EMPIRICAL ARTICLE

How monetization mechanisms in mobile games influence consumers' identity extensions

Miikka J. Lehtonen[1] · **J. Tuomas Harviainen[2]** · **Annakaisa Kultima[3]**

Abstract

Digital distribution and new business models have transformed mobile games from products to services. This servitization turn has enabled consumers to extend their identity in mobile games through prolonged engagement. Drawing on a qualitative study of 17 consumers and 16 producers of mobile games, we elucidate how servitization can have certain negative implications for consumers' identities. Our findings reveal four interrelated facets through which consumers can extend their identity in mobile games and four corresponding monetization mechanisms. Overt monetization can create identity disconnections and we offer suggestions on re-establishing the connection.

Keywords Consumer identity · Mobile games · Monetization · Service 4.0 · Servitization

1 Introduction

From the beginning of the twenty-first century, the video game industry has grown rapidly while going through a major servitization transformation (e.g., O'Donnell 2014; Kerr 2017; Kultima 2018). The video game industry is now the biggest form of entertainment, surpassing both the film and music industries

---

✉ Miikka J. Lehtonen
miikka@rikkyo.ac.jp

J. Tuomas Harviainen
tuomas.harviainen@tuni.fi

Annakaisa Kultima
annakaisa.kultima@aalto.fi

[1] College of Business, Rikkyo University, 3-34-1 Nishiikebukuro, Toshima-Ku, Tokyo 171-8501, Japan

[2] Faculty of Communication Sciences, University of Tampere, Tampere, Finland

[3] Department of Media, Aalto University School of Arts, Design and Architecture, Espoo, Finland

(Newzoo 2020). In addition, video games have become convergence points for many of the so-called Technology 4.0 innovations, making increasing use of artificial intelligence, virtual and augmented reality, data analytics and even non-fungible tokens (Nunley 2021). Perhaps one of the most important reasons behind the rapid growth and servitization (e.g., Vandermerwe and Rada 1988; Frank et al. 2019) is the introduction of digital distribution (Kerr 2017): while previously games were sold in physical formats, today they can be bought and sold in physical or digital formats, and individuals form online communities within and around them (e.g., Castronova 2007), facilitating the social online presence of their players. Therefore, business models have also diversified from one-time purchases toward free-to-play, subscription models, and microtransactions (Kim et al. 2010; Heimo et al. 2018). This cultural shift has also enabled consumers to extend their life, identity, and communities to the realm of video games, but due to prevalent business models and monetization mechanisms these extensions and their relation to games has become more prone to problems.

At the same time, prior research has made considerable inroads on explicating what video games mean to consumers and through what mechanisms video games go beyond transactions toward integral extensions of one's identity (e.g., Doh and Whang 2014). Yet, while technology has significantly transformed and diversified the production logics of video games (see also Gaiardelli et al. 2021; Koh et al. 2021), little is still known about how servitization impacts the relationship between video games and consumers. Prior research has shed light on the ethics of monetization in mobile games (e.g., Zagal et al. 2013; Harviainen et al. 2018; Heimo et al. 2018) and similarly Alha (2020) has called for a more nuanced treatment of the free-to-play business model from a consumer's point of view. Given that new business models emerging from the servitization turn have been shown to be ethically fragile, what kind of implications might this have for consumers and the meanings they attach to video games?

This paper, then, focuses on free-to-play mobile games (e.g., Supercell's *Clash of Clans*, King's *Candy Crush Saga*, and Wargaming's *World of Tanks Blitz*)—the largest subset of the video game industry (Statista 2021)—and their monetization practices from the perspective of consumers' identity extension. We draw on Belk's theorization on consumption as identity (1988, 2013; Belk and Llamas 2013; Ruvio and Belk 2018) by asking the following research question:

How are consumers extending their identity in mobile games and how are monetization mechanisms impacting such extensions?

We contribute to extant discussions at the intersection between identity as consumption (Belk 1988, 2013; Belk and Llamas 2013; Ruvio and Belk 2018) and monetizing on untact digital services (e.g., Nieborg 2015, 2020; Lee and Lee 2020; Becker et al. 2022) by highlighting how mobile games monetize not only on consumers' time and other resources, but perhaps more importantly on consumers' desire to express themselves through playing games. More specifically, we make three contributions to the literature. First, we illustrate how monetization mechanisms in servitized mobile games have influenced identity extension,

second, we diversify analyses of identity extension by focusing on mobile games, and third, we discuss how identity extension can emerge in the context of mobile games.

2 Literature review

2.1 Identity in marketing literature

Drawing on James (1890), Belk (1988) popularized in marketing and consumer research the notion that possessions and consumption are integral elements of our identity. Providing empirical evidence for objects, animals, and places extending our identity, Belk (1988, p. 160) claims that it is "an inescapable fact of modern life that we learn, define, and remind ourselves of who we are by our possessions". However, as Ruvio and Belk (2018, p. 108) point out, identity formation through possessions is by no means a straight-forward process with clear outcomes; instead, the things we possess "are also artifacts of the social norms that govern the production of identity within its boundaries".

While marketing and consumer research has made considerable theoretical inroads in terms of how we define ourselves through physical possessions and consumption (e.g., Ahuvia 2005; Norton et al. 2012), more recently Belk (2013) has drawn attention to the digital domain. Belk's (2013, p. 479) notion that certain digital possessions do not seem to have "a material analog existence" is further elaborated in Denegri-Knott and Molesworth's (2010, p. 117) treatise on digital virtual consumption (DVC) through four functions: stimulating consumers' desires, actualizing daydreams, enabling fantasies, and encouraging experimentation. In their study on digital possessions and their analog counterparts, Siddiqui and Turley (2006) found that individuals tend to place less value on the digital possessions because of the underlying uncertainty dealing with ownership. More recently, Leung et al. (2021) came to similar conclusions by showing how identity-motivated consumers seemed to prefer physical products as self-verification. Despite this, consumers are by no means a homogenous group of people. As such, Koles and Nagy (2021) provide a typology for classifying digital objects and consumer engagement (highest levels of engagement are likened to mobile and video games).

Thus, we now know that not all consumers treat digital possessions in a similar way and by the same token not all digital possessions have the capability of evoking engagement and feelings of ownership. Having said that, a majority of the studies in marketing and consumer research seem to have focused on digital possessions with analog counterparts (e.g., books, music, and email) and more specifically on such instances where consumer engagement with the object is unidirectional (e.g., reading a book usually does not change the contents of the book). As such, and in line with Belk (2013) and Koles and Nagy (2021), more research

is required on digital services where the consumer is an active participant, which is why this study focuses on mobile games.

2.2 Identity in game studies

As Ritterfield (2009) posits, games can go beyond pastime activities and be meaningful in myriad ways, not only as means to "kill time" (see also Castronova 2007). This stance is somewhat in conflict with Huizinga's (1949) notion of the magic circle; that is to say, playing games is a sort of encapsulated activity. However, as Consalvo (2009) has argued, playing games is always contingent on the surrounding context. Building on this line of thought, Consalvo (2009, p. 415) elaborates on their critique on Huizinga's (1949) magic circle:

> Players also have real lives, with real commitments, expectations, hopes, and desires. That is also brought into the game world ... We can neither ignore such realities nor retreat to structuralist definitions of what makes or defines a game. Games are created through the act of gameplay, which is contingent on acts by players. Those acts are always, already, contextual and dynamic.

In their study on Chinese gamers, Page (2012, p. 254) provides further support for challenging the artificial division between the digital and the physical: "ethics in the game is a matter of self-improvement, and that there is no difference between the self in the game and the self in the "real world"". What is more, as Tyni et al. (2013) describe, in games such hybridity can happen simultaneously or subsequently. Similar arguments are found also in Jacobs (2012) who claims that game mechanics and structures encourage community-building and participation and, consequently, an extension of the individual's identity "through appropriating or controlling an object for our own personal use" (Belk 1988, p. 150). Furthermore, as Doh and Whang (2014, p. 32) discuss, playing mobile or video games often goes beyond one-off instances meaning that games involve long-term engagement and commitment.

Whereas certain video game genres (e.g., role-playing games, life simulations) can create immersive narratives that extend the player's identity into the digital domain (e.g., Hussain et al. 2021), the mobile and video games that emphasize socializing with other players seem to have the potential to blend digital and physical identities (Doh and Whang 2014). At the same time, it should also be pointed out that games in their purest, theoretical form can give rise to multiple ways of constructing identities, yet game development practices (O'Donnell 2014) and player communities (e.g., Kivijärvi and Katila 2021) often limit these possibilities. Kivijärvi and Katila (2021), for instance, discuss how hegemonic masculine discourses in games narrow the opportunities for those players who identify as women.

Prior research has therefore shown how individuals do not seem to make a distinction between their digital and physical identity (e.g., Lehdonvirta 2009), and this is apparent especially in the context of mobile and video games. Yet, more research is needed on how monetization mechanics enable or prevent such identity cohesion. Prior research has made theoretical inroads in this domain on computer and console games—"the "consumer game" in the real world is no less a game than the one in

the virtual world" (Óskarsson 2012, p. 207)—and to further granulate these findings we ought to explore mobile games in more detail given their differences *vis-à-vis* console games. Game design can be considered the creation of meaningful experiences (Salen and Zimmermann 2003), and the game designers' role as "players advocate" (Fullerton 2018) but this view can in turn be criticized as inducing narcissistic behavior (Wilson and Sicart 2010).

3 Methodology

Given that we are interested in exploring how monetization mechanisms influence how consumers extend their consumption identity in digital environments, we conducted interviews with seventeen consumers and sixteen developers of mobile games. Consent was acquired from each of the interviewees and anonymity ensured throughout the research process.

3.1 Data collection

Both the consumer and practitioner interviews are part of a larger research project in which we have investigated the video game industry from the service and industry perspectives (Lehtonen et al. 2020). Prior to conducting the consumer interviews, we confirmed with each participant that they actively play mobile games with their

Table 1 Consumer data set collected for this study

Consumer	Gender	Age	Player typology (as per Kallio et al. 2011)	Gameplay habits
1	Female	27	Casual	To kill time
2	Male	27	Committed	As often as possible
3	Male	21	Committed	When commuting
4	Male	23	Social	On a daily basis
5	Male	20	Social	To kill time
6	Male	19	Committed	Casual and binge play
7	Male	27	Committed	To relax at home
8	Female	29	Casual	To kill time
9	Male	27	Committed	To kill time
10	Female	23	Committed	Intensity varies
11	Female	26	Casual	To relieve stress
12	Male	25	Committed	When commuting
13	Male	24	Committed	Almost on a daily basis
14	Female	27	Committed	On a daily basis
15	Male	28	Committed	While on the go
16	Female	43	Social	With their children
17	Male	21	Committed	Occasionally at home

smart device. Table 1 provides relevant background information on the consumers we interviewed.

We utilized Kallio et al.'s (2011) player typology to unflatten the consumer data set. More specifically, as Kallio et al. (2011, p. 347) formulate, that player typologies reveal digital gaming as "a multifaceted social and cultural phenomenon that can be understood, practiced, and used in various ways". This seems to be well in line with Belk's (2013, p. 490) argument that "[i]n the digital world, the self is now extended into avatars, broadly construed, with which we identify strongly and which can affect our offline behavior and sense of self". As such, just like in offline environments, our identity as consumers should not be treated as something being imposed by the mobile game, but instead we shape our identity, and our identity is being shaped *in relation to* mobile games.

Interviews with consumers were carried out face to face either in English or Finnish, recorded with a microphone or a smartphone, and they were manually transcribed verbatim shortly afterward. On average, the interviews lasted between 45 and 60 min, and they were semi-structured to give space to the interviewees to touch upon themes that they considered as important in this context. Not only did we focus on the gameplay experience but the whole service experience was covered during the interviews (e.g., downloading the game all the way to potentially removing the game from the smart device).

To complement the consumer perspective, we also interviewed sixteen practitioners working in or with the video game industry. It should be pointed out that not all our practitioner informants were developing mobile games, yet they were all professionally involved with them in one way or another. Table 2 describes our practitioner data set with selected background information.

Practitioner informants 1 to 14 were interviewed twice as we were collecting longitudinal data in order to better understand the changes taking place in the industry over a longer period of time (cf. Kerr 2017). The first data set was collected between 2012 and 2014, while the second round was collected between 2018 and 2020. Given that the second data collection phase coincided with the Covid-19 pandemic, some of the interviews were conducted online, but nonetheless majority of these interviews were also conducted in person.

As was the case with consumer interviewees, interviews with practitioners were conducted in either English or Finnish, recorded with a smartphone or video conferencing software's record function, and transcribed manually verbatim right after the interview. With practitioners, the interviews focused on game development, monetization mechanisms, and digital distribution. On average, interviews with practitioners lasted around 60 min, and we were interested in exploring how practitioners made sense of the servitization shift in mobile games (most of our practitioner interviewees had been working with mobile and/or video games before digital distribution, and hence new monetization mechanisms, had become de facto way of releasing games).

Table 2 Practitioner data set collected for this study

Practitioner	Organization, first phase	Date, first phase	Organization, second phase	Date, second phase
1 (teacher)	Higher education	12-2013	Higher education	01-2019
2 (journalist)	News media	12-2012	News media	05-2020
3 (founder, game developer)	Game dev company	08-2013	Game dev company (different)	06-2020
4 (founder, investor)	Freelancer	01-2013	Venture capital	03-2018
5 (product lead)	Non-profit organization	12-2012	Game dev company	05-2020
6 (marketing)	Game dev company	06-2013	Game dev company (different)	05-2020
7 (founder)	Public organization	06-2013	Game development company	05-2020
8 (founder)	Game dev company	11-2012	Game dev company (different)	05-2020
9 (top management)	Game dev company	12-2013	Game dev company	05-2018
10 (business development)	Game dev company	12-2013	Game dev company	05-2020
11 (lawyer)	Law firm	January 2014	Law firm	01-2019
12 (founder)	Game dev company	02-2013	Game dev company (different)	08-2018
13 (business development)	Interest organization	01-2014	Interest organization	06-2020
14 (operations manager)	Game dev company	01-2014	Game dev company (different)	05-2020
15 (Creative director)	Game dev company	January 2013	N/A	N/A
16 (CEO)	Game dev company	November 2012	N/A	N/A

3.2 Data analysis

To analyze our data, we utilized the Gioia methodology (e.g., Gioia and Pitre 1990; Gioia et al. 2013) that is well suited for exploring emergent and understudied phenomena. Since all authors were fluent in English and Finnish, we analyzed the data in its original language. In essence, the Gioia methodology breaks down the analysis process into three interrelated categories: first order concepts, second order themes, and finally aggregate dimensions (e.g., Gioia et al. 2013) (see Fig. 1). Analyzing the data should not be understood as rigidly linear, but instead emphasis is on moving from respondents' own words toward more theoretical explanations.

In the first phase, we focused on words and concepts the interviewees used to generate the first set of codes. This stage often generates a remarkable number of codes, and Gioia et al. (2013) recommend collapsing the initial codes into broader categories. With both data sets, we followed this suggestion by remaining close to the interviewees' words and thus working with sixteen 1st order concepts. The second phase takes the codes from the previous phase and engages in a dialogue between prior literature and the data and by categorizing the concepts into themes. Here, emergent concepts are contrasted with prior literature to see whether existing concepts can provide theoretical grounding for explaining what the data is telling us. As noted in the literature review, games—due to their interactive nature—differ from most other services, which is why we used prior literature as the foundation of our analysis. Finally, in the third phase, we identified relationships between the themes from the second phase to arrive at theoretical insights that might have explanatory value also outside our research context. Next, we combined our analysis from consumer and practitioner perspectives in order to analyze identity extension more holistically. This step focuses on devising a visual data structure that highlights how the themes in the data structure are interrelated (Gioia et al. 2013, p. 20). Thus, by analyzing both practitioner and consumer perspectives we were able
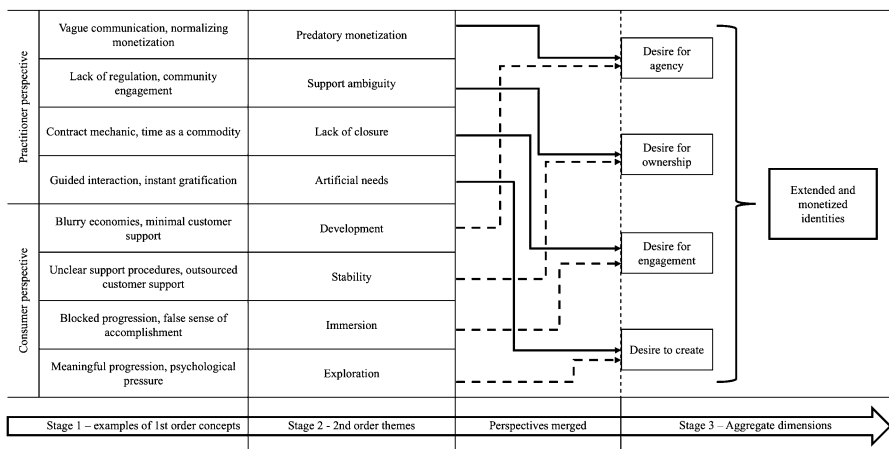

Fig. 1 Data analysis process visualized

to put more flesh on the bones of how contemporary mobile games influence identity extension. More specifically, in the last step we focused on identifying identity extension facets (consumer perspective) and what kind of monetization mechanisms impact them and for what purposes (practitioner perspective).

Finally, in terms of saturation, we followed Glaser and Strauss's (1967, p. 61) approach in grounded theory that focuses on theoretical saturation: as the interviews and their concurrent analysis progressed, categories started to repeat themselves despite our efforts to ensure diversity among interviewees (e.g., how consumers described their playing habits and what kind of games practitioners were involved with) (see also Kenesei and Bali 2020).

4 Findings

Below, we discuss our findings from the perspective of how mobile games can give rise to players' identity extensions and how game companies' monetization mechanisms might impact such extensions. Our analysis discovered four interrelated facets (desire for engagement, desire to create, desire for agency, and desire for ownership) which demonstrate how individuals can extend their identity through games, and each one of these corresponds to an element in the game as well as to a monetization mechanism. It is worth noting that the mobile game per se does not necessarily have a negative impact to identity extensions, but focus is more on what kind of monetization mechanisms have been implemented and how they influence the connection between consumers and the mobile game. At the end of this section, we synthesize the perspectives through the framework we devised based on the findings.

4.1 First facet: desire for engagement

Like games more broadly, mobile games can, but not always, give rise to immersive gameplay experiences that, in turn, create a desire for engagement among players. However, games can also create a sense of engagement through their world-building capabilities—in other words, engaging in an activity in a world that exists in parallel to the surrounding reality; it is as if the real world and the game world blend into one. However, especially in casual free-to-play mobile games engagement is often monetized by breaking the immersion:

> "Yes, mostly in match games, because often times, for example Gardenscapes, you can't progress in the game unless you match enough things to get the stars. At first, yeah, I would get really frustrated with all these fricking notes I can't get, because the game is playing against me. I can't get it, and I get frustrated and leave it. I'd come back and it's like, "Huh, okay, so this and this and this," and slowly I actually get through that and make progress in the game." (Consumer 10)

Above, the interviewee describes how the game's progression design broke the immersion, encouraging the player to pay their way forward. This, we believe, lends

itself to inauthentic experiences as game progression is not earned through play, but instead often bought. While players in certain computer games have outsourced resource gathering to other individuals (e.g., Wang et al. 2009), in mobile games money is often spent to buy away boredom (e.g., Lehtonen et al. 2021). Similarly, another interviewee describes how lack of closure makes it difficult to become fully immersed in the game. These design conventions are, while not exclusive to, yet typical to servitized mobile games. They were reflected by our practitioner interviewee in a following manner:

> The game monetizes with use of hard currencies. We have the soft currency, which is the coins and the hard currency, which is diamonds. You buy that and you use diamonds to speed things up. So right now I'm producing clay. If I don't want to wait, I pay one diamond and then I get my clay. I take the clay and then I go to the refinery building, which is in this case the brick box and from here you can see I can turn 20 clay into 20 bricks, or I can turn 20 clay into 10 plaster and you see the different production times. This is what is called the contract mechanic with these free to play games. (Practitioner 6)

And in return by a consumer interviewee: "Yeah. It's like maybe they cannot trick you into thinking that you're accomplishing something. For example, I don't know if Candy Crush has an ending. If there's a point where there are no more levels. I'm just hoping there is and someday I'm going to reach it. In Pokémon, there's a chance that you're actually going to catch all of the Pokémon but maybe they will keep adding them, so I don't know if there's this ending that I'm hoping for…I think it's just a big sense of accomplishment. It's like reading a book. Why would you read forever a book, if you're not going to reach the end?" (Consumer 1).

Paying for progression becomes problematic when there is no closed narrative and ending in the game, thus resulting in experiences that resembles meaningless labor instead of meaningful engagement. Having said that, labor per se is not the problem here; however, it becomes problematic when the business model of the game forces redundancy to the player. More specifically, while certain video games have been found to evoke engagement and emotional reactions from the players (Frome 2019), our findings granulate this understanding by showing how player engagement differs between games, often due to differences in the business model. Here, what is of essence is what kind of power consumers have over their digital possessions.

"I don't consider myself that competitive at least when it comes to mobile games. For example, I used to play Clash of Clans, but because it is about destroying other players' villages and ensuring your village doesn't get destroyed it doesn't speak to me that much. But in games where focus is on building things, I mostly look for aesthetic experiences because that is more important to me than efficiency. SimCity is a good case in point because you can make your city more efficient through good road and building placement, but for me it is more important to make the city look good and organic. So for me aesthetics are important especially in games where there is no clear narrative." (Consumer 12).

As reflected in the above excerpt, digital objects in mobile games can be used to express and extend one's identity, and as such they present game development companies with interesting opportunities to monetize engagement.

4.2 Second facet: Desire to create

Mobile games can also cater to players' desire to create. Players not only want to interact with the game world and exist there, but they also want to explore it on their own terms. In this way, also mobile games can extend players' identities by providing them with opportunities to explore new worlds and create either objects or experiences. Yet again, the free-to-play business model taps into this desire by limiting players' options to create by triggering artificial desires:

> We want to keep the interfaces as clean as possible, so you actually click on something inside the game to pull these things up. Like you give a much more immersive game experience so you can get into that. And it's also really important for the very casual players, the sort of the Farmville crowd, they need to be told what to do. Go here, do this, build this, generate this, sell this. So we're generating a close to infinite amount of tasks for people do. (Practitioner 6)

The above excerpt highlights how monetization, from the perspective of the practitioners, often becomes a question of designing clear pathways or artificial desires for the players. Yet from a player's perspective this can be seen as an unpleasant limitation. Players might struggle with the loss of power over the pace of their game experiences:

> After a little bit of a long time ... the first time was about ten seconds. This time was about maybe 20 seconds. Again, it just like, "Hey go here. Build this right now. We're locking out everything else until you do this." It's like, "You're not progressing the game in the way that we want you to, so we're going to make you do it." That was kind of frustrating because I still don't know what I'm building or why because I don't have a chance to actually explore the game. You're just locking me out, telling me to build these things first. I didn't like that." (Consumer 17)

"I guess, progress is a good part. In Candy Crush, you can see a trailer going up and up and the Gardenscapes is very visual because you're improving your garden and you can see pretty flowers and pretty trees. Seeing progress. In the Game of War, you're building your city, you're building more farming spaces and getting your military. Visual progress is nice to see." (Consumer 1).

Furthermore, in the above excerpt, the consumer interviewee was expressing their positive experiences of witnessing their progression. The game offered them a visual reward fulfilling the desire to create. It is important that the players' desire to create is catered to, but balancing between freedom and control is a delicate act for game development companies focusing on free-to-play mobile games. Too little control, and the game is not guiding toward microtransactions; conversely, too much control might result in losing the players as their perceived values for the transactions are not met.

"I don't consider myself to be a player who takes playing seriously, but in any case I do find myself from time to time agreeing with some player communities

online on how some mobile games have become of lesser quality. Even with console and computer games these new business models are being imposed on players, but I don't see why mobile games couldn't be deeper with richer narratives. Nowadays it's just fiddling with instant gratification games where monetization is imposed on you behind every corner, you know, they're trying to get you to buy more addons." (Consumer 12).

While the interviewees were discussing how they want to be active participants in the game world, at the same time they were also aware of how some game companies focus on the monetization design resulting in shallow gameplay experiences and lack of ownership for the players.

"It's a bit of a thin red line because the free-to-play model is based on the assumption that players are incentivized to buy something. Or that there is this feeling of being psychologically pressured to bring about elements of enticement. If you start playing free-to-play games you should be aware of these mechanisms and as long as you're aware of how your experiences are monetized on, then it should be ok. Playing games for free implies you know you'll be bombarded with calls to spend money. So in that sense maybe it's not ethically wrong. Monetization can be done well or poorly, but as such pressuring is not ethically wrong." (Consumer 12).

Quite curiously, some of the interviewees seemed to acknowledge the notion that game and monetization mechanics are not inherently evil; instead, players do have agency with regards to whether to engage in playing mobile games. Yet, understanding this would require media literacy from the players since otherwise there is a potential that players might allow their identity in the game to be overtly regulated by the company through the way their mobile games have been designed. Having said that, we are not claiming players to be uncritical consumers of mobile games, but instead it might be relevant to ask whether we need more regulation on mobile games through country-level policies and simultaneously more transparency from game development companies (e.g., does the game adapt to player spending).

4.3 Third facet: Desire for agency

Given that games inherently require the player's active participation (i.e., a game is not a game without the player), this also implies that players—more often than not—wish to develop themselves through playing games. For others, it might be about improving their skills while for others, games might be perceived as giving rise to meaningful and immersive experiences (see also Casaló et al. 2021). In any case, by interacting with a game, players have the capability to develop their desire for agency, and in this regard, there is a possibility for predatory monetization that aims at cashing in on players' desire to develop themselves.

"What money is worth gets quite blurry because games use imaginary currencies. So in the end, you don't always know the real value of what you're buying, often these in-game currencies are quite expensive when compared to what you can buy with them. Like big offers seem somehow less evil because they advance you more in the game, and especially in Candy Crush I thought what I got with in-game currencies was awfully little. So I wasn't sure whether I got good value for my money,

and it makes you feel whether people would buy these things less if they really knew the value." (Consumer 11).

"Yes, so we have been thinking about how we communicate so the players understand what they are buying and what they are receiving in return. It is about crafting the message and making sure it is well received. For the time being, we have been quite content with how we have managed to do that so far." (Practitioner 12).

In essence, discrepancies might occur due to the free-to-play model still being somewhat new and at the same time the servitization turn in mobile and video games does not seem to be complete given that the value creation and capture logics here are not clear. In other words, ambiguity in in-game currencies seems to serve the companies—to some extent—while for consumers such ambiguity tends to shift their attention away from gameplay toward making judgment calls on whether to make in-game purchases.

By the same token, experiences with customer support also create distortions between the player and the game. In a sense, we speculate that customer support has received little attention—perhaps bare minimum—in some game development companies due to how saturated the market currently is:

> "Basically all games these days are free, so you cannot compete with price anymore. And that has resulted in there being way too many games in the market, and that's why people's attention span has become quite short. That's why any game's tutorial needs to be really polished, because that's what the player sees first. Tutorial's importance is significant. That's why it doesn't make sense to complain about why people don't play our game." (Practitioner 14)
> I thought that was a very good-hearted thing. A lot of mobile apps, like the second time you log in, regardless of whether or not you've even done the tutorial … They did that with Game of War Fire Age. I hadn't even done the tutorial. I quit halfway through the tutorial. I forget why, I had to go do something. I opened it back up, wasn't even done with the tutorial, but because it was my next log in, they're like hey buy this thing. I'm just like, oh I'm okay. Thanks though. I'm just going to finish this first. (Consumer 17).

Thus, while user acquisition is indeed important in service business, game development companies need to devote time to ensure how commitment and engagement can be built in a healthy manner. While we are not claiming all game development companies to overemphasize user acquisition over retention, current industry and platform dynamics seem to favor the former over latter. Predatory monetization might, as Practitioner 14 above hints at, yield short-term gains, but in the end, there is a high probability that consumers remember which game development companies create predatory games and which ones do not.

4.4 Fourth facet: Desire for ownership

Given that mobile games today can be seen as seemingly never-ending services, for the players this presents a curious opportunity to create a long-term commitment with the game—stability through longevity. Granted, games with a clear ending are

also capable of this, but the options are more diverse in digitally distributed games as they can be modified and extended over time. Having said that, like other services, mobile games are also prone to service failures that impact the players' desire to seek stability through long-term commitment:

> I did make the claim directly to them. I think they also linked to Google Play but they said, "If you have a problem, just contact us." I contacted them directly. I told them, "I want to get this back." They said, "No, you got exactly what you ordered, so there's no way we can do anything about it. You asked for something and you got it, so there's nothing we can do". (Consumer 1)

> "I was like, on one hand, sure problems happen, I understand. On the other hand, that kind of sucks. I just had to sit there and wait the entire time. I didn't know if they were going to respond, because over a week is a long time at that point. Then, once they did respond, I had to start all over, the process. Granted, it wasn't that much information I had given them and I could do it again. It was just kind of upsetting to have to restart again. Also, I didn't like the app itself, so I thought that was fitting that some of the worst customer service came from that app." (Consumer 17).

Service recovery rigidity and support ambiguity, as noted above, have the potential to throw the player into a regulatory limbo where the service provider guides the player to liaise with the platform provider and vice versa. Thus, this kind of ambiguity in how responsibilities are distributed pulls the player back from the game world toward somewhat lengthy and Kafkaesque customer support. This is further elaborated below:

> I remember going to their page, reading the FAQs about refunds, and they don't necessarily make you, but they sort of try and guide you down all these FAQs before they even allow you to contact someone. During those FAQs I saw, One: we don't offer refunds. Which I'm like, okay sure, a lot of other places don't offer refunds, but as I got further down the FAQs, I saw, Two: We do not answer questions about the game. I'm just like, what, why? What do you gain by not answering questions about the game? If I want help on how this mechanic works, you're the game support team, that's what you should do. Right? I thought that was really, really weird. Maybe their design choice behind it is that, oh we want players to ask each other and foster a community. It's like yeah, that's a good thing, but you should still offer your support services, if we need them as players. (Consumer 17)

In the excerpt above, the interviewee is touching upon the notion of community, and the same is discussed below from a practitioner's point of view:

> Long term success comes from people who genuinely want to play your game. There are companies that quickly launch games with a short shelf-life, say, one week. If this is the timeline, you are trying to monetize already here, but then you also have to think about how to monetize in the long run. You have to get people to genuinely value new content and to commit to the game. This is exactly the difficulty in releasing games - timing needs to be right, the product needs to be right, and the users need to be right. (Practitioner 9)

Thus, nurturing a sense of community around a mobile game seems to be a means to monetize commitment, yet there is a conundrum here: if the game development company nudges players toward communities too aggressively (as the excerpt from Consumer 17 above highlights), the players might perceive this as the company outsourcing work to the community that ought to fall under the company's responsibilities (e.g., customer support). Furthermore, in such instances community interaction is quickly seen as labor, thus creating a gap between the player and the mobile game.

4.5 Synthesizing the findings: extended identities monetized

As the findings above reveal, servitized mobile games seem to be located in a curious terrain where players want to engage with the service in various ways and simultaneously game development companies are enticing them to do so in order to capitalize on engagement. Having said that, mobile games are also complex in the sense that homogenous gameplay experiences can bring about financial predictability for companies and fewer means for players to engage with the game, and conversely diverse gameplay experiences can promote player freedom while making it more challenging to create engaging experiences. At the same time, the free-to-play business model has become the dominant business model not only in mobile games but in digital applications more broadly, thus hinting at the challenges related to deviating from the norm (i.e., game development companies often cannot adopt other business models as this might imply significant losses in terms of revenue, or investments). Nonetheless, to synthesize the findings discussed above, Fig. 2 visualizes how the findings are intertwined.

In line with Belk (2013, p. 490), the framework above acknowledges the notion that "[t]he existence of a core self is a belief rather than a fact" (Belk 2013, p. 490). With this, we wish to draw attention to mobile games being able to extend player's identity (left side) in at least four different facets (right side), and monetization mechanics (middle) have the potential to influence the identity extension processes. It should be noted, however, that we are not claiming game development companies to consciously create rifts between players and the mobile game. While certain mobile games have been accused of predatory monetization (see e.g., Harviainen et al. 2018), we like to believe the findings discussed above emerge due to the relative novelty of free-to-play and microtransactions. While out of the scope of this article, we speculate that investor and market pressures also steer game development companies toward new monetization mechanisms. At the same time, due to the sheer volume of games released across platforms, players can quickly move between games, expecting their desires to be fulfilled for free. Thus, the findings we have covered above should be seen as some of the first steps toward understanding and theorizing on the current market dynamics in mobile games.
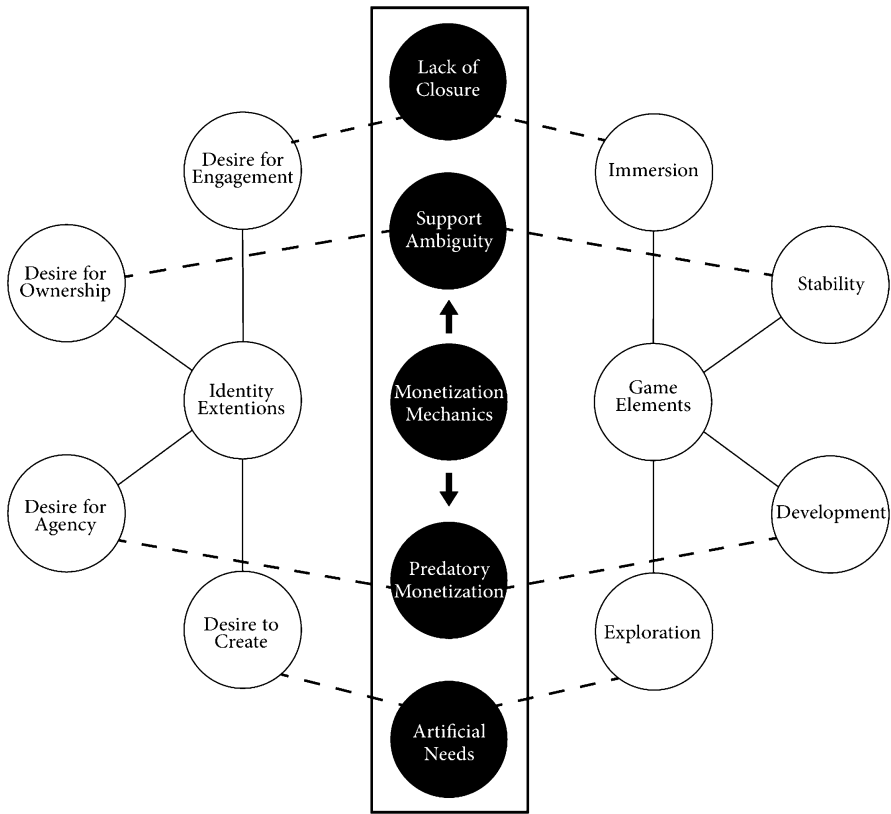
Fig. 2 Framework for extended and monetized identities

5 Discussion

Drawing on Sartre (2021), Belk (1988) understands identity extension through objects to emerge through three processes: mastering, creating, and knowing an object. For Sartre (2021, p. 746) to desire something "is a lack in being" and a manifestation of "a lived relation". That is to say, we incorporate objects into ourselves in order to "learn, define, and remind ourselves of who we are by our possessions" (Belk 1988, p. 160). Based on our findings, identity extension in the context of mobile games emerges through mastering or knowing the mobile game (Belk 1988; Sartre 2021), filling the temporal void with meaningful action, being introduced to mobile games by others (e.g., siblings, friends), and experiencing a pleasant gameplay experience (e.g., a game optimized for smart devices). In other words, not only do we wish to extend our identity through objects by means of maintaining "a certain relationship with it" (Sartre 2021, p. 747) but social relations and technology providing enjoyable experiences also give rise to identity extension (see also Casaló et al. 2021).

5.1 Consumer perspective

Previous literature in marketing and consumer research has mostly looked at objects and physical possessions as passive entities (e.g., Belk 1988; Norton et al. 2012); that is to say, we as individual consumers regulate what the object could and could not do (see also Hoffman and Novak 2018). Prior research has challenged this notion as somewhat epitomizing Western notions of individualism (e.g., Belk 1988; Ruvio and Belk 2018), and in this paper we also challenge the unidirectional relationship from the object's perspective. Namely, mobile games—due to their inherent requirement for interaction—create peculiar and promising avenues for interaction between the digital and the physical. Building on this line of thought, since mobile games are nowadays treated as services (Lehtonen et al. 2021), our findings in this paper illustrate how monetization mechanisms in mobile games can impact consumers' identity formation processes.

Given that the findings discussed in this paper reveal how consumers extend their identity by interacting with mobile games, we join Belk (2013) and Lehdonvirta (2009) and find support for mobile games going beyond "killing time", into identity-building acquisition and consumption practices. Furthermore, while Lehdonvirta et al. (2009, p. 1075) discuss how consumption of virtual goods can "act as a substitute to material status consumption within a reference group", our findings call for a more granulated treatment of mobile and digital games. In other words, while games—due to their inherent reliance on player engagement—give rise to various permutations of the extended self, game and monetization mechanisms seem to support somewhat different affordances. For example, Lehdonvirta et al. (2009) studied *Habbo Hotel*, a massively multiplayer online environment that relies on cosmetic purchases (e.g., virtual clothing and furniture), and Carter et al. (2020) similarly studied *Fortnite* that predominantly monetizes through microtransactions that do not impact the gameplay experience. In both instances, the availability of virtual goods, in a way that enables countless combinations coupled with social playing, has transformed games into a group practice (Belk 2013, p. 479).

Furthermore, our findings reveal how customers' perceptions of customer support being automated creates ripple effects to identity work. In a conceptual study on automated social presence, van Doorn et al. (2017) discuss under what conditions customers can experience psychological proximity with machines (see also Lee and Lee 2020). While their study seems to rest on the assumption that the customer is aware when they are interacting with a machine or another individual, our findings suggest that when customers *believe* they are interacting with a customer support bot their connection to the game is broken. Consequently, since the game and the player are inextricably intertwined, this relationship is also severed. Moreover, whether or not players believe they have what is called a core self, the service providers (game development companies in our case) ought to be transparent about when the players are interacting with a machine and when they are interacting with another human being. From an identity's point of view, it does not seem to matter whether we interact with humans or machines, but players do seem to expect a certain sense of control. Furthermore, labor should be visible, not automated or phased out to the background to highlight the notion that mobile games are designed by people for people.

5.2 Service perspective

While physical objects are often sold as a one-time purchase, thus creating a somewhat separate relationship between the consumer and the brand (e.g., Aaker 1997), with mobile games and other digital services the company is influencing the relationship between the consumer and the service. At the same time, it should be pointed out, however, that not all mobile games and digital services impact the consumer's identity in a similar way. Games that monetize commitment seem to be more prone to generating dubious interactions between the player and the game than those games that rely on in-app purchases which do not influence gameplay (i.e., cosmetic purchases) (Petrovskaya et al. 2022). For instance, it seems that not limiting spending in a game is an element of the service's business model that gives rise to harmful interactions. Conversely, free-to-play, with its seemingly never-ending orientation is not questionable per se, but what is monetized in the game and how often can be problematic (e.g., Weststar and Dubois 2022). Similarly, while Instagram, a photo and video sharing service, has been criticized for giving rise to negative psychological effects in its users, Casaló et al.'s (2021) study shows how brands aiming at evoking positive responses from their followers experienced increased engagement and interaction intentions. In other words, technology can facilitate consumer engagement through diverse means.

Further, through the use of artificial scarcity for digital objects, game developers can control consumption and in-game economies (Lehdonvirta and Castronova 2014). In other words, regulating and tweaking monetization mechanisms and the gameplay experience more broadly has implications not only for profits but also in terms of how consumers' identities are shaped, especially since social factors have been shown to influence game-related purchases (Lehdonvirta 2009; Hamari and Keronen 2017). Furthermore, as Belk (2013, p. 480) proclaims, consumers can become attached to digital objects "due to the amount of work involved in acquiring them through long hours spent in-world".

Attachment to games was aptly illustrated in Weijo et al. (2019) who showed how a game development company evoked negative emotions and pushbacks in the brand community by creating undesired gameplay experiences. Many of the player-preferred forms of monetization appear to rely on self-expression through, for instance, virtual acquisitions that can be displayed to other players (Lehdonvirta and Castronova 2014). This is exemplified by the favor of "cosmetic" items such as skins, which have no gameplay impact, but make their owners look "more cool" (Heimo et al. 2018). Then again, there is an underlying assumption that a player should have the possibility to completely avoid payment for their own benefit and regulate the valuation of the gameplay without understanding that there needs to be a compensation to the creative work that the developer has been doing.

As Hamari and Lehdonvirta (2010, p. 26) argue, "virtual world operators find themselves in a situation where revenue generation logic is distanced from the design of the service itself" (see also Lehtonen et al. 2021). Game design has a long tradition of conjuring engaging experiences, yet the decade-or-so old microtransactions are still searching for their shape. One good example of this is countries such as Belgium and China limiting or banning loot boxes (McCaffey 2019); that is to

say, policymakers have come to understand how the monetization of mobile games can result in overconsumption, yet as we have discussed during the course of this paper there are more far-reaching implications. Granted, spending considerable amounts of money is an issue in itself, and in this paper, we are drawing attention to how mobile games—through their monetization mechanisms—can limit our means to express ourselves, to extend our identities in digital environments.

6 Conclusion

In this paper, we have looked at how mobile games influence players' identity extension processes and monetize their social online presences, by asking the following research question:

6.1 How are consumers extending their identity in mobile games and how monetization mechanisms impact such extensions?

To explore this question, we interviewed 17 consumers and 16 practitioners working in or with the video game industry. As our findings show, servitization—moving from games as products to games as services—has created peculiar interactions between producers and consumers of free-to-play mobile games. On the one hand, servitization has enabled consumers to extend their identity through mobile games through means previously unavailable when games were treated predominantly as products, and on the other hand, mobile games seem to have been designed so that some of the monetization mechanisms regulate consumers' desires to extend their identity. In other words, monetization in mobile games can create disconnections between the game and the consumer, thus resulting in possible detrimental interactions.

Further, based on the findings, we crafted a framework that visualizes four desires through which players can extend their identity through the game's elements and four monetization mechanisms influencing identity extensions. Quite peculiarly, the video game industry had been profitable prior to digital distribution, but it is only after digital distribution became the *modus operandi*—and, consequently, the free-to-play business model—that we have started to witness the dark side of digital games.

6.2 Theoretical implications

This paper has put forth three theoretical implications. First, prior research has shed light on how consumers interact with physical and digital objects by treating them as extensions of their identity (Belk 1988, 2013; Hoffman and Novak 2018), and our findings corroborate this body of knowledge by showing how mobile games—digital objects—have the potential to enable or prevent identity extension. As such, identity extension does not seem to be a relationship only between the consumer and the digital object, but the producer of the said object lays the initial conditions and,

consequently, influences the relationship as the digital object is developed over time. Second, prior studies on digital games from the perspective of identity extension seem to have treated digital games as a unified category, but by focusing on mobile games and contrasting the findings to console games, for instance, we have shown how there are differences between digital games. As such, we hope future research in this domain continues to consider differences and similarities between digital games and their business models. Third, our findings also bring to light additional processes through which identity extension emerges when playing mobile games. Prior literature has found identity conflicts (Ruvio and Belk 2018), for instance, to serve as impetus for identity formation, and in this paper, we illustrate how desire to improve oneself and to kill time also trigger identity extension.

6.3 Implications for managers and practitioners

Findings reported in this paper have implications for managers in game development companies and companies focusing on digital services more broadly as well as policymakers. In essence, what surfaced was that if the gameplay experience was too homogenous, there was little or no room for consumers to engage with the game, and conversely if the gameplay experiences are too diverse and scattered, lack of cohesion can make it difficult to create engaging gameplay experiences. Therefore, managers could ensure that games cater for individual expressions and simulations of identity as well as group cohesion and social connections. By doing so, mobile games could allow for expressions of said individual and purchase-extended digital identities without compromising revenue streams. As such, the free-to-play business model per se is not harmful or conducive to player attrition, but instead ambiguous communication and aggressive monetization seem to be the main sources of negative implications. To ensure meaningful gameplay experiences, managers and game developers alike should gain in-depth understanding on why and for what purposes people play their games (see also Barta et al. 2021). As one of the practitioner participants put it, mobile games—and digital services more broadly—need to create genuine value for the players to get them committed. Here, participatory and player-centric development could prove useful (Palma et al. 2019; My-Quyen and Hau 2021).

At the same time, given that the mobile game industry is currently dominated by the free-to-play business model, legislative bodies and platforms could focus on changing the industry's monetization practices to be less predatory through regulatory practices (such regulations could similarly focus on digital services more broadly). This, however, is by no means an easy feat given how profitable the industry is. Having said that, considering that countries such as Belgium and China have imposed limits on loot boxes or even outright bans on them (e.g., BBC 2019), similar policy interventions could also be considered to ensure mobile game development practices are nudged toward a more inclusive direction. As such, policymakers could consider at least two actions to nudge game development companies forward: first, incentivize companies to open up their player data for external scrutiny to create more meaningful digital services (Economist

2022), and second, establish a committee consisting of practitioners and researchers that provides expert opinions on how digital games could and ought to be regulated. Much work needs to be done both in terms of policymaking and monetization practices, but we are hopeful given the recent interest from policymakers to regulate digital services and platforms, and similarly how the video game industry has been evolving based on customer responses and employee pressure.

6.4 Limitations and avenues for further research

In line with Belk (2013), future inquiries could explore the cross-cultural dimensions of mobile game consumption and development. For instance, more studies are needed on how games developed outside the Western hemisphere monetize identity regulation and similarly how players in non-Western countries consider the intersection between playing mobile games and extending identities. As such, as the consumption and production of games diversifies, so, too, should our theoretical insights and contributions.

Similarly, future inquiries could also draw on participatory design (e.g., Rodgers et al. 2020) to work with players and game development companies in order to generate immediate impact on game development and monetization. As Casaló et al.'s (2021) study on positive emotions and user engagement in Instagram reveals, content creators aiming at eliciting positive responses were prone to experience increased engagement and interaction intentions from their followers. Thus, there is reason to believe that generating consumer engagement can be achieved so that there is a healthy balance between profits and consumer enjoyment.

Another promising avenue forward for generating novel theoretical insights would be to further granulate player identity categories. In this paper, we have looked at how monetization mechanics influence players' identity formation processes, and future inquiries could look at how those not identifying as white cis male negotiate their identity through mobile games, how their player profiles affect the results, and whether contemporary mobile game development practices favor certain demographics over others. The reasoning here being that since the global video game industry is still, to a large extent, relatively homogenous (IGDA 2021), games are being developed from a certain demographic vantage point. In other words, can a game development team consisting solely of white cis males provide avenues for identity formation for others? This is not supposed to be taken as an essentializing argument; instead, more research and awareness is required in terms of how monetization mechanics and game development practices influence and shape identity formation processes in the context of digital services.

Declarations

References

Aaker JL (1997) Dimensions of brand personality. J Mark Res 34:347–356

Ahuvia AC (2005) Beyond the extended self: loved objects and consumers' identity narratives. J Consum Res 32:171–184

Alha K (2020) The rise of free-to-play: how the revenue model changed games and playing. PhD dissertation, Tampere University Press, Tampere

Barta S, Gurrea R, Flavián C (2021) The role of flow consciousness in consumer regret. Internet Res. https://doi.org/10.1108/INTR-08-2020-0482

BBC (2019) Gaming loot boxes: what happened when Belgium banned them? https://www.bbc.com/news/newsbeat-49674333. Accessed 2 Dec 2021

Becker M, Mahr D, Odekerken-Schröder G (2022) Customer comfort during service robot interactions. Serv Bus. https://doi.org/10.1007/s11628-022-00499-4

Belk RW (1988) Possessions and the extended self. J Consum Res 15:139–168

Belk RW (2013) Extended self in a digital world. J Consum Res 40:477–500

Belk RW, Llamas R (eds) (2013) The Routledge companion to digital consumption. Routledge, London

Carter M, Moore K, Mavoa J, Horst H, Gaspard L (2020) Situating the appeal of fortnite within children's changing play culture. Games Culture 15:453–471

Casaló LV, Flavián C, Ibáñez-Sánchez S (2021) Be creative, my friend! Engaging users on Instagram by promoting positive emotions. J Bus Res 130:416–425

Castronova E (2007) Exodus to the virtual world: how online fun is changing reality. Palgrave Macmillan, New York

Consalvo M (2009) There is no magic circle. Games Culture 4:408–417

Denegri-Knott J, Molesworth M (2010) Concepts and practices of digital virtual consumption. Consum Mark Cult 13:109–132

Doh YY, Whang S-ML (2014) From separation to integration: identity development of korean adult players in online game world. Games Culture 9:30–57

Economist (2022) Are video games really addictive? https://www.economist.com/international/2022/01/01/are-video-games-really-addictive. Accessed 11 Jan 2022

Frank AG, Mendes GHS, Ayala NF, Ghezzi A (2019) Servitization and Industry 4.0 convergence in the digital transformation of product firms: a business model innovation perspective. Technol Forecast Soc Chang 141:341–351

Frome J (2019) Interactive works and gameplay emotions. Games Culture 14:856–874

Gaiardelli P, Pezzotta G, Rondini A et al (2021) Product-service systems evolution in the era of Industry 4.0. Serv Bus 15:177–207

Gioia DA, Pitre E (1990) Multiparadigm perspectives on theory building. Acad Manag Rev 15:584–602

Gioia DA, Corley KG, Hamilton AL (2013) Seeking qualitative rigor in inductive research: notes on the Gioia methodology. Organ Res Methods 16:15–31

Glaser BG, Strauss AL (1967) The discovery of grounded theory. Aldine, Chicago

Hamari J, Keronen L (2017) Why do people buy virtual goods: a meta-analysis. Comput Hum Behav 71:59–69

Hamari J, Lehdonvirta V (2010) Game design as marketing: how game mechanics create demand for virtual goods. Int J Bus Sci Appl Manag 5:14–29

Harviainen JT, Ojasalo J, Nanda Kumar S (2018) Customer preferences in mobile game pricing: a service design based case study. Electron Mark 28:191–203

Heimo O, Harviainen JT, Kimppa K, Mäkilä T (2018) Virtual to virtuous money: video game business logic and virtue ethics. J Bus Ethics 153:95–103

Hoffman DL, Novak TP (2018) Consumer and object experience in the Internet of Things: an assemblage theory approach. J Consum Res 44:1178–1204

Huizinga J (1949) Homo Ludens. A study of the play-element in culture. Routledge, London

Hussain U, Yu B, Cunningham GB, Bennett G (2021) "I can be who I am when I play Tekken 7": E-sports women participants from the Islamic Republic of Pakistan. Games Culture 16:978–1000

IGDA (2021) 2021 Developer Satisfaction Survey Summary. https://igda-website.s3.us-east-2.amazo naws.com/wp-content/uploads/2021/10/18113901/IGDA-DSS-2021_SummaryReport_2021.pdf. Accessed 20 Dec 2021

Jacobs M (2012) Taking one—or three—for the team. In: Molesworth M, Denegri-Knott J (eds) Digital virtual consumption. Routledge, New York, pp 161–177

James W (1890) The principles of psychology, vol 1. Henry Holt, New York

Kallio KP, Mäyrä F, Kaipainen K (2011) At least nine ways to play: approaching gamer mentalities. Games Culture 6:327–353

Kenesei Z, Bali Z (2020) Overcompensation as a service recovery strategy: the fnancial aspect of customers' extra effort. Serv Bus 14:187–216

Kerr A (2017) Global games: production, circulation and policy in the networked era. Routledge, London

Kim C-S, Oh E-H, Yang KH, Kim JK (2010) The appealing characteristics of download type mobile games. Serv Bus 4:253–269

Kivijärvi M, Katila S (2021) Becoming a gamer: performative construction of gendered gamer identities. Games Culture. https://doi.org/10.1177/15554120211042260

Koh YI, Han SH, Park J (2021) A systematic process for generating new blockchain-service business model ideas. Serv Bus. https://doi.org/10.1007/s11628-021-00465-6

Koles B, Nagy P (2021) Digital object attachment. Curr Opin Psychol 39:60–65

Kultima A (2018) Game design praxiology. PhD dissertation, Tampere University Press, Tampere.

Lee SM, Lee D (2020) "Untact": a new customer service strategy in the digital age. Serv Bus 14:1–22

Lehdonvirta V (2009) Virtual consumption. PhD dissertation, Turku School of Economics, Turku

Lehdonvirta V, Castronova E (2014) Virtual economies: design and analysis. MIT, Cambridge

Lehdonvirta V, Wilska T-A, Johnson M (2009) Virtual consumerism. Inf Commun Soc 12:1059–1079

Lehtonen MJ, Ainamo A, Harviainen JT (2020) The four faces of creative industries: visualising the game industry ecosystem in Helsinki and Tokyo. Ind Innov 27:1062–1087

Lehtonen MJ, Vesa M, Harviainen JT (2021) Games-as-a-disservice: emergent value co-destruction in platform business models. J Bus. https://doi.org/10.1016/j.jbusres.2021.11.055

Leung E, Cito MC, Paolacci G, Puntoni S (2021) Preference for material products in identity-based consumption. J Consum Psychol. https://doi.org/10.1002/jcpy.1272

McCaffey M (2019) The macro problem of microtransactions: the self-regulatory challenges of video game loot boxes. Bus Horiz 62:483–495

My-Quyen MT, Hau LN (2021) Transforming customer brand engagement to co-creation value through participation energy and effort. Serv Bus 15:493–514

Newzoo (2020) 2020 global games market report. https://newzoo.com/insights/trend-reports/newzoo-global-games-market-report-2020-light-version/. Accessed 22 Dec 2021

Nieborg DB (2015) Crushing candy: The free-to-play game in its connective commodity form. Soc Media Soc 1:1–12

Nieborg DB (2020) Apps of empire: global capitalism and the app economy. Games Culture. https://doi.org/10.1177/1555412020937826

Norton MI, Mochon D, Ariely D (2012) The IKEA effect: when labor leads to love. J Consum Psychol 22:453–460

Nunley C (2021) People in the Philippines are earning cryptocurrency during the pandemic by playing a video game. https://www.cnbc.com/2021/05/14/people-in-philippines-earn-cryptocurrency-playing-nft-video-game-axie-infinity.html. Accessed 15 Jan 2022

O'Donnell C (2014) The developer's dilemma: the secret world of videogame creators. MIT Press, Cambridge

Óskarsson PJ (2012) Eve online as meaningful virtual world. In: Molesworth M, Denegri-Knott J (eds) Digital virtual consumption. Routledge, New York, pp 206–211

Page R (2012) Leveling up: playerkilling as ethical self-cultivation. Games Culture 7:238–257

Palma FC, Trimi S, Hong S-G (2019) Motivation triggers for customer participation in value co-creation. Serv Bus 13:557–580

Petrovskaya E, Deterding S, Zendle D (2022) Prevalence and salience of problematic microtransactions in top-grossing mobile and PC games: a content analysis of user reviews. In: CHI '22: ACM CHI conference on human factors in computing systems April 30–May 6, 2022, New Orleans, LA

Ritterfeld U (2009) Identity formation and emotion regulation in digital gaming. In: Ritterfeld U, Cody M, Vorderer P (eds) Serious games: mechanisms and effects. Taylor & Francis, London, pp 204–217

Rodgers P, Mazzarella F, Conerney L (2020) Interrogating the value of design research for change. Des J 23:491–514

Ruvio A, Belk R (2018) Strategies of the extended self: the role of possessions in transpeople's conflicted selves. J Bus Res 88:102–110

Salen K, Zimmermann E (2003) Rules of play: game design fundamentals. MIT Press, Cambridge

Sartre J-P (2021)[1943] Being and nothingness. Washington Square Press, New York

Siddiqui S, Turley D (2006) Extending the self in a digital world. In: Pechmann C, Price L (eds) Advances in consumer research, vol 33. Association for Consumer Research, Duluth, pp 647–648

Statista (2021) Video Gaming & eSports: mobile is king. https://www.statista.com/markets/417/topic/478/video-gaming-esports/#statistic2. Accessed 17 Dec 2021

Tyni H, Kultima A, Mäyrä F (2013) Dimensions of hybrid in playful products. In: Proceedings of the 17th international academic MindTrek conference: making sense of converging media. Association for Computing Machinery, New York, pp 237–244.

van Doorn J, Mende M, Noble SM, Hulland J, Ostrom AL, Grewal D, Petersen JA (2017) Domo Arigato Mr. Roboto: emergence of automated social presence in organizational frontlines and customers' service experiences. J Serv Res 20:43–58

Vandermerwe S, Rada J (1988) Servitization of business: adding value by adding services. Eur Manag J 6:314–324

Wang J, Zhao X, Bamossy G J (2009) The sacred and the profane in online gaming: a netnographic inquiry of Chinese gamers. In: Wood NT, Solomon MR (eds) Virtual social identity and consumer behavior. M.E. Sharpe, Armonk, pp 109–124

Weijo H, Bean J, Rintamäki J (2019) Brand community coping. J Bus Res 94:128–136

Weststar J, Dubois L-E (2022) From Crunch to grind: adopting servitization in project-based creative work. Work Employment Soc. https://doi.org/10.1177/09500170211061228

Wilson D, Sicart M (2010) Now it's personal: on abusive game design. In: Futureplay '10: proceedings of the international academic conference on the future of game design and technology, pp 40–47. https://doi.org/10.1145/1920778.1920785

Zagal J, Björk S, Lewis C (2013) Dark patterns in the design of games. Proc Found Digit Games 2013:39–46