



# Social media use in digital product development

Opportunities and challenges of IT-enabled co-creation in the video game industry

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## **Abstract**

*Information Technology (IT) enables organizations to involve consumers as co-creators of new products. By facilitating increased interaction between consumers and developers. IT allows consumers to influence and tailor product designs, but also allows developers to make use of distant knowledge to enhance and extend their product offerings and marketing. However, while much is said about the promises of IT-enabled co-creation, little is known of the strategic challenges associated with such IT use. To address this gap, we drew on IT literature to conduct a qualitative case study of IT-enabled co-creation in four video game development firms. In particular, we tried to understand how IT is affecting relationships between consumers and developers and when and why IT can be strategically used to enable co-creating coalitions in development processes. In so doing, it became clear that the promises of IT-enabled co-creation are associated with key strategic challenges. In particular, we identify three challenges that organizations must address in order to harness the strategic value of IT-enabled co-creation: the silent majority, quality assurance and managing expectations. We conclude this paper by discussing the future of IT and digital product development as well as implications for research and practice.*

# 1. Introduction

IT is increasingly blurring the line between consumers and developers (Laursen, Salter, 2006, Reichwald, Piller, 2009). While conventional approaches to product development assume that suppliers produce goods and services, which consumers later purchase and use (Vargo, et al, 2009), IT enables developers to see consumers as co-creators toward new products. Traditional product development (PD) was developed by using closed innovations (Chesbrough, 2003) without any use of co-creational value. The products that were developed could be seen as objects of less significance such as washing machines and heat pumps and gave no room for consumer customization (Främling, Nyman, 2008). The later strategic use of IT enables developers and consumers to interact during each stage of the product design and product delivery (Payne 2008, O´Hern, Rindfleish, 2010), which provide developers the opportunity to derive rich information and ideas from the consumers (Occhicupa, Friess, 2004). Digital products gives the consumers the ability to alter products to fit their requests. For example, the mobile operating system Android that might be dependent on complementary products and services can still empower the consumers to customize their experience by choosing what products and services they are using and in what way (Svahn, 2012). Similarly, Minecraft is a conventional product in the sense that there is only one original version of the game that consumers are able to purchase, however, through the modification (mod) community, consumers are creating their own versions of the game and in return their own unique experiences. To this end, research on digital product development highlight the need to treat consumers as co-creators of value (Roser et al. 2009, Piller, lhl 2010). IT is a powerful tool to build trust and foster co-creation and has become a mass media vehicle for consumers sponsored communications (Helchmen, Cohendet, 2011).

IT affords digital product developers (DPD) key means to take advantage of the consumer-based co-creation (Pralhad, Ramaswamy, 2004). By allowing consumers to contribute feedback and rich information in real-time, developers get access to strategic means throughout the production development (Occhicupa, Friess, 2004). This engagement with consumers and their co-creational value can be seen as “free labour” (Banks, Potts, 2010) and is created via joint activities and interaction between developers and customers (Vargo, et al, 2009). The co-creational value offers new opportunities towards improving the product development and marketing with the use of word of mouth (Trusov, Buckling, Pauwels, 2008) which was not possible during the traditional PD. But while much is said about how IT enables such processes, extant research is silent around the associated challenges. In this way, the literature fails to provide a clear picture of how the use of IT can blur the line between developers and consumers and turn the relationship into strategic business value. In particular, the literature falls short in explicating key requirements for such IT use and the problems they must overcome as they seek to harness IT-enabled co-creation of value. To this end, we ask the following question: how is IT affecting relationships between consumers and developers of digital products and at what time can IT be strategically used to enable co-creational value in the development processes?

To answer this question, we drew on Social Media (SM) strategy research to conduct an observation in what way internet technologies (IT) and SM-strategies can create co-creation between developers and consumers (Ahlgvist, et al. 2008, Arvidsson, Holmström 2013, Kaplan 2010). SM strategies introduce the notion of how developers may utilize these different SM platforms to carry content, which consumers in return can consume (Berthon, Pitt, Plangger, Shapiro, 2012). In particular, this perspective allowed us to observe how SM-strategies usage affects the popularity of a product from consumers and that it is something DPD should embrace. By conducting a series of interviews with the perspective of a qualitative case study (Eisenhardt, 1989) we could research the use of SM-strategies from different DPD. The series of interviews was conducted towards video game developers (VGD) where we could observe challenges with the implementation of SM-strategies into the PD. Against this backdrop; we argue that game developers must re-think the development process. In particular, we argue that VGD must alter their SM-strategy in which consumers are involved into their development process.

In what follows, we first describe the notion of digital product development and its use of SM-strategy with the usage of related research in this area. After that, we accumulate empirical data in our findings derived from a set of interviews with developers and consumers. We later conduct a discussion in regard of the related research and the empirical data to find the challenges DPD faces to implement social media strategies. Against this backdrop, we discuss solutions for the challenges that needs to be resolved before social media strategy can become a pristine practice for the digital product developers.

## **2. Social Media Strategies for Digital Product Development**

### **2.1 Digital product development**

Traditionally PD moved like a relay race, with one group of specialists passing the baton to the next group. The project went sequentially from phase to phase: concept development, feasibility testing, product design, development process, pilot production, and final production (Nonaka, Takeuchi, 1986). Products were created by using closed innovation, in which developers use only ideas generated within their boundaries, characterized by big corporate research labs and closely managed networks of vertically integrated partners (Chesbrough, 2003). The flow of communication went only from developers to consumers and not the other way around since the consumers was seen as an “outside the firm” and added no value to the creation (Prahalad, Ramaswamy, 2004). This restricted closed process made it challenging for market researchers to find the core they are trying to satisfy, remembering that their products will be successful only if they deliver value. Developers would therefore ask a representative sample of customers for input of their products using strategies such as surveys, qualitative interviews or focus groups (Piller, Vossen, Ihl, 2012, Kotler, 2002). Unfortunately, consumers’ needs are often idiosyncratic and hard to accurately measure. As a result, most new product failures are attributed to a product developers’ inability to accurately assess and satisfy consumers’ needs (Susumu, Piller, 2006). One way traditional PD can be referred to as physical products such as washing machines, heat pumps and cars, just to name a few (Svahn, 2012). The majority of traditional products can be classified as unintelligent or “dumb” objects, which give no feedback to the user during its use. The washing machine washes clothes, the car rotates the wheels and the heat pump keeps the temperature in the house. Every product ensures what it is supposed to do but leaves out the possibility for consumers to interact with the product on a more advanced level such as change its behaviour, add features and modify it to fit their individual preferences. Today we can see traditional products getting quite more advanced digital control systems showing the “desired state” instead of using a direct mechanical link, but the argument still stands (Främling, Nyman, 2008).

“While traditional PD are trying to satisfy their customers with traditional producer-consumer model, in which value was created by a producer and purchased by a consumer for consumption, has been replaced by a model of co-creation of value, a process in which value is created through joint activities and interaction of providers and consumers” (Vargo, et al, 2009). This digital product development relies on the notion that it provides novel business challenges as they unsettle and disrupt a closed industrial model of expertise and move it toward an open developing system (Banks, Potts, 2010). The common understanding of the developing process builds on the observation that DPD rarely innovates alone and that development is a result of interactive relationships among producers, users and many other different institutions (Laurse, Saluter, 2008). Traditionally, developers produced goods and services, and consumers purchased goods and services. Today, consumers can engage in dialog with suppliers during each stage of product design and product delivery (Payne, 2008). With the help of new tools like the

internet, DPD allows firms to enhance the corporate growth and profitability by allowing consumers to take a more active role in the PD (O'Hern, Rindfleisch, 2010). With internet as a new platform, developers can also increase the speed and persistence of consumer engagement as interaction happens in real-time thus improving the position to reach many influential consumers who provide rich information and ideas (Occhicupa, Friess, 2004).

DPD develop products, which invites user generated content to their products. One example of this are mobile operating systems such as Google's Android platform. By providing the software development kit (SDK) it allows consumers to develop their own applications to Android-powered devices, which greatly improve the quality and experience of the original platform. Svahn (2012) argues that it is not surprising that platform designers direct their attention to application developers, rather than end-user. Android is largely designed to make the life easier for developers by providing generic building blocks and proven solutions at the architectural level. The more application the platform receive, the greater chance it has to compete with other companies. Another example of a digital product is "Steam workshop" which is a distributive platform that allows you to purchase and download video game via the internet. Instead of purchase a physical copy of the game, Steam offers over 2000 video games directly available via the internet. The consumers interact with each other on the community and also maintain dialogue with developers, giving them feedback and suggestions (Valve, 2014).

DPD are noticing the rise of popularity and usage of a product such as mobile operating systems and video games if the design leave room for the co-creating aspect for the consumers (Hong, Vivian, 2013). Traditional PD differs in the sense that a product is developed and released as one complete fixed product. Compare that to digital product development, which allows consumers to give feedback during the development and also alter and continuously add features, and develop the product after its release. Prahalad, Ramaswamy (2004) argues that the paradigm shift in the PD is occurring due to developers realizing the key to gain competitive advantage is the high-quality interactions that enables individual consumers to co-create unique experiences for their products. Consumers might also feel more excited and attached to a product if the developers embrace the participatory culture. By participating within the varied aspects of the production process, co-creators not only find their work meaningful and gratifying but it also becomes a part of their biographical identity, which they feel proud of (Hong, Vivian, 2013).

With the possibility to take advantage of the consumer participation, DPD can use cocreation when it comes to marketing and have a big advantage over traditional PD. To generate buzz during the traditional PD, pre-release advertising has a critical role, and game developers devote a substantial portion of their advertising budget prior to a new game release. In order for product developers to find their target group and make them interested in a product, they had to release the advertisement everywhere and hope that their target group would find it. But with the use of internet DPD can locate their target group using SM and other means. This usage of SM in general and microblogging can

enhance the effectiveness of a buzz-release approach (Marchand, Henning-Thuran, 2013), thus heavily decreasing the time and budget it took to advertise traditionally. With the use of co-creation and consumer participation, consumers often spread the word about a product themselves if they feel excited about it. Various SM platforms, many of which are completely independent of the producing/sponsoring organization or its agents, magnify consumers' ability to communicate with one another. This has caused a paradigm shift in all aspects of consumer behavior, and has bestowed consumers with power towards DPD they have not previously experienced in the marketplace (Manghold, Faulds, 2009).

The lines between developers and consumers are being more blurred when the participatory culture and co-creating aspect are invited in new products and platforms. As the article stated earlier, traditional PD produced goods and services, and customers purchased goods and services. Today, customers can engage in dialog with suppliers during each stage of product design and product delivery (Payne, 2008). One section of digital product development that has taken advantage of co-creators is the video game industry where consumers actively participate during the development process as well after the games official release. The game *LittleBigPlanet*, developed for Media Molecule and released in 2008 for the Playstation 3 relies heavily on consumer-generated content. Consumers receive tools to create new worlds, playable levels and puzzles, which they share to the community in order for others to play and experience (Banks, Potts, 2010). With only a few pre-made levels by the developers, the game flourished with a constant stream of consumer-generated levels. One step further from that is the modding community which with the use of SDKs are able to create entire new objects, worlds, missions and design changes, just to name a few. Steam workshop, reported that over 10,000 mods has been created for the game *Skyrim* just nine months after the official release (Hong, Vivian, 2013). This massive amount of user generated content works as "free labor" (Banks, Potts, 2010) and demonstrate how active participation can greatly affect the experience and possibilities from the original project.

Modding can be observed outside the video game industry as well. Berthon, et al (2012) mention the complication with international markets where users from different locations might like or dislike a product. If some people dislike a product, there is a change that users will modify the product to better fit their expectations. One example is the Japanese robotic dog *AiboPet* that was very popular in Japan but was not appreciated in America. Unhappy with the original product, consumers modified it and gave it new features such as making it perform different dances.

We can observe today the usage of co-creators in DPD is becoming an interesting topic for developers today, especially within the video game industry and where it is not only useful for development of a product and modding but also when it comes to marketing. With the help of internet, consumers can spread the word of product through word of mouth by using different SM platforms (Trusov, Buckling, Pauwels, 2008). IT such as SM are powerful tools to build trust and foster co-operation among online communities. Helmchen and Cohendet (2011) as well as Amin and Cohendet (2004) describes a community as: "A community can be broadly defined as a "gathering of individuals" who

accept to exchange voluntarily and on regular basis about a common interest or objective in a given field of knowledge”. With the building trust between consumers and developers when it comes to development and marketing, it is clear that the bond between the two is getting closer. The internet has become a mass media vehicle for consumer-sponsored communications (Helchmen, Cohendet, 2011) and we can see today that creative consumers, with the help of web 2.0 and SM has placed the phenomenon cocreation into hyper drive (Berthon, et al, 2012).

Against this backdrop, we still do not know to what extent the lines are blurred between consumers and developers and to what length the communication extend between the two. Internet and SM are bringing the two sides closer together and enables co-creation and active participation (Philler, Vossen, Ihl, 2012) but it is unclear to what extent the cooperative relationship stretch and where the line starts to blur. The extant research on co-creation and user generated content describes the phenomena as the optimal developing system, however, we don't know in what way consumers and developers uses it today. That's why we conduct research about SM strategies and the co-creating value it brings to continue get a better understanding of the relationship between consumers and developers.

## **2.2 Social Media Strategy**

There are multiple definitions for the term SM, such as the one by Kaplan and Haenlein (2010): "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content". Kietzman, Hermkens, McCarthy and Silvestre (2011) uses the following definition: "SM comprise both the conduits and the content disseminated through interactions between individuals and organizations". By studying these definitions it becomes clear SM is an ever changing environment: "... delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation" (o'Reilly 2009). In this context, we choose to understand SM as: "SM is the interaction among people in which they create, share or exchange information and ideas in virtual communities and networks" (Ahlqvist et al. 2008).

There is not only multiple definitions as to what might be called SM, there is also multiple definitions for the various types of SM that exist. By applying a set of theories in the field of social processes and media research, Kaplan and Haenlein (2010) made a classification scheme with seven different kinds of SM that is being allowed through IT: collaborative projects, blogs and microblogs, social news networking sites, content communities, social networking sites, virtual game-worlds and virtual social worlds. We will focus on the types of SM called virtual game-worlds (e.g. World of Warcraft) and content communities (e.g. YouTube) in this paper. The reason for this is that the research relates to this area and that the empirical data is gathered from video game developers and SM actors who create video game related content on YouTube. By classifying SM into these different types, it also

becomes clear that this opens up for new types of SM to arise. Thus, the definitions for SM are not written in stone, and new types of SM may arise as well as some of the current ones may become less relevant and eventually fade away.

When considering SM, consumers consume media in completely new ways in comparison to before SM existed. SM facilitates new forms of user interactions. This is posing both opportunities and challenges for firms who must, if they wish to be successful in the current marketplace, adapt to this ever-changing environment. One way, in which firms must adapt is that they need to be present on SM: “The media (e.g., YouTube, Facebook, and Twitter) are essentially vehicles for carrying content”. Berthon, Pitt, Plangger, and Shapiro, (2012). Thus driving firms’ value through making this vehicle of content into a vehicle for co-creation of new products. Against this backdrop we introduce the notion of how firms may utilize these technologies in order to prove strategic, in other words in what ways firms may use SM strategies. (Berthon, Pitt, Plangger, and Shapiro, 2012).

While early IT were based on a broadcasting paradigm, where consumers were strictly consumers and not able to affect the content, SM technologies are built around ideas of cocreation and user-generated content (Ahlqvist et al. 2008, Arvidsson and Holmström 2013, Kaplan and Haenlein 2010) In this vein, SM strategies can be defined as the use of SM technologies: “... a firm needs to develop strategies that are congruent with, or suited to, different social media functionalities and the goals of the firm” (Kietzmann, J. H. et al. 2011). For example, David K Brake and Lon Safko (2009) showed that “one application might be to develop a blog to involve customers in discussing your products or services”. Similarly Jenkins (2009) showed: “... the kinds of co-creative activities that constituted media fan subcultures in the 1980s and 1990s are now incorporated into the strategies of ‘big media’ companies themselves; so that, even in dominant media institutions, feedback and convergence between the everyday or identity-based practices of audiences... is becoming routine”. Brake and Safko (2009) mention the importance of firms evaluating themselves: “The social media strategies you employ will depend greatly on how you evaluate and define your business”. This is why it is important that firms evaluate their business, employ the SM strategies that are best suited for their products or services and adapt this to the ever-changing environment that is SM.

The fact that companies are using these strategies in combination with new technologies poses both challenges and opportunities. One challenge that becomes prominent when firms employ SM strategies is that some firms might not know how to use these in an effective manner. One example of this is online communities: “Most online communities created by businesses fail because ‘most businesses focus on the value the online community can provide themselves, not the community’” (Worthen, 2008). The opportunities that this is opening up for is mainly related to increased interaction between consumer and developer: “... to use these technologies to improve internal communications, collaboration, corporate knowledge management and access to fresh ideas and talent both within and beyond the traditional organisational walls” (Mortleman, 2011). This phenomenon is getting increasingly common and it allows consumers of a product or service to affect it through co-creation. In order to understand the data from

our findings, and the discussion in which we will discuss different types of co-creation in relation to research and findings, we will explain some of the major types of co-creation that is being enabled through IT.

SM is not only making the communication between consumers and developers more present. It is also making the communication between creators of co-created material more present. One example of this is the forums in which modders (creators of mods) may upload mods, rate and discuss them. One of the most popular forums for this kind of content is Planet Minecraft: “Joining the official Minecraft site, the fan-created Planet Minecraft site hosts a variety of forums. At Planet Minecraft, players and modders find advice for working through in-game problems, tips that enhance play, and directions for creating and using thousands of free game mods” (Beggs 2012). The interaction between creators of consumer-generated content allows consumers to help each other out, which in turn may lead to better content. This is not the only positive aspect of these kinds of forums. Forums such as Planet Minecraft means that it will be much easier for consumer-generated content to spread to other users. Beggs (2012) continue: “Because players may live in different time zones and even on different continents, they often write out their discoveries and modifications in game forums or on fan sites before or even instead of verbalizing them”. This means that if something is regarded as good quality it will probably spread quickly to a large number of people. But at the same time, if consumer generated content of some description is regarded to be of lesser quality, it will probably receive negative feedback from other users and not get ample proliferation.

One type of co-creation that exists thanks to SM and is increasingly growing at a rapid pace is the one that is present on the video sharing site YouTube. YouTube allows anyone to upload video content as long as it follows the guidelines that is set out by the YouTube, thus making the number of videos uploaded everyday massive (Google Inc., 2014). This act as a kind of co-creation since anyone may create and upload content. Even more so, if one choose to study how the consumers of video games and the developers of video games are using this platform. The amount of video game related material that is being uploaded is huge and the viewer base for that kind of content even larger. Video game related content on YouTube is so popular that it has more viewers than some regular TV-channels on an everyday basis (Burgess, J. Green, J. (2009). This means that many VGD want consumers to play their game, record it and put it on YouTube since it offers a unique form of marketing. Due to the fact that YouTube uses ads, the people who upload material may get revenues based on the number of times they have been viewed and clicked. Thus making the concept of video game related material on YouTube a win win situation for most parts. The fact that consumers of video games take their time to record, edit and upload videos on YouTube counts as a form of co-creation as well. (Burgess, J. Green, J. (2009).

Another type of consumer co-creation that becomes prominent when taking SM into account is the one known as in-game items. This occurrence is presented in many modern multiplayer video games. One way, for consumers to create this content is through Valves’ Steam Workshop: “The Steam Workshop is a central hub of player-created content and tools to publish, organize, and download that content into your games” (Valve Corporation, 2013). It relies on the notion that consumers who enjoy a multiplayer experience may want

to create material which they are able to use and/or share to other players. One example of this is Valve's Team Fortress 2 (TF2): "TF2 allow you to create and submit new items... for consideration to be incorporated into the actual game" (Valve Corporation, 2013). This is being made possible due to the consumers who are able to rate the various items that is being made, and the top rated items will get incorporated into the game. Whether you are able to create content though the workshop for a specific game or not, depends on the developers, who may choose whether to allow this kind of co-creation for their game or not. It is, however becoming more and more common that developers choose to use this service: "Each of the 109 titles use the Steam Workshop in different ways, such as for sharing maps, in-game items, custom scenarios, full game conversions, character skins, new game modes, spells, puzzles, quests, characters, language packs, and much, much more... Over 1,100,000 maps, items, and mods have been posted to the Steam Workshop..." (Valve Corporation, 2013).

The next type of consumer co-creation is crowdfunding: "With crowd funding, an entrepreneur raises external financing from a large audience (the "crowd"), in which each individual provides a very small amount, instead of soliciting a small group of sophisticated investors" (Belleflamme, P. Lambert, T. Schwienbacher, A. 2013). Thus enabling consumers to invest in a product or service, which they find interesting before it, is even released. This is enabled through a "third player", which is empowered by IT: "A third player is the crowdfunding organization, which brings together those who want to deliver the new initiatives using crowd funding mechanisms and those who may wish to support such initiatives through their investment efforts" (Ordanini, A. Miceli, L. Pizzetti, M. 2011). Some of the major crowdfunding sites include such sites as Kickstarter, Indiegogo and Crowdfunder. Video game developers is one of the major actors in the crowdfunding scene, allowing the smallest independent developers to fund their game.

Another type of co-creation that is becoming increasingly common, thanks to IT, is when VGD use consumers during their development process, thus helping them develop the game: "in the early phases of the development of a video game, the firm uses tester communities for beta testing, mainly to search for errors, bugs or misspecifications in the program" (Burger-Helmchen and Guittard (2008), and Llerena et al. (2009)). This is usually enabled through developers releasing an early version of their game. The two most common types of releases are: Alpha, which means that the game is feature complete and Beta, which means that the game is asset complete (Valve Corporation, 2013). These two types of releases may both be distributed through Early Access, which means that they are being offered in an unfinished state to the consumers so that they may derive feedback to the developers. Banks, J and Potts, J (2010) had this to say about the co-creational relationship between consumers and developers in the video game industry: "Each affects the other such that consumer cocreation emerges as an evolved process in respect of practices, identities, social norms, business models and institutions of both market based extrinsically-motivated exchange relations and culturally-shaped intrinsically-motivated production relations".

It is clear that consumer co-creation is increasingly growing and being enabled in many different ways, as well as that it is opening up for numerous possibilities and challenged.

One of the tools that consumers are “armed” with, which Prahalad & Ramaswamy (2004) is speaking of in their paper, is none the less than IT. IT has allowed consumers to interact with DPD in completely new ways, improving their influence over the development process. Thus one may very well say that consumer co-creation exist thanks to IT.

### 3. Methodology

When studying the research it became clear that there is information lacking. Mostly about the relationship between DPD and their consumers. Also in what ways DPD use SM strategies to promote consumer co-creation. Yet another thing we wanted to know more about was the roles that SM actors pose in this environment. In order to complement and strengthen the research we choose to interview representatives from the video game industry as well as two major SM actors. Thus, we propose the following methods to collect and analyse the data relevant for doing this.

This study takes place within the context of IT and digital product development. In particular, we studied various IT that allow consumer co-creation in the video game industry. Within this context, we want to study the opportunities and challenges that this pose, as well as to what extent this development is taking place. We want to do this because the research is generally positive to this, which we feel might not be the complete picture. Except this we wish to study to what extent IT is enabling consumer co-creation and what the real life examples look like.

Our research question is: “How is IT affecting relationships between consumers and developers of digital products and when and why can IT be strategically used to enable value co-creating coalitions in development processes?” To answer this question we will explain the development process and identify factors affecting the production and challenges that arise as a result of the way in which IT have been incorporated into development. To this end, we base our study on the concept of a qualitative case study (Eisenhardt, 1989). We will use an orientation that is interpretive (Walsham, 1995, 1993), and base the field studies on the principles set out by Klein and Myers (1999). This approach is valuable in order to get a greater understanding of the processes that is prominent, at the same time it is allowing for further research in the area.

We gathered data through a series of interviews. The subjects consisted of representatives from four major Swedish video game developers, Adval<sup>1</sup>, Delta<sup>1</sup>, Mohe<sup>1</sup> and Paice<sup>1</sup>. As well as two SM-actors who are active on- and have a large viewer base on YouTube. They were chosen since they play a major role in the video game industry and represent two different parts of the spectrum (Yin, 1989). Interviews were semi-structured and consisted for about 40 minutes respectively. Audio was recorded and later transcribed, notes were taken as well. The representatives from the video game developers consisted of one CEO, one senior game designer, one business developer and one community manager. Since the subjects represented all major sections in a video game firm it gave us a broader insight into their involvement in the development processes and how it varied between them. The interviews with the SM actors were conducted via mail. Clark<sup>1</sup> answered in text, which made the answers easy to study. Jonathan<sup>1</sup> answered through a YouTube video in which he talked about the subject for approximately 7 minutes. This was later transcribed and analysed.

Data analysis involved reading the field notes and transcribed data. We were able to see patterns posing a clear picture of the development process, thus recognizing factors

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<sup>1</sup> These names are aliases to keep the subjects anonymous

affecting development and the challenges that arise as a result of the ways in which IT have been incorporated into development. By applying a grounded theory, we employed the method of axial coding (Strauss & Corbin 1998). We divided the answers into nine open codes, which the subjects talked about (fig. 1). By doing this, we were able to compress those open codes into three axial codes: video game development, user generated content and power of the community. We were able to come to one conclusion as to what was the major theme of which the subjects talked about, our selective code: co-creation.

The idea behind doing this, is to see patterns as to what the subjects' talk about in the interviews. Thus being able to note the themes that bear the most significance. These themes will then be used in the discussion and conclusion of this paper in order to be able to compare our most relevant findings with the research. Which in turn will allow us to come up with answers to our research question.

Open codes	Axial codes	Selective code
The development process SM strategies	Video game development	
The relationship between developer and consumer YouTube	User generated content	Co-creation
The relationship between developer and SM actor		
Positive aspects of community Negative aspects of community	Power of the community	

Figure 1. Axial coding of the interview subjects

## 4. Findings

In this section, we present empirical data gathered through interviews with DPD and SM actors. We do so by dividing the data into three major subjects. We explain each subject and present relevant data. The reason for doing this is to present the different parts thoughts on the subjects and to be able to use this data in the discussion. By doing this, we are able to compare this data with the research we gathered, thus presenting different opportunities and challenges this pose for DPD using SM strategies.

### 4.1 Video game development

VGD face several challenges during the development process. In order to understand these challenges one must first understand the development process. What we found, when analysing the data, was that the development process varied greatly between the different firms, but also depending on what kind of game they were developing. When asking Paice about their process we got the following answer: “It is different for different games. The historical strategy games we know very well and have been making for 15 years straight... When we are making new games though, we try to find out whether it is fun or not. And if it not is fun at that point we will close the project and do something new instead”. Thus stating that it is easier for a developer to create a game which they know and if they have been making similar titles before. Mohe stated: “It is very much alike for all our projects actually. We have weekly meetings in which we talk about what to do the upcoming week... We barely know what is going to happen in a couple of months’ time... We try to meet the demands where they are needed...” Stating that they are using the same or similar development process for all of their games.

Adval stated this in relation to development: “For our big scale projects we work with a publisher... Then the development starts which is divided into four major phases: We have a concept phase in which we put forward the basic design. Then we have a pre-production phase in which we test the game mechanics. After this we go into production, which basically means “let’s build everything” and after this we go into post production which consists of bug fixing and final polishing... during this time we usually do some marketing as well...”. Which would mean that they have a fixed development process for all their big scale projects. Delta had this to say about their development process: “We listen to trends... when it comes to free to play games we don’t really plan ahead with the development. With larger games, we always start by pitching an idea. If we get the ok to develop the game, we distribute the work to designers, programmers, sound people and everyone are working on the game simultaneously... with free to play, gamers can play the game for years after the release so we continuously develop DLC’s, patches and other stuff...”. Even if the process differ between the firms and what product they are developing, it is clear that they all use a continuous process.

The types of PD that is being mentioned above are mostly traditional, although there are some exceptions, such as free to play. When a free to play game is released, consumers may get it for free. The way these games are able to survive is through purchasable items. These items may include such things as upgrades, weapons and new worlds. Whether the items give the consumers any advantage or not differs between items, but also between games.

Some items are strictly cosmetic. This changes the way PD is handled since the game are constantly getting updates with new versions of the game and items. As mentioned earlier by Delta regarding free to play, they do not plan ahead and continuously develop content. This continuous PD differ from traditional PD since then VGD would develop a game and then release it as a finished product. While free to play will get updated continuously as long as there is interest in the game. “The Hunter, our hunting game have no completion. We can add more hunting territories as long as there is still interests about the game” (Adval).

Another way to ensure consumer satisfaction is through Alpha and/or Beta, which usually happens during the final stages of the development process: “Alpha is the point where the game should be feature complete and no new functions can be added to the game. Beta is when the game is content complete where all the graphics, sound etc. will be finished” (Adval). This is one way for VGD to release an unfinished version of the game, which the consumers may play and present feedback. This feedback will then be used to improve the game: “We collect quite a lot of data at an early stage. We have different types of beta testers and focus groups from experienced users which derives feedback and so on” (Paice). There are two major versions of beta testing. The first one is called “open beta” in which, anyone interested, may play the game and give feedback. The second version is called “closed beta” where the VGD give a selected amount of people the opportunity to test it before everyone else: “We have thousands that help us (closed beta) with feedback. Then, we usually go out with an open beta time to time and tell the user to test the game.” (Paice). The concept of open beta is something that is relatively new, which have sparked a debate about whether it adds any value to the VGD or not. What may be the problem is that some consumers play the game only because it might be free and because they are able to so before release, making their feedback questionable. One might argue that closed beta will produce better feedback since the consumers who play those games are chosen by the developers and sometimes paid to do so: “Customer feedback is really valuable. But, I would like to see it go back to the old way. I think the old version of beta, as in true beta, was valuable” (Jonathan).

VGD have to tackle different problems during the design process, everything from budget issues to design choices in order to develop the game in the restricted deadline. To this end, VGD have learned certain tactics. At Paice, for example, the challenge of making sure a game is fun have led production to become divided into different sections: “We divide the development process into small steps to eliminate the risk so we don’t lose a lot of money on something that in the end won’t be fun to play.” Through such tactics, VGD are able to navigate within budget constraints, while developing games that consumers praise as fun and interesting, thus increasing sales.

Even if the PD works different between different games and VGD, they all rely on the consumers’ satisfaction in order to become successful. Therefore, consumer feedback is vital during the development. VGD invite consumers to do this through Alpha and Beta. Lately however, VGD have started to look for other means to gain knowledge and consumer feedback by maintaining a dialogue using SM strategies. With consumers being able to

interact with VGD, it accelerates the exchange rate of feedback and ideas, helping the firms to grow faster as well as becoming more popular.

VGD are increasingly using SM, either as a mean to develop their products or keep in touch with their consumers. When interviewing the VGD it became clear that all of them use SM, although to different extents. Some have just started using SM, which Adval states: “We’re trying to use more and more SM. It has been a learning curve for us”, while some rely on SM in order to keep their firm growing: “internet is a prerequisite for us, to possibly be able to make growth we’ve made” (Paice). A good example on the growth that is being made possible by the usage of SM by VGD is one that Paice gave us: “... we grew very quickly between 2009 up until now, in average 36 percent every year... This was because of the fact that we earned money faster when we sold through the internet, and we were able to keep more of the margin when selling”.

There are many different ways in which VGD use SM during the development process, or when a product is finished. Some of the platforms that are being most frequently used are YouTube, Facebook, Twitter, Twitch and official/unofficial forums. One way in which VGD may use SM is to try to make the gaming experience better: “We’re not developing for the internet, but we’re using internet to improve the gaming experience” (Paice). Thus firms are able to use different types of SM for different things: “We’re very active on Twitter, that’s where we’re the most visible... we have really big communities on various forums, although we’re not as active there... we’re using Facebook as a site to post news and link to our other sites... we’ve also incorporated Twitch into Minecraft. Which makes users able to stream directly from the game” (Mohe). It becomes clear that the different types of SM opens up for many opportunities: “... we’re getting feedback straight from the consumers through our discussion forum, where we have almost 700 000 users, so this is an important part of our communication with the consumers. We are using YouTube to communicate with our consumers, upload videos, receive feedback etc. We’re also using Twitch to stream video game content from our offices” (Paice).

The constant interaction between VGD and consumers through SM has changed the relationship between the two. As mentioned in the research section, the consumers are not strictly consumers anymore and may use SM in order to interact in different ways with VGD. The relationship often consists of feedback from the consumers to the VGD, but it also opens up for other opportunities, such as marketing and events: “We try to listen to feedback from the users. It can also be a good way to let the gamers do the marketing. I also like to use SM with consumers. We have different events on different SM channels to keep our community strong” (Adval). The relationships between consumers and developers is gaining more and more importance for both parts. This in combination with the fact that consumers may affect a development process or product through SM is making us question the traditional way of viewing a consumer.

## **4.2 Consumer generated content**

With the help of SM, consumers are in a new position to affect a product during the development but also after its initial release. During the development of a game, consumers

might not have control over the tools and the actual development of the game. However, with the aid of SM, consumers may raise their voice if they feel something should be changed. VGD have started using SM to gain this information early in the development in order to easily make changes to satisfy the consumers: “We often read forums and SM posts and make changes if we feel it is of importance”. One example of a VGD listening to their consumers happened in the game Mad Max where the dialect of the main character did not match the one in the movies: “Our voice actor had an American dialect when he originally was from Australia... We didn’t expect the kind of backlash we received... so we talked it through and agreed to change the voice actor to one with an Australian dialect” (Adval).

One major aspect of co-creation may be observed after the games initial release when consumers start to create mods for the game. If VGD release tools for consumers to create mods, the game may instantly grow in popularity, playability and sales. With mods, users may create new content such as items, worlds, quests, graphical improvements etc. One example of a very popular mod was the multiplayer mod for Just Cause 2: “We’ve sold 6 million copies... a big part of that is due to a multiplayer mod which truly is impressive... In a game with not a single line of multiplayer code, the modders developed a mod where thousands people are able to play together at the same time... that sparked a word of mouth spread on SM which blew the steam sales to the roof yet again” (Adval). Another example of a popular mod is this, stated by Paice: “In our game Crusader Kings 2, the most popular mod is a Game of Thrones mod in which you can play as all the rulers in the entire Westeros which is really cool and we actively support that”. He continues: “We have one full time employee that only works with the modding community and make sure that everyone has the tools they need” (Paice).

Minecraft is yet another game that have a vast amount of mods developed by the consumers to enhance and expand the experience of the game. Some mods become appreciated by both consumers and developers which in turn may lead to incorporation of them into the actual game: “Sometimes we incorporate consumer mods into the game... we felt we wanted to create the mods ourselves, so we contacted the creators and discussed how we should go about solving it” (Mohe). It is clear that the modding community contains a lot of talent so it is no wonder why VGD seeks future employees straight from the community: “We have 3-4 guys working here which we recruited from the community. They are working on a server mod... we recruited them since we are working on something similar and we felt they could help us out” (Mohe).

The increasing use of SM by VGD has undoubtedly changed the traditional roles of developer and consumer. Consumers are increasingly viewed as co-creators and developers as facilitators. But except these, more traditional roles, there are also new roles which are taking shape due to this development. One of these roles are the one, which we like to call SM actor. These people cannot be classified as consumers or developers simply because they are neither, or arguably both. They are located in the grey zone in between developers and consumers and use SM as their workplace. One example of a SM actor is the one many like to call the YouTuber, a person that makes their living uploading material on the video sharing site YouTube. Since we are writing about VGD, we will focus on the kind of YouTuber who upload video game related content in this part of the paper. As this type of

SM actor both create content, in the form of video game related videos, and consume content in the forms of the games they play whilst making their videos, it is difficult to call them either developers or consumers. We managed to get in touch with two major SM actors in the form of YouTubers who both create video game related content. One of them for entertainment purposes, and the other one for both entertainment and informational purposes.

In order to understand the relationship between VGD and SM actors we decided to ask both parts about what these relationships look like. We started off with asking Mohe about this: “We have good relationships with many YouTubers, mostly those who make technical videos. I’m aware of the fact that many of the developers, here at Mohe, are studying their channels, looking for things of relevance“. He continues telling us about a specific relationship: “There’s this guy, who makes very technical Minecraft and mod videos. We’ve sometimes sent him things so that he were able to test them out and see whether they work or not.” Except the coalition through YouTube, the subject tells us about another way in which they use SM actors: “We have our own convention, Minecon, and try to get the SM actors to come there as well... it shows, that it is them who are the stars of the convention, because the customers are lining up to get their autographs”. He gives us another example of how the YouTubers have gained fame through their work: “One of these Minecraft-celebrities have made parts of a Lady Gaga music video together with her...”

When asking an employee at Paice about their relationships with SM actors we got the following answer: “We’re in contact with most of the YouTubers who play “hardcore” games... We also work with some major YouTubers as well as some who are a bit smaller, but who are fans of us as a developer. So we have weekly contact with about twenty YouTubers”. When asking about how they use YouTubers to help develop their games we got the following answer: “We’re in direct cooperation with YouTubers, who are a part of our beta-groups... With the example Europa Universalis 4, we have several YouTubers who already are making videos on the game. So we are inviting them to be a part of beta tests before the game is out.... This allows the YouTubers to show their viewer base how the game or expansion works... This saves us work and money related to marketing and at the same time they are making money and getting views... it is a fantastic synergy in that way. A real win win situation.” This is a good example of how both parts can be profitable when interacting with each other. Another example of how developers may use SM actors is the one we were given at Delta: “We don't give them any early access but we talk to them a lot. If we want people to play our game early, we invite them to play at our office. They will play for a couple of days, testing the game so we can fix bugs etc. later on.” This is yet another way for VGD to use SM actors in order to improve their products. After hearing, what the developers had to say, we chose to ask a SM actor about the relationships. The person we asked is the co-creator of a major YouTube channel and had this to say: “Honestly our relationships with everyone in the industry from the largest publishers to the smallest indies have been really awesome. I couldn't ask for a better and friendlier sector to be working in - gaming is my passion and I'm delighted to be doing this every day” (Clark). When we asked whether they get many requests by developers to play their games, the

answer was: "...we get a lot of requests to play games, and are delighted to support indie games that we love. If a game really allows our personalities to shine through (such as sandboxy building things like gmod (Garry's mod) or multiplayer competitive stuff) then it tends to be a lot stronger on YouTube." The relationship between VGD and SM actors seems to be about supporting each other, as long as it is profitable for both parts, which it more often than not seems to be. We have received very few negative responses about this kind of relationship. Although some developers might choose to use certain SM actors, which suits their products better. At the same time, the SM actors will choose to play the kinds of games they like the most and find the most profitable.

### **4.3 Power of the community (positive and negative)**

When analysing the data from the interviewees it became clear that the co-creational value between consumers and developers is regarded as an important developing and marketing tool. With this backdrop, we asked what the VGD viewed as positive aspects of co-creation as well if the developing method sparked some negative results. We found that the VGD generally had positive sentiments for Co-creation and user generated content. Paice stated: "User generated content is the new holy grail" and noted that "We can say that the world most played games, at least in the west are built on mods, all of them. Dota which was a mod for Warcraft 3, Counter strike which was a mod for Half-life". It is clear that mods developed by the consumers is a fantastic tool to increase popularity and sales of games. It is obvious why VGD design their games to support the modding community due to the possibilities, such as increased sales. As stated earlier in this paper from Adval with their game Just Cause 2: "We've sold 6 million copies... a big part of that is due to a multiplayer mod which truly is impressive... In a game whit not a single line of multiplayer code, the mods had developed a mod where thousands people can play together at the same time... that sparked a word of mouth spread on SM which blew the steam sales to the roof yet again".

Apart from the positive aspects of SM in combination with the development process, we asked about the marketing aspect as well. We asked them in what way they view people who upload gameplay videos and reviews to SM platforms such as YouTube, in return we received following answers: "We are very positive to the whole trend... they are allowed to freely use our material to create let's plays". He continues with "... it saves marketing work and money from our side and the YouTubers receive their views and make money... it is a truly win win for both of us" (Paice). Adval states: "... it is very positive. I cannot say I see anything negative about it... If people want to show a game they're playing, it only shows that it is a good game". Minecraft is a good example of using SM for marketing purpose since they have not done any major marketing themselves, they state: "My cousins only watch let's plays on Youtube. They do not watch TV anymore... I think it is really great. It has helped Minecraft incredible much as well the people who created the videos... it is sort of a symbiosis. It grows all the time. It is very exciting" (Mohe).

Though all of our interview subjects were positive about the increasing use of SM in combination with VGD, there were some thoughts as to what might be viewed as less

positive about this development. One thing that may be viewed as negative when VGD are opening up for co-creation and feedback from consumers is that your voice might not be heard: "... the problem with you having influence is that everyone else does as well, and your voice is just one in a crowd." (Jonathan). This also shines through from the developer's side: "It is important though to remember that the vocal consumers only represent a small part of the community so you can't always listen and do exactly as they wish due to the silent majority." (Adval). The fact that all the consumers is receiving the possibility to make their voice heard, is also making it harder for developers to actually hear what everyone has to say and receive all the relevant information they need in order to make their products better. This in combination with the fact that not everyone is using the means to communicate with developers is making it harder for VGD to actually know whether what the information they actually receive is equivalent to what everyone thinks or just the ones that actually are making their voice heard. When developers are in the situation, in which they have a constant relationship with their consumers they must think about what they say to them and how: "It is easy to become misunderstood. They may take what we write very seriously, when we might have written it on the go and not thought too much about it" (Mohe). It may also be hard to spread the information that developers want to spread if there is only one thing on the consumers mind: "99 percent of all the questions we receive are questions about when the next update will be released, no matter what we write about. Even if we're not writing about Minecraft, which is the question we'll receive" (Mohe).

Another problem that becomes relevant when VGD are opening up for co-creation, in the form of mods, is that the consumers may create material that is inappropriate in various ways. Paice had this to say about this occurrence: "In Hearts of iron there were some mods which contained Nazi flags and concentration camps". It also becomes easier for the consumer to create material or products, which they charge for. This kind of commercialization is something that is being viewed as negative by the VGD: "Something we view as negative is when people sell Minecraft or parts of Minecraft. This is because we want to be the only source who sells Minecraft. Which I view as completely natural" (Mohe). He continues with talking about this: "... it is not very fun when people host Minecraft servers and then sell in game items. They claim that it is donations, but if it is donations everyone should have access to the same things and it should be something extra that you donate. But yet they sell in game items, level systems and quests..." Except the commercialization that occurs in games some people choose to produce merchandise which they charge for: "... we don't think it is okay when people print a million fake t-shirts... after people have done this they might complain to us and ask why the t-shirt got ruined after one wash... So this is something we have noticed as a bigger and bigger problem, fake merchandise. But it also shows that people want that kind of stuff" (Mohe).

One issue with releasing games early and opening up for co-creation is that players don't receive a finished product: "... with early access, you pay up front for something you don't have any idea about." (Jonathan). It is also becoming relevant from the developers side: "This is why we've a bit suspicious about crowd funding such as Kickstarter, because we don't want to absolve too many promises too early during the project. Because we know that sometimes you have to cut out certain things, and that is not fun, and then you might

risk making people disappointed” (Paice). He continues with telling us about their general view on crowd funding: “... crowd funding is really to buy a pre order earlier”. Although there are many upsides with co-creation, when asking both sides of the spectrum, it is obvious that this also poses challenges.

## **5. Discussion**

In this paper, we set out to research DPD usage of SM strategies in order for them to enable co-creation and consumer generated content into PD. Based on the extant research and the collective information from the empirical data, we are able to see implications with the method, which deters co-creation from being an optimal developing system. This became clear after we observed the empirical data, which contrasted considerably from the positive sides of the extant research. In order to implement co-creation into the developing process, some problems need to be resolved before it becomes the optimal form of DPD.

### **5.1 A Social Media Perspective on Digital Product Development**

The new way of developing products by incorporating IT into DPD differs substantially from the traditional way of PD. Traditionally, suppliers produced goods and services, and customers purchased goods and services (Payne, 2008). The traditional PD developed the product in house with close innovations without extensional use of consumer input. This caused many difficult choices for the developers since they had to develop a product and hope they created interest to their target group of consumers. Looking back to the video game industry, in order for VGD to develop a popular product, they had to listen to trends and do extant market research to maximize their chance of success. Comparing that to video game development today where VGD can constantly keep an open dialogue with their users during the entire development process lets us observe a major improvement of consumers' satisfaction.

We received the notion from research that DPD sees consumer participation as the optimal form of PD, and yes, to some degree that is clearly the case. Trusov, Buckling and Pauwels (2008) states that co-creation can aid the developers with marketing, using the notion of "word of mouth" across SM platforms through IT. With consumer-generated content, consumers accordingly to Banks, John and Potts (2010) can be seen as "free labour" since they are the group that creates mods for video games and applications toward mobile operating systems. With the use of SM strategies, Beggs (2012) mention the power of co-creation on internet forums such as the fan-created site Planet Minecraft where consumers can share ideas and mods for the game Minecraft. The possibility for co-creation and consumer-generated content is possible due to internet, web 2.0 and SM-strategies used by both consumers and DPD. This technology offer the possibility for consumer and DPD to have an open dialogue during the development process, which has the potential to improve the quality of the product. DPD opportunity to instantly contact consumers via SM reduces the need to conduct closed focus groups, qualitative interviews and surveys, which are known for being unable to accurately measure the users need (Piller, Vossen, ihl, 2012, Kotler, 2002). The use of SM-strategies is what drives consumer-generated content and co-creation forward. Without it, there would be no possibilities to maintain the close relationship between consumers and DPD. IT such as SM are powerful tools to build trust and foster co-operation among online communities (Helmchen, Cohendet, 2011, Amin, Cohendet, 2004), however, little was known to what degree co-creation is being used by developers and consumers. With the aid from the empirical data, we can see the

opportunities of co-creation and consumer-generated content. Everyone we interviewed stated that co-creation is a great way to communicate and develop with consumers. Co-creation has been described as the optimal product development and caused games to increase in sales when, for example, certain mods becomes immensely popular.

## **5.2 Three major challenges**

Although co-creation and consumer-generated content used with SM-strategies seems like the optimal developing system, not every developer saw it as the main feature in their PD. They all had their standard development process and used co-creation on the side to aid the production. While the extant research mostly praised co-creation, the information we received from the empirical data indicated several challenges with the method. We found three challenges that appear to be most noticeable from the data: (1) The silent majority (2) Quality assurance (3) Managing expectations. We will conduct a discussion about these three problem in detail to better understand the implications they carry.

### **5.2.1 The silent majority**

It is clear that thanks to SM-strategies, consumers and developers opportunity to maintain a constant dialogue during the developing process has increased immensely compared to traditional PD. IT and SM-strategies are powerful tools to build trust and foster co-creation among online communities (Helmchen, Cohendet, 2011). With this communication, VGD can easier listen to idea suggestions and feedback to improve the quality of the product. The invitation for co-creation value into the developing process is something we can observe becoming greatly appreciated for DPD these days. To quote Nohria and Ghosal (1997): “the real leverage lies in creating a shared context and common purpose and in enhancing the communication densities within and across the organization’s internal and external boundaries.” It is clear that VGD are trying to use more SM-strategies since they relies that IT have a profound effect when it comes to the growth of the firm

There are however some implications with using co-creation in the developing process that might affect the outcome of a product in a negative way. With the ease for consumers to make their voice heard on IT, it causes a problem often called “The silent majority”. This phenomenon occurs due to the spectrum to which consumers interact. One minority group are very vocal, sharing links, post their thoughts and replies to other consumers on SM-platforms. The other side are the majority of the spectrum and are not equally active (Mustafaraj, et al, 2011). This implies the risk for VGD to collect all their feedback from SM since the majority of their consumers do not share their thoughts about the development of their game. If the vocal minority are very active on SM and ask for changes for features in a production, it is challenging for VGD to listen to them since they have not heard from the silent majority. There could be a possibility that the silent majority are satisfied with the production and do not see a reason to change it. It is important for VGD to remember that the vocal consumers only represent a small part of the community. VGD must therefore be careful not to always listen to the community and preform changes according to their feedback; they have to find a balance they are comfortable with.

### **5.2.2 Quality assurance**

As mentioned earlier, there are many positive aspects of consumer co-creation and we can observe that it is something both developers and consumers agree upon. Content such as mods and other consumer-created material have greatly diversified the digital product development scene, making areas such as the video game industry more popular than ever before Beggs (2012). Prahalad and Ramaswamy (2004) explains how the market may be viewed when considering co-creation: "... the market resembles a forum for co-creating experiences". Some "mods" are so popular that the mod makers are able to earn money on their work, which in return fund continued development. We can see that mods often have its own community and many mod makers are more famous that the VGD are. There is no doubt that mods are important in the video game industry since many VGD have full time employees that only works with the modding community. When viewing co-creation as a forum for co-creating experiences in combination with the positive aspects for the different parts as a result of co-creation, it becomes clear that it mostly is a "win win" situation.

Although, there is a problem related to this development. When consumers are able to create content and then release it by themselves, it is hard for developers to control the kind of material that is being released: "... if control is non-existent or inadequate, the communities can push the development of the activities in a different direction than the one expected by the firm, or the communities can capture all created value without any benefits for the firm" Burger-Helmchen and Cohendet, (2011). While the extent of quality assurance (QA) differs between various companies, some use it to a lesser extent or not at all. With QA, we mean the way developers work to ensure the quality of a product, in this case in relation to consumer-created content, but also services hosting video games (e.g. Steam). VGD described the fact that some consumers created mods, which contained content such as concentration camps and other inappropriate features. We see this as a very good example at describing a case, in which consumers created unexpected (from the developer's side), inappropriate content, which they were able to release. Another example of when consumers used co-creation in an unexpected way was when consumers were running modded minecraft servers and were charging for different in game items. This is an example of how consumers may use their ability to mod a game in order to create value for them self, without any benefits for the developer (Sotamaa, 2010). The problem here is that if a firm QA is inadequate or non-existent, it allows for these types of behaviour from the consumers.

### **5.2.3 Managing expectations**

Some DPD such as video games can rely on methods called crowd funding and early access, which allow consumers to engage with the development before its official release. With crowd funding, consumers can contribute money to a video game before the development starts. By doing so, VGD do not have to seek a major publisher in order to receive their budget for the game. They can receive their budget from consumer-contributors directly. One positive advantage of using crowd funding instead of relying on a publisher is the liberation, which allow VGD and consumer to have more control over the development. A publisher might demand certain aspects of the game to be changed before they will give VGD a budget. During the development, the VGD might also be bound to contract, which

forbids them to fully support the modding community. Crowd funding is good in that aspect since it gives the consumers and VGD more control to create a game to their preferences. In order to get the funding, VGD must describe with the help of SM to the best of their ability how the game is going to look and behave (Hui, Gerber, Greenber, 2012). The reward for the consumers who contributed often get the opportunity to be part of the early access testing stage of the game development. Early access is a method used by some VGD, which allows consumers to test and early version of the game to provide feedback about bugs and needed changes before the game officially gets released. The testing mostly occurs when the game is nearly finished during the Alpha and Beta stage.

This allows consumers to choose what products are being released to some extent. Since the consumers are able to do this, it is more likely that they will appreciate the products that is being released and therefore consume more, which in turn is good for the developers since they will make more money. Subsequently the consumers will receive products, which are better suited to them thanks to their involvement in the development process, at the same time as the companies who are producing is receiving help producing their products and earning more money. When this is the case, it is a “win win” situation for all parts. It is also a great way for lesser-known developers to be able to fund their product if they do not have any sponsors or are indeed able to fund the game themselves. Most of the time this is because consumers, more than not, fund a product and not a developer. So it does not really matter who you are as a developer as long as you are trying to get an interesting enough product funded. Games that might struggle to find a publisher due to lack of interest from a majority of consumers can still be made if the small minority contribute funding. One example is the game “Broken age” by Double Fine Productions that wanted to create a point and click puzzle adventure game. The franchise has lost a lot of interest, however, there was still some devoted point and click consumers who loved the idea to see another game in that area. With the help of Kickstarter, Double Fine Productions raised enough money to create the game without help from publishers (Kickstarter, 2013).

The problem with crowd funding is VGD challenge to maintain the management of expectations. In order to excite consumers to fund a game development, VGD must describe what the game is going to look like, how it is going to behave and what you can do in the game. This creates implications since games often change directions during the development, some parts of the game might be removed to save time and money. This can cause disappointment with consumers since they thought they funded the game that originally was presented. VGD must be cautious with crowd funding such as Kickstarter since they don't want to make too many promises about the project too early since they often have to cut parts out because they're becoming unusable or boring, In doing so, they risk to make people disappointed. This problem occurred with the game Broken age after reports came out they was struggling for money and had to make drastic changes of the game in order to finish it (Kickstarter, 2014). There is also cases where crowd funding campaigns have failed. One example of this is the game Towns that got released through Steam greenlight as early access. Although many consumers invested in this game and was expecting a finished product to be released once it was done, they did not receive their money back when the game was abandoned in an unfinished state

(Towns, 2014).

Another example from a Kickstarter campaign is the iPen. It was promoted as “the first active stylus for iPad!” and received a funding of 162 333 dollars, although their pledged goal was 35 000 dollars. Which is much more than they needed in order to produce their product. Once the product was released, it proved to be of very poor quality and most “backers” were dissatisfied. The Verge considered the iPen to be the worst stylus for the iPad when conducting a test on many different styluses (Verge, 2012). The consumers did not receive any refunds and though the developer chose to produce a better version of the pen called iPen 2, none of the “backers” of the first one received a lower price for that either. (Kickstarter, 2011).

As mentioned earlier in the article, when consumers feel like they are participating in a product development, they feel that they bear significance. They find co-creational value meaningful and gratifying, subsequently if DPD fail to deliver, consumers most likely will be disappointed (Hong, R. Chen, V. 2013).

## 6. Conclusion

This paper set out to gain a better understanding as to what extent the lines between consumers and DPD are being blurred. With the knowledge from the extensive research about product development, IT and the co-creational value, we set to get a better understanding about how consumers and developers use co-creation and consumer generated content during and after the developing process. We interviewed four major Swedish video game companies and two successful SM actors in order to understand their views on co-creation and SM-strategies. After analysing the extensive research and the empirical data from the interviews, we could see both opportunities and challenges that co-creation poses. With closer observation of the empirical data, we could see that the generally positivity for co-creation does not paint the whole picture. It does, in fact pose some challenges that needs to be resolved before the method can truly be seen as the optimal development process. We conclude this paper by discussing the three challenges presented in the discussion. With the aid from the extensive research, we could construct possible solutions to these challenges.

### 6.1 Implications for practice and research

Given what we have observed, there is no surprise why co-creation and user generated content are the major tool for DPD. The challenges that were discussed shows that they need to be resolved before one may see co-creation have a bigger role in DPD. Based on the discussion, we argue following possible solutions for these implications.

For example, when it comes to the silent majority. We propose one solution, which could make it easier for VGD to get an improved overall feedback and ideas from consumers without relying on the SM forums. Today, in order for consumers to offer feedback about a product they need to use the forums. VGD receive their information from forums and SM posts and change features of a product if they feel it is of importance. We saw one video game developer use their forum, which have over 700.00 users as an important tool for communication with their consumers. From what we have observed, it is not so simple to only have a forum for communication since most forums requires the consumers to create an account, using their email, creating a username and password before being able to post feedback. This seemingly easy process discourage many consumers to interact with PD and offer them their valuable feedback. We therefore propose the option to instantly derive feedback whilst consumers are playing the game. When a game session is coming to an end and the consumer goes to exit the game, the question if the consumers want to offer feedback can display on the screen. With a fresh mind of the game and with an easy form to fill in, we believe consumers will easily give feedback in that manner than creating an account, logging in to a forum and create a new post before being able to make their voice heard. We believe this would increase the value of co-creation and active participation (Philler, F. Vossen, A. Ihl, C. 2012).

The implication with quality assurance is due to that it is almost non-existent. Therefore, we propose the following solution: in order to improve the quality of co-created content and allow all the involved parts to serve on the material that is being produced, the companies that today have non-existent or inadequate QA must improve this. By doing so,

they will be able to control what is being released to a much greater extent, but also help the consumers who are developing co-created content by having constant contact with the community. We do not think that QA should act as a restraint when it comes to consumer created content. It should rather work as a guideline as to what the consumers may create and the companies should encourage this behavior, but also help the consumers to create this type of content through constant communication with them. This is something that is being done to some extent today, but we believe it should increase even more. If it were to do this, we believe that it would decrease the amount of “bad” consumer generated content and increase the amount of “good” content that is being produced and released.

Lastly with the implication with quality assurance we propose that developers should get better at managing this kind of expectations. This could be achieved by promising less, or just what the developer deem completely possible. But it is not only the developers who should think about how they approach crowd funding and early access, the consumers have an obligation as well, it is, after all, a case of two parts helping each other out. That is why it is important to think very closely before they fund a product through crowd funding or early access. With early access, you pay up front for something you do not have any idea about so if consumers are more selective about what products they fund, they are less likely to get disappointed. Crowd funding is really just about buying a pre order earlier, it is not so advanced people would like to think. When it comes to early access, we propose that it should be completely free of charge. That is because more consumers would play the game (since it is free) which in turn means that more people would share their feedback to the developers. This would lead to better games since the developers would receive more feedback about their product. Once the early access period is over and the game is released as a finished product, it can be become charged for as usual. If the developers used crowd funding, as well, to help fund the development of their product, those consumers who funded the product should receive the complete version for free.

## **6.2 The future of co-creation**

It is clear that digital product consumers today are called co-creators by DPD, SM actors and in various research. But we ask ourselves: is this really the case? Alternatively, are consumers called co-creators by developers in order to give a false sense of contribution and therefore increase sales? We believe that consumers can be considered as co-creators to some extent today. But it varies greatly between different products and the way developers view consumers. In order for consumers to truly be considered co-creators, they must be considered co-creators by the developers. This is the most important aspect of co-creation. We think that this is not always the case. We believe that some consumers are lead to believe that they are co-creators, but in reality, their influence over a product or development process is limited or non-existent. This could be viewed as a way of marketing by developers, in order for them to make more money. In many cases, there are still limitations as to what a consumer is able to do in relation to what a developer are able to do. Which should not be the case. We are not happy until consumers of digital products truly are considered co-creators, which we believe will be the case in the future; we are simply not there yet.

Is the consumer's ability to be a part of a development process blurring the lines between consumers and developers? Yes. That is the simple answer. But as mentioned above, it is not as simple as that. We are living in a time in which the DPD scene is ever changing. Although consumers are able to participate in the development process of digital products to a much greater extent than was possible before, consumers are still not truly co-creators. What might make that happen? We believe that the way development software that is being offered to consumers will help this development. A good example of this is the very popular video game engine Unity, which has its own development software. A free version of this software is being offered to everyone. This is just one of many examples of how developers are opening up their technology for their consumers. Which is great, but is just starting to happen. What effect will this have? Since the software to develop a game is being offered for free, the only thing anyone need in order to create a game is a computer. Anyone can create a game today. Something that never would have been possible five years ago. Since this is just starting to happen, it is difficult to say exactly what effect it will have on the industry. But to say that the line between VGD and consumers is going to get increasingly blurred do not seem like a stretch of the imagination.

Since anyone is able to create a game and developers are opening up more of their development process to their consumers, it is not hard to believe that creation of independent games is going to increase. This might affect the traditional way of creating video games since you do not need a company and a large team of people to create one anymore. In what way may this affect the current VGD that do indeed develop in the more traditional sense? We believe that most of the games released in the future will be indie-games, thanks to the fact that they are becoming both cheaper and easier to create. The traditional VGD will almost certainly act as publishers and facilitators of the games that are being released, buying the games they deem the most interesting, thus helping the indie developers to fund their expenses. We therefore propose that indie developers will act as developers for most games being released in the future and that the current video game companies will act as publishers and facilitators for some of these products. Considering the fact that anyone can create a game and therefore be an indie developer, this would mean that the people considered consumers today might very well be considered developers in the future. This would not only blur the lines between current consumers and developers, but remove them completely.

### **6.3 Implications for future research**

In this paper, we take a step further into better understand the relationship between consumers and developers. With the use of IT, we have researched how DPD and consumers can create co-creational value to a digital production by blurring the lines between the two (Payne, A. 2008). With the gathering from the empirical data, we can better understand to which extend the lines a blurred today and how DPD use co-creation and user generated content during and after their product development. With the observation from the extensive research and the empirical data, we argue that co-creation with SM-strategies face challenges that needs to be resolved before it can become an excellent developing tool. We got a better understanding of the negative aspect of co-

creation from the empirical data and came to the conclusion that SM strategies and co-creation still needs to be developed to fit right in hand with DPD and consumers.

Nevertheless, our research has some limitations. The empirical data lacks information from a quantity perspective, which limits the broader field of research around the subject. The interviews were designed as interpretive interviews with standardized, open-ended questions to facilitate answers, which could easily be analysed and compared. This was good since we could easier get more honest and real answers from the VGD, however, it cause us to limit the amount of VGD and SM-actors we could interview. We invite further research to continue where we left off by gathering more empirical data in this area from DPD and SM-actors. By doing so, we can get an even better understanding about the use of SM-strategies and co-creation and how the lines are blurred between the two.

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