss about how the results of the research and the literature review are related to each other.

Literature review discusses about value, value co-creation and value propositions. World has changed during decades and value is understood differently as in late decades of the twentieth century. Digitalization is an essential part of people's lives and emerging technologies enable new possibilities for different digital services such as augmented reality (AR) gaming. Digital services enable new ways to collaborate and being in interaction to other actors (Schwab, 2017). Service-dominant logic has renewed the thinking of value and value creation in direction that value is created in co-operation between different actors and is experienced in-use (Vargo & Lusch, 2004a, 2016).

This study does not dispute the fact that value is an individual experience. It is often created with the help or assistance of other actors, but it gives new information that social media and out-game groups have such a huge importance in value creation. It also provides new perspective by noticing small things related to value creation, such as the importance of possibilities to share knowledge, help others, teach tolerance for children, being able to facilitate or maximizing own or others' gaming, loyalty and teaching game ethics to others.

5.3   Implications to practice

This chapter discusses about the implications to practice. Goal is to provide information that can be used in practice.

Pokémon GO mobile game is a mix of different features and possibilities and consists of different type of value propositions. Different players can utilize the game features they wish and as they wish. This gives possibilities to create unique value, which is an important aspect in value co-creation. While creating digital services, whether it is a game or other service, it is important to remember for whom it is being done for and why, but also to keep in mind that can we seriously answer the last question. As times have changed from goods-oriented to service-oriented world, service design must be done considering these aspects. Value cannot be thought and embedded as in early times with goods. It must be understood that there are different types of users which successful application takes into account and provide value propositions which can be utilized in many different ways.

6   CONCLUSIONS

This chapter summarizes the study. It also discusses about the limitations of the study and give implications for future research.

6.1   Summary of the study

The main objective of this study was to examine value co-creation and value propositions in augmented reality (AR) mobile game. Research questions were set to seek answers to most desirable game features and value propositions they represent.

For gaining knowledge about the subject, literature review was conducted. Most of the literature was related to value co-creation and service dominant-logic, but also included literature about general development of society through industrial revolutions to give perspective for how the concept of value has changed over time.

The target for empirical research was clear right from the beginning, Pokémon GO. Data collection was conducted by using theme interview with a twist of laddering method for 14 Pokémon GO players. Main goal was to be able to mention most desirable features, but also to find out in-depth understanding of the reasons to be able to deduce the value proposition types they represent. Total of 31 features were mentioned in the interviews and 20 value consequences and 22 personal values were identified.

Most desirable features and the types of value propositions they represent were identified, although larger dataset would have given more certainty about the significance of the findings. The study showed that users create value very differently from each other by using the same service in creative ways. Giving the opportunity for this by utilizing different type of value propositions and enabling users to be able to co-create value, we create a service that is pleasant to use and more importantly, the users continue to use it.

Each era brings its own innovations and ways to live. Just as the people of the past wanted to own things and created happiness from owning, the people of today are thirsty for experiences. After mandatory living expenses, as one object, money is spent for digital services such as gaming. Cyber-physical systems connect people and environments, and unique value experiences are searched for there. Virtual environments, digital communities and avatars that describe a person are happening today, but at the same, people crave physical contact and doing things together with other people. In addition to the virtual world, physical nature is valued.

Pokémon GO is serving different type of value-propositions which players may take advantage of depending on their own context and needs. It serves different perspectives for value co-creation, but also for individual and unique value

creation. Although the game is played in each person's individual mobile device and towards individual goals, it has social aspect with common goals and communities, which this study proved important. Because of that, this study summarizes that Pokémon GO offers socio-hedonistic value propositions.

6.2 Limitations of the study

Objectives of the study were met, but there are also limitations to be recognized. The number of participants was only 14 and it could have been higher. With larger data, it would have been possible to analyze the effect of player's age or the gaming level of the participants for the results, although they were not the object here.

Other limitation is that interviews were generated in Finnish and conversion to English terms may have lost some of the Finnish nuance. Answers and different ladders were subjectively analyzed, so they contain the subjective view of the researcher.

Third limitation concerns the classification for value propositions, which was created for retail business and because of that, was not exact suitable for classifying AR mobile app game. The conceptual framework for consumer information systems development (CIS) could also have been used more for analyzing the results.

6.3 Future research

Implications for future research can be derived from the limitations. Larger data would give more detailed information of consequences and personal values of each feature and could have given better opportunities for example creating a classification for different value proposition types specifically in digital services, which could be one viewpoint for continuing the research. One interesting subject for future research would be to study more the term 'socio-hedonistic value proposition', in which forms it occurs and what would be the exact definition. Also, the connection between different player personalities and perceived value would be interesting point of research. Generally, value propositions in AR games and apps are very fascinating area and give a lot of different perspectives to explore.

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