Since the 1980s the digital game industry has grown into the world’s biggest entertainment business. The broadening of the scope of gaming and gamers has required a transformation in design approaches, as the gameplay-centric design is not adequate alone. A holistic design approach and understanding of the gaming experience as a whole, including the design of game related services offer an extremely important competitive advantage for making sustainable and profitable gaming business. Attempts to designing game services can be seen in the field but these efforts are debatable from the perspective of service design and may be misleading. Service design as a theory or set of methods and tools is basically an unknown topic in the game industry. The objective of this thesis is to clarify the meaning of service design in the context of games and to introduce how it could be utilized in the game industry when developing game related services. Additionally, the thesis aims to create a visually clear and understandable concept of a service design toolkit suitable for use by game developers.

The thesis presents a review of service design processes and tools, game design processes and tools and ways to design user’s experiences in both of these fields later on comparing and analyzing their similarities and differences. The knowledge gained from the literature review guides the designing of a tentative game service toolkit concept.

The results show that the best way to utilize service design methods and tools in the context of game industry is to modify such versions of them, which takes into account the background and knowledge base of game developers. However, it should be noted that understanding and beginning to use service design tools correctly is a very challenging task without help from a professional service designer. By carefully choosing a narrow but comprehensive selection of service design tools, the coherency and clarity of the resulting design process can be ensured and those who are interested can easily find more information about each service design tool.

Keywords:
service design, service experience, toolkit, game services, game design, processes
The first chapter introduces the context of the thesis and research done during the process. It sets out the background for the digital game industry growing into the world’s biggest entertainment business in less than forty years and enlightens the challenges of creating satisfying and holistic gaming experiences for the players by utilizing current game design methods but also the possibilities that service design could offer to the field. This leads to defining the focus and aim of this thesis: to explore the potentiality of using service design for developing game related services, which are the main building blocks of the player’s overall gaming experience. Could service design offer means to include players in the design process in a deep manner? And which service design methods and tools would improve these processes? Based on these reflections two research questions are presented and an overview of the structure of the thesis process is provided to explain how the research is carried out.
THE GROWTH OF DIGITAL GAME INDUSTRY AND SERVICES IN GAMES

Since the 1980s videogames have risen into a multi-billion dollar industry and digital game culture has grown from adolescent male-oriented entertainment into diverse serving of experiences for different functions. The ways and means of use are becoming largely multifaceted as digital environments have become available for wide audiences and increasingly part of people’s everyday lives. Digital games are available online and off-line and can be purchased for various platforms and devices. Digital games are beginning to attract similarly heterogeneous audiences as TV shows, movies or even books, and players’ average age has been constantly rising in the past years. Different kinds of players are served with different products but also with possibilities for diverse activities inside of the games. The broadening of the scope of gaming and gamers requires a transformation in design approaches: the gameplay-centric design is not adequate alone, a holistic design approach and understanding of the whole gaming experience, including the design of game related services, is essential to satisfy user needs and to develop businesswise lucrative games. Player satisfaction has to be considered at all points of gaming experience from the purchase to disposal of the game. (Kuutti 2010)

A stronger involvement of players in the design processes of digital games and services related to them is important for the diversity of game cultures and for the future of game industry in overall. The current state of digital game development is broadly criticized for its apparent lack of originality in design solutions. The reason is twofold: by number most of digital games are still designed to appeal a rather narrow, already existing player demographic, but while the rise of casual games aimed for wide and heterogeneous audiences was predicted to challenge this design approaches it ended up being equally as limited but just in a different ways after being merged with free-mium monetization models. Casual game designs have kept safe and circling around familiar themes, topics and game elements, short play sessions, and always positive game experiences to attract as large player masses as possible in order to maximize the revenues gathered from the few paying customers. This situation is continually developing to better as the design of new games more rarely rely on the traditional model of individual game author or small teams designing games based on their personal likings and vision. The use of player centric design approaches, mainly practices of play-testing with the focus group at different stages of the game development, is becoming more common and understanding is increasingly derived from potential new audiences. (Ermi and Mäyrä, 2004)

Kris Grafts, chief editor of Gamasutra, The online free version of Game Developer Magazine (2015) writes that mobile market is as tough as ever, being a mature, crowded market. About 500 games were launched every day on iOS in 2014, and 250 a day on Android. Of course most of the titles are overlapping and launched in both stores, but these numbers give a perspective to the size of digital games industry and the competition between companies. Wide global success demands new and fresh innovations, out of box thinking and pure luck. The success of the game is inevitably uncertain, as marketing money cannot guarantee similar recognition as a game that spreads among the people as phenomena. At least at the moment such phenomenon is in practice impossible to generate purposely, and due to that unknown independent game developers occasionally launch hugely successful game titles. Therefore understanding of the user, in this context player, his expectations, experiences, and his role in the game design processes offers an extremely important competitive advantage in order to do sustainable and profitable gaming business.

Service design as a theory or set of methods and tools is basically unknown topic in the game industry. The term has gotten even more confusing since Games as a Service (GaaS) philosophy started to rise after development of the cloud based service provision. The term has ended up meaning many different things for different people to a point where use of term “service” is even deemed dangerous by some players and developers. The two most often referred definitions for Games as a Service are; 1) a way to run games in servers giving developers a new level of agility to navigate in the complex world of devices, markets and business models for their games, 2) a philosophy underlining the holistic nature of game experience and taking an interest in the quality of every element of that experience from the initial game teaser to gameplay combats and bug reporting system. Is one of them the truth or is it somewhere in the middle? According to Stickdorn & Schneider (2011) service design is a holistic perspective taking into account the factors that need to be done to make service running, considering both the service user and the service provider, but still focusing always on the user. (Stickdorn and Schneider 2011, Bidaux 2011, GameSparks 2015)

Service design itself is relatively young field of study and practice still on 2015 but it is growing and developing fast and being used increasingly among multiply industries. Service design tools, methods and processes are quite complex and some studying is required when first getting to know the field. To be able to understand and use it for one’s own purposes. To be usable among digital game developers and game companies the tools need to be redesigned into a form that is understandable in the context of game design. This thesis explores the potential of using service design to involve players in a deep manner into the digital game service design process and to find ways to improve these processes by utilizing service design methods and tools. As the primary aim of games is to serve existing, inspirational and valuable experiences to players, understanding the whole chain of experiences from the first exposure to the game to the disposal of it is in the core of designing games. If the game developer can understand and acknowledge all aspects of user’s experience including the services supporting and being related to the gameplay experiences, he has a possibility to make holistic design decisions towards fulfilling players all needs and expectations.

PERSONAL THOUGHTS

I am personally interested about this subject because of my professional background. In 2012 I graduated as a product designer and 2013 I started by Master studies in Aalto, but there in between I ended up into a game graphics trainee program. As a result I have run a small serious and puzzle game studio NordicEdu with two other game developers alongside to my studies, and still do. My interests is therefore strongly in game research. However, already during my product design studies I had an interest toward service design and I deepened my understanding of it during the Master’s degree studies. I combined these to and there was by research topic. In addition to the topic being really hot in the game industry right now, it felt as a natural continuation to by professional development as a industrial designer.

During my master studies in Aalto University I have become strongly convinced about the benefits of user-centered design. It enables creating products and services and their combinations, which games most often are, which offer a real value to the user. In fact, I believe that value creation is the core for making successful products and services, game related or not. Game industry has not always acknowledged the benefits of user-centered design because of the deviant environment of game industry compared to most other industries as game designers actually did represent their au-
The focus of this thesis is to study existing game design tools, game experience mapping tools, and service design tools. The review of existing literature and existing tools to focus is on service design tools that help to visualize the user journey throughout all player experiences, the scope of the research is mainly in service design. The main focus is on service design tools that help to visualize the user journey throughout all of the service actions and to identify the problem points and possibilities for new game services. The thesis covers a review of existing literature and existing tools to design game related services and proposes a tentative service design toolkit concept compatible to game design tools.

The literature review aims to map current ways of digital game industry to find in-depth information about target users and player experiences, and ways on how this information is being applied to design processes. Furthermore it also explores how player experiences and game related services could be designed. Important part is also to research and discuss the concept of services in games. The review of existing game design tools, game experience mapping tools, and service design tools focus on finding similarities and differences among them but more importantly building new ideas based on the comparisons. From these ideas the concept of game industry suitable concept of service design toolkit is constructed.

The process and outcome of designing the toolkit concept is described and visualized in the work. The toolkit consists of selection of service design tools modified and then targeted for game industry purposes requiring little to no existing experience on service design methods beforehand. In the last section of the thesis conclusions are presented and suggestion on how the work can be continued in the future are presented.
This chapter explores the literature surrounding the thesis topic. The first section outlines various game design methods and tools applied to build games from player centric perspectives. The second section discusses the methods to measure and design user experiences and defines its scope for this research. It also explores existing game experience mapping tools. The third section gives an overview to services, service design and it’s tools and methods, and the relation of services and games. These together lead to the last section of literature review where all above mentioned methods and tools are compared with one another to enable the creation of service design toolkit in the following phases of the thesis.
2.1 PLAYER-CENTRIC GAME DESIGN

In less than forty years digital games have grown to offer entertainment and increas-
ingly other branches like serious games, for a heterogeneous and diverse audience
compared to the original player base consisting of mainly teenage boys. Digital games
have begun to compete for people’s attention with other forms of entertainment like
TV shows, movies or even books, as they can be purchased for various platforms and
devices, and are available online and off-line. Players’ average age has also constant-
ly risen in the past years. Variety of different games is wide and in addition games
increasingly offer possibilities for diverse activities inside of the games. Due to the
broadening of the scope of gaming and players a transformation in design approaches
is required. The often used gameplay-centric design method cannot provide a holistic
understanding of the whole gaming experience, which is needed to satisfy players’
needs and expectations, and to develop businesswise lucrative games. Therefore
a deeper understanding of players, in other words customers, is needed. (Kallima
2010)

There are a few widely used ways for game companies to gain this understanding.
The first is to benchmark the best and the most profitable games on the market and to
analyze and then follow their suit from a slightly different angle. The second method
is to develop a game, launch it and then track user satisfaction and devotion towards
the game by analyzing all available user data and changing the game based on those
analyses. The third approach is to continuously already from the beginning of the de-
sign process gather user feedback from the players and to improve the design based
on those findings. This thesis focuses on the lastly approach, the game design process
that involves the players throughout the design process.

2.1.1 FROM ACTIVITIES TO PRODUCTS AND THEN TO SERVICES

Traditionally games have spread as folklore and evolved over time being designed
anonymously and owned by public. They were social activities among people. First
proprietary board games appeared in the eighteenth century introducing the idea
of game as a product, something that could be owned and sold, and due to this first
game companies arose in the nineteenth century and brought with them the idea
of game designers. During the twentieth century proprietary games rivaled the tradi-
ional ones, and from the 1970s onwards strategies from more established branches
of popular culture have been adopted to gaming industry, digital games leading the
way. The production of game-sequels, episodes, expansions, franchises and licenced
IPs is unquestionable and popular part of modern game industry. (Stenros & Sotamaa,
2009)

Before the internet, game industry looked at games as products, physical things that
customers could purchase in a box from a store. Once the game was sold, the transac-
ton was ended. Slowly the way games were marketed and sold started to vary; games
were divided to separately purchasable parts; player purchased a boxed game and
in addition paid a monthly service fee to access the servers where the actual playing
takes place; the player paid a fee at regular intervals to be able to receive new content
from server; and just recently the player has been allowed to play for free, but is
offered to buy items within the game to deepen and diversify the experience. (Stenros
& Sotamaa, 2009)

Sotamaa & Karppi (2010) describe how the ultra competitive game industry tries
to find ways to establish on-going relationships with players. These strategies have
brought games closer to being rather services than products. On the other hand
games can be seen as platforms for all sort of upgrades and value-added services. As
games have and continue to go trough a massive transformation they are undoubtedly
sitting more towards services than pure products, but it has been debated if only the
way games are marketed, sold and brought to the players have actually been changing
towards a service economy, or have the games themselves really changed.

2.1.2. GAME DESIGN

Production of digital games is a complex and expensive multidisciplinary process.
Games developed teams consisting of different roles like game designers, program-
ners, producers, and artists. The role names are well established in the industry, even
though the job descriptions may slightly vary within a role in different companies.
The goal of a game company is to produce the highest quality games within the limits
of available resources and budget, while still limiting the risk by keeping costs as low
as possible. A core aspect of the process is that a project is developed and approved in
stages. This has a connection to the business procedure of game industry, where game
developers and investors are often funding the game projects, but also to the adoption
of iterative processes first developed and used in software development. This will be
discussed more in the next chapter of this thesis. (Adams, 2013)

In brief, the game design process can be divided into the following stages: concept
design, pre-production, production and post-production. The aim of the concept stage
is to create and refine an idea for a game. During the pre-production the idea is tested in
a multiply prototype stages. When referring to current trends of game production,
the concept design stage and the pre-production stage are in practice merging as they
both have a significant role in the planning of initial plan for the game. In the produc-
tion stage the actual development work can be started including the programming
work, visual components, level design, game missions and designing of AI (artificial
intelligence) system, just to mention some. The post-production mainly focuses on
the final polishing, testing and deployment, followed by tasks of sales, marketing and
distribution people to escort the game available to players. Increasingly the pre-pro-
duction involves also maintains of the game including bug fixing, customer support
and game patches to mention some. (Ermi & Mäyrä, 2004; Baharom, Tan & Idris,
2014)

Adams (2013) presents that there are four possible motivations to drive the game
design; market, technology, art and designer. Still none of them alone can make the
game enjoyable for the player; instead the player’s motivations and needs have to be
brought in the center of the game design process. While studying the perceptions of
player in game design literature Ohi Sotamaa (2007) noted that there seems to be
competing conceptions of the innermost nature of the activity of designing games
among the game design authors and more widely among the industry. Some desig-
ners passionately equate game design with artistic expression while others argue it
belonging to the same group with craftsmanship, engineering, research or entertain-
ment.
A link can be drawn between those disagreements and the fairly often-expressed claims that astonishing number of games is still designed primarily for game designers themselves instead of for heterogeneous player group. In many occasions professional game designers still rely on their personal experiences and intuition of market demand. A stronger involvement of players in the design processes of digital games is important to increase the diversity and originality of games and game culture and furthermore for the whole future of game industry. This situation is continuously developing to better as the use of user-centered methods and player-centric design approaches increase. This will be examined in a deeper manner in the latter parts of this thesis. (Sotamaa, 2007; Ermi and Mäyrä, 2004)

### 2.1.3 AGILE GAME DEVELOPMENT

Game development is often compared to software engineering, and same user-centered approach can be applied to it, but the requirement to entertain and to be fun separates the video game from traditional software. This requirement has no specific way to be measured: what is fun for one audience may not be for another. Therefore the requirement of fun must be supported by and validated at each stage of the development process. To success in this, games must be developed in a highly iterative manner. Agile software development is widely used iterative method, which can with minor changes be applied to digital game development.

In the late 1990's there were several software development methodologies increasingly gathering the attention of public and professionals. They had different approaches but in over all they all criticized the waterfall model, a linear non-iterative method prevalent at that time. They emphasized the close collaboration between the development team and business experts. This meant valuing the continuing communication and interaction between people, including customers, developers and users, over written documentation; tight and self-organized teams; frequent delivery of new deployable software and ability to adapt in new requirements as the project develops. Comprehensive documentation, fixed contracts and explicit planning were avoided. (Agile alliance, 2015; Beck et al., 2015)

As a result of this, in 2001 a small group of independent developers published Agile Manifesto, and introduced the term agile in the in context of software development. The most important value that agile provides is customer satisfaction. Software is produced in rapid release cycles that each build on the previous one. Each release is thoroughly tested to ensure the maintaining of quality and delivered to the customer as a measure of progress of the project. Changes of requirements are welcomed even in the late phase of development. Projects are built around motivation and empowered with support and trust. Close cooperation between disciplines ensures seamless work. (Beck et al., 2001; ISTQB Exam Certification, 2015)

There are disadvantages in agile methods as well. Especially in large projects assessment the required effort at the beginning of the process is difficult, as the direction of the product might change dramatically during the project. This can cause time and financial problems. The project can get taken off track if the customer is not sure what kind of the final outcome is wanted. As agile highlights the lack of documentation, necessary designing and documenting is in danger of being neglected. Unclear end result and undecided requirements and features are difficult to handle without strong experience. Therefore the role of senior developers is crucial if experienced resources are not available in other forms. Altogether agile methods can turn out to be quite intricate and therefore implementing them to development process won't happen without effort. (ISTQB Exam Certification, 2015)

Agile is actually a group of frameworks and methodologies sharing much of the same philosophy, characteristics and practices but all having some own recipes for practices and implementations. The three most used and applied also to game development, Scrum, Lean and Extreme programming are presented in the following. Other often-used agile methodologies are Kanban, Crystal, Dynamic System Development Method (DSDM) and Feature Driven Development (FDD), but I will leave them out of the scope of this thesis. (Versiones, 2015)

### SCRUM

Scrum (2015 - image 1) is a way to manage a project, focusing on value and high visibility of progress. Scrum is a team-based framework relying on self-organizing, multidisciplinary teams. Scrum features three roles. The development team having all required skills among them to deliver the product. The Scrum Master facilitating the entire team to progress and to be productive. Product Owner holding the product vision and prioritizing the work. Product Owner works closely with scrum team and all stakeholders to ensure the team is building right product. Scrum methods include usage of different visualization methods to track the progression of the ongoing project, including task board and burndown chart. (ISTQB Exam Certification, 2015)

The team has short daily scrum meetings where team members share what they have accomplished since last meeting, what they are working on next and what is impending progress. All development team’s work comes from product backlog, a prioritized list of ideas for the product. Product backlog refinement is an ongoing activity during a Scrum project as product requirements evolve. The product is built incrementally in short development periods called sprints, and the goal of each sprint is a shippable increment of product visualizing the progression of the project. During the sprint planning product owner presents what items should be done next for the scrum team to estimate what can be completed during the sprint and how to accomp-
lish resulting to the sprint backlog. At the end of each sprint, the scrum team meets with stakeholders to review the results and to plan the next steps. The scrum team meets also alone for the sprint retrospective to review the process and to plan improvements. After this, the team plans the next sprint or the product is finished. (ISTQB Exam Certification, 2015)

**LEAN**

The origins of lean thinking lie in production, especially in car manufacturing industry where it was developed to make production lines and organization behind them extremely effective. Lean philosophy focuses on delivering value to the customer and on the efficiency of the mechanisms that delivers that value. Anything that doesn’t create value for a customer is waste, which should be eliminated. The ultimate goal of lean is to create more value for customers with fewer resources. (Kortmann & Harteveld, 2009)

Mary and Tom Poppendieck (2003) modified the lean thinking to suit for software development environment by creating a set of principles should be followed. Eliminating waste is the fundamental principle. Waste appears in three categories: in code development, in project management and in workforce potential. Only truly valuable features for a system are selected, prioritized and then delivered in small batches. Development workflow is kept fast and efficient to maintain rapid and reliable feedback loop between programmers and customers. Prototypes are delivered to evaluation as fast as possible. This helps developers to learn and therefore build exactly correct systems. This is called amplifying learning. Lean developers will delay committing to a decision until the last possible moment to have a chance to adapt in new requirements and to have more time to research and gather knowledge before deciding. By empowering the team it can make decisions and be self-driven. A self-driven team is more efficient and ultimately creates less waste, as long as the team has knowledge and tools to be empowered. A holistic viewpoint and a shared understanding of the developed software and on going project are promoted. (Poppendieck & Poppendieck, 2003; Decker, 2010)

**EXTREME PROGRAMMING**

Extreme Programming (XP) emphasizes teamwork and equality of collaborative team but also the communication with customer. Customer works closely with XP development team to define and prioritize small units of functionalities called User Stories. The customers write user Stories as things that the system needs to do to be useful. The format is about three sentences and written in the customers’ own terminology. The development team then estimates, plans and delivers the highest priority user stories in the form of tested, working software iteratively. Customer gives feedback and provides changes in requirements and user stories for next iteration. (Versisono, 2015)

Extreme Programming is build around five key values - simplicity, communication, feedback, respect and courage. It is quite similar to scrum. Design is being kept clean and simple. Communication between customer and all team members is continuous. Feedback is gathered by testing the software from day one. Software is delivered to the customer as early as possible and as often as possible, normally in one to three weeks’ iterations. Changes are implemented as needed. Continuous feedback and success helps to build the respect among team members and therefore they have courage to respond to changes in requirements and technology. (Extreme Programming, 2015)

Agile game development can apply for example scrum and lean methods similarly to how software developers does, but some aspects make it hard for game developers to follow the agile processes. The first reason is the requirement of deep understanding of the method itself before the adaption and this understanding can often be gained only through experience. Game companies tend to be populated with fairy young employees, and therefore only big and successful companies actually have senior level employees to profoundly lead the agile development processes.

Secondly game development budgets rarely allow as many iteration cycles as the agile development really requires. Third reason is that several game companies equate agile with scrum. If the scrum is not suitable for a company, they could try some other agile methods but this is not often the result. Agile is also often understood as a completed methodology, even though it could be developed further as it’s iterative nature should encourage to do. The most misleading way to use agile however is to build game sequels as iterations incrementally following each another. This suggests that the game is actually developed without any iteration and after the player feedback the next sequel has to be started almost from the scratch. This leads to the final problem, which is the desire to reinvent the wheel. The availability of open source middleware has given software developers a leg up on focusing on their core product, but still many game companies appreciate the mentality of doing the game from the beginning to the end by themselves. This has historically been due to the desire for maximum performance, but also the artistic approach to game design. Iterative methods are widely used in the game companies, but they are rarely pure methods of agile or any other iterative methods. It is good that new practices are developed, but by getting to the core of Agile’s principles, and even more importantly, the Lean principles these problems could be solved, and iterative processes could raise to a new level. (Galanakis, 2014)

**2.1.4 PLAYER-CENTRIC GAME DESIGN PROCESS**

During his research of the perceptions of player in game design literature Olli Sotamaa (2007) also studied the issue of competing perceptions of the definition and practice of player-centered design. As a consequence to indefinite views about game design processes, approaches towards players role in the process differentiated as well. More often than not, the player is seen as a theoretical figure that the designer directs through particular design decisions. While it is commonly agreed that understanding and specifying designers’ audience is important, no mutual way to achieve this understanding is offered in the literature. Hence, players are often understood through demographics, market segments, psychological models or in-game playing styles, not as complicated socio-cultural actors as they truly are. (Sotamaa, 2007)

To clarify the problem Sotamaa (2007) sketched a list of different relations between players and designers presented in the game design literature as reflection to current design ideologies and tradition among the field. Originally these roles have been first developed by Keinonen and Jääskilä (2004) published in book Product concept design, but game scholars have renamed them and started to use them. These roles change typically during the design process and different combinations of them are involved in each design project. Nevertheless the variety of roles is surprisingly broad if compared to the literal meaning of player centric design.

**Designer as Player**

As a game designer plays varying games his game literacy builds up and the professional requirement of understanding games and players develops on the basis of personal gaming experience.
Players as Designer’s Muse
Player or player types are sources of inspiration for the design, but they actually remain very abstract and ideal.

Players as Designer’s Adviser
Different kind of play testing and invitation of feedback help designers to iteratively create games that players enjoy to play.

Players as Designer’s Patient
The designer interviews and observes players and their play sessions to identify usability problems. This kind of use of usability testing methods creates the sense of designer first diagnosing the player’s usability problems and then carefully trying to cure them.

Players as Designer
When parts of finished or still developed game structures are opened for players to manipulate, they will create content of their own. Novel innovations and diversity in the games might result when players are allowed to become co-designers.

As a result it can be argued that all game design is actually player-centered or at least player focused but players are involved in the design process in immensely varying quantities. Nevertheless there is a growing number of designers who apply iterative design methods in the game design processes inviting players to give feedback as early stages of development as possible. (Sotamaa, 2007)

Adam (2013) presents the player-centric game design as a philosophy of design where the designer envisions a representative player for the game he wants to create. The designer is then obligated to empathize with the player to be able to entertain the player. He advises designers to imagine themselves as a player as they design the game and to conduct audience research if the audience is not familiar enough to understand their preferences. To be able to understand different kind of players he introduces several ways to characterise players to certain kind of group based on several demographics and personality types. This information helps to define the audience for whom the game is aimed for and to answer what kind of game should be build for that audience.

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2.1.5 PLAYER-CENTRIC GAME DESIGN TOOLS

There is no comprehensive set of tools or methods to be used in player-centric game design, but related to user-centered design approach some tools are mentioned frequently enough to have established status. Playtesting, focus groups, prototyping, elevator pitch and game design documents belong to this group. In addition I will present a game design tool called Flowchart that has similarities to service design tools, to ease the final stage of the literature research of this thesis where the comparison of different fields takes in place.

PLAYTESTING

Playtesting is the most often used method to involve players in the design process of games. It is central method of iterative design approach. However, playtesting should not be confused with internal design review among the developers inside the organization, bug testing, usability testing or focus group testing, as it is not about identifying the target audience or tweaking the interface. It is performed to make sure the game is balanced, fun to play and functioning as intended. (Sotamaa, 2007)

There are two very different takes to playtesting exists. Playtesting can be seen as the central dynamic of the whole design process straight from the beginning of the project. Researchers who support this stance think that if playtesting is started only when fully working prototype can be given to the tester to try out it is really too late to make any fundamental changes to the game. The other perspective to playtesting is to strictly limit the testing to the later phases of the process, when large sections of the game are already playable, to save time and resources and to prevent the delay of progress of the game development process.

FOCUS GROUP

Focus groups are quick, cheap, and widely used tool in early phase of the design process. They are adaptable, being useful for gathering opinions about game concepts, but also from more comprehensive playtesting sessions. Usefulness of focus groups depends on how they are used. Focus groups can help to validate the quantitative data collected from the target audience and vice versa, as the metrics can
shed a light on when to trust and to distrust the opinion gathered from focus groups. They offer instant feedback and possibility to see reactions towards the game when observed in real time and provide priceless insights if discussed further during the play session. (Donovan, 2011)

Problems can of course occur in the use of focus groups. Often they are related to human behaviour like dominating individuals leading the whole group. Another problem occurs easily if the focus group’s opinions are blindly followed, and the result of the design process is likely to be a game that the community loves, but does not monetize. (Donovan, 2011)

However, the use of focus groups is not favoured by all game designers and game companies. There exists a strong distrust towards focus groups, as the designers seem to think that focus groups are a kind of design committee given a power to affect the game design and guiding it into the wrong direction. (Donovan, 2011)

GAME DESIGN DOCUMENT

The game design document’s purpose is to communicate the overall vision of the game, as well as the detailed plan for to the multidisciplinary production team, the publisher, the marketing team, and anyone else with a vested interest in the game. It includes different visualization methods to provide all needed details: text, wireframes, concept art, flowcharts, and reference pictures for example. (Fullerton, Swan & Hoffman, 2008)

A game designer is the primary author and caretaker of the game design document. Game design document includes everything the team needs to know about the design of the game: the overall concept of the game, target audience, platforms, marketing plan, gameplay, interfaces, controls, characters, story, world, levels, media assets to name some. Game design document is usually written before the actual production of game starts in collaboration with the whole team, but the game designer updates it throughout production. The process of writing the document is iterative and therefore the document needs to be organized modularly. Before design document can be written, the gameplay of developed game needs to be clear and coherent. This preliminary work is done by prototyping the idea through several iterations. (Fullerton, Swan & Hoffman, 2008)

The game industry has no standard format for game design document, even though there is demand for a set formula or style to follow, but the field agrees that good design document needs to contain all the details required to create a game. The design document can also include technical details, but these can also be articulated in a separate document called a technical specification. The technical director or lead engineer prepares the technical section or specification of the design document. (Fullerton, Swan & Hoffman, 2008)

ELEVATOR PITCH

Elevator pitch is a name for short and snappy description of the game idea or vision summarized to be so brief, that it describes the game concept in the time span of an elevator ride, raising the audience’s interest and desire to arrange time to hear more. It uses phrases or just words to capture the game idea in a nutshell. Elevator pitch can be aimed at investors, other team members or in a form of usability testing to target audience members to examine the potential of the concept. The pitch can be based on some other games, for example combining two unpredictable tones or styles of games together as one. Sometimes it is just one word, usually descriptive word, like juicy, which was used to concisely describe the game World of Goo. (Hagen, 2010)

PROTOTYPING

Prototyping is a method that can be implemented in various means, with paper & pencil, board game, software, and acting just to mention some ways. Prototyping aspire to model game mechanics and balance the play mechanics at the same time offering means to communicate about these aspects. As a game design tool, prototyping is most often used during the design phase or in the phase where the design needs elaboration to validate the design decisions. Basically prototyping can still be used in all design phases depending on what is the subject to prototype. Prototypes enable the evaluation of the gameplay experience soon after it has been designed and they allow rapid changes on design making the iterative design process agile and fast. Designers can prototype everything from small and detailed parts of the game design to the ways to navigate in extensive and still inaccurate game world. Prototypes are in other words working models of the game. (Hrehovcik, 2010b)

FLOWCHART

Flowcharts are diagrams composed of elements like shapes, icons, and images connected by arrows to document, analyse or communicate the design of a game. They are mostly used during the design phase of game design process and can be created quickly to offer a visual reference to the flow or structure of a game’s design. (Hrehovcik, 2010a)

Flowcharts offer a visual documentation to the game design and ways to analyse the objects and their relationship to each other. They can present game mechanics, play mechanics, gameplay experience, level and mission flow for example. They can be added to the game design document to communicate the design visually for the members of game design team. Flowcharts can be simultaneously visual but also technical yet still simplistic way of communicating a game’s design. Therefore they are easy to approach by several members of a multidisciplinary team providing a visual reference to discuss the game in its early stages. Flowcharts can also be used to test players. (Hrehovcik, 2010a)

The flowchart should show all possible paths through the game and all possible results, including how the player wins and loses and what happens if the player disconnects. Flowcharts can be used to map out all sorts of processes within your game. (Fullerton, Swan & Hoffman, 2008)

Values are embedded in games as in all other technologies and media; therefore Flanagan and Nissenbaum (2014) present values as an integral part of the game design process, game designers having power to shape player’s engagement with these values. Games express and embody human values, political and ethical, providing a compelling environment to play out our beliefs and ideas. For example justice, equality, creativity, honesty, cooperation, violence, exploitation, and greed are values, which often occur in games whether designers intend them or not.

Cambridge Online Dictionaries define values as principles or standards of behaviour; one’s judgement of what is right and wrong, and what is most important in life. Certain values are found across a great diversity of human cultures, but it is debatable whether universal values exist. Nevertheless values can be mapped and grouped in different categories based on cultures, societies and other contexts. To different degrees these values can be found to motivate all human beings representing their
specific driving forces behind many attitudes and behaviours. (Annan, 2003)

Every game expresses a set of values, which can be divided into two broad categories: designer understandings and player perceptions. Designers’ understanding consists of board range of values from organizational, economical, commercial, business, stakeholder and marketing point of views taking in consideration the public policy, industry regulations and general cultures trying to combine them with and aim them for assumed target audiences values. Player perceptions also contribute to a game’s values as their personal, cultural and situational factors may affect their game value experiences. (Flanagan and Nissenbaum, 2014)

Flanagan and Nissenbaum (2014) suggest that games should be studied as designed experiences, constructed by individuals whose decisions and skills as developers mirror their own ideological dispositions and experiences of the world. They have created the Values in Play method, a practical guide that offers ways to incorporate values into the game design process. The best practice to start considering and implementing values in game design is to analyze existing games and the embodiment of values in them. When designing a new game values are rooted in overall game design iteratively through three stages: discovering values embedded to a given game project, implementing those values in design features and game elements, and verifying that the desired values actually appear in the game. Most challenging characteristics of the method are posed by value-conscious design: resisting clichés and conflict between fun and value-conscious.

Kultima (2010) describes value-based thinking being required in game design as it is based on principles and certain approaches instead of exact engineering of experiences. This is because the relationship between design and play behaviour or player experience is not rigid by its nature. Putting certain elements or sequences of operations in the game system will not guarantee the same experience, reaction or play pattern. To design requires having an approach based on certain value assumptions and principles.

2.2 DESIGNING EXPERIENCES

In the context of this thesis, experiences are examined as something that the user can feel or be triggered by while interacting with a game or a service. To have a basis for designing user’s experiences the chapter is started by introducing user-centered design and the use of it in game industry. Then the design of user experiences is introduced in a larger scale followed by the player experience design, as players of games indeed are a specific user group among all kinds of users. Finally the designing of game experiences is discussed.

2.2.1 USER-CENTERED DESIGN IN GAMES

User-centered design (UCD) is a design philosophy focusing on the end-user’s needs, wants and limitations at all stages within the design process, to ensure easy and pleasant usage. The ISO 9241-210 standard specifically recommends six characteristics that will ensure a design is user centered: the design is based upon an explicit understanding of users, tasks and environments; users are involved throughout all design and development phases; the design is iterative and driven and refined by user-centered evaluation; the design considers the whole user experience and the working team includes multidisciplinary skills and perspectives. (Usability first, 2015)

After identifying the need to develop a system, product or service by utilizing the user-centered design methods, the ISO 9241-210 standard proposes to start the design process from the planning of the user-centered design project followed by four repeating design activities. The phases proceed from understanding and specifying the context of use, to specifying user requirements, to producing design solutions, and
User-centered design (Image 3) looks at the designing process from the perspective of how the designed system will be understood and used by a human user. Rather than expecting users to adapt their behavior for learning to use designed systems, user-centered design supports users' existing beliefs, attitudes, and behaviors in the design. Satisfaction towards designed systems increases, higher customer loyalty can be expected and better sales numbers will follow. User-centered design helps to decrease the development costs, as projects are more efficient and to increase revenue, as customers want to purchase solutions that are designed for their actual needs. (Usability first, 2015)

User-centered design is commonly used method in the software development, which is often compared to game development, and therefore it has already been utilized to some extent in the field of game design. User-centered design has several beneficial viewpoints to offer game design, as both disciplines value iterative processes, and utilize user testing to evaluate the design in different stages of process. However, game design has some differences from designing utility applications, which user-centered design aims for. Instead of emphasizing simplicity and low requirement of mental capacity, games try to challenge and entertain their players to be able to create meaningful play. Games do not aim be understood straight away and they expect players to be willing to learn new things. Satisfaction towards a game depends on the balance of challenges and player’s own abilities to play. Ease of use is not the goal. However, there is exceptions as for example the instructions, menus and tutorials of the game normally follow the traditional user-centered design approach. (Kumar & Herger, 2013; Ermi & Mäyrä, 2004)

As mentioned before, game designers have traditionally been omnipotent informants to know what the game should be like, and therefore the gap between the designer and the user is unusually deep. Allison Druin (2002) described a way to bridge the gap between the user and the designer as she studied the roles that children could have in the design of new technology. She gave children the roles of “users,” “testers,” “informants” and “design partners,” each of them shaping the design process and its outcomes. This kind of roles could be used in any kind of user-centered design processes, including game design.

However, users and players are not designers, and the input that they offer to the design process is not unquestionable truth. Data collected from users during the research needs to be analyzed and interpreted by the researchers or designers before applying to game design. In the same way the materials that users or players produce even during a participatory is not valuable without further processing. (Ermi & Mäyrä, 2004)

2.2.2 USER EXPERIENCE

User experience (UX) includes every aspect of the user’s interaction with the organization, its services, and its products. An international standard ISO 9241 defines it as follows: “A person’s perceptions and responses resulting from the use and/or anticipated use of a product, system or service.” User experience focuses on deep understanding of users, their needs, their values, their abilities, and also their limitations.
consequence one of the main tenets of user experience design is incorporating user feedback into the design process co-evolving the system with its users. User experience design needs to balance carefully between user needs and all resources given to the project in hand, including time and budget. Generally it requires team effort, since delivering exiting user experience usually needs expertise from a numerous different fields. (Allanwood & Beare, 2014; Uxdesign.com, 2010)

2.2.4 **USABILITY IS NOT A SYNONYMOUS TO PLAYABILITY**

Usability is a quality attribute that measures whether the system is easy to learn, supports users’ tasks and goals efficiently and effectively, and is satisfying and engaging to use. Usability measures the varying degrees of effectiveness, efficiency and satisfaction of a system within a specific context of use. Usability facilitates the user experience as it is just one of the many layers influencing the overall user experience. (Usability.gov, 2015a; González Sánchez, Padilla Zea & Gutiérrez, 2009)

Games extend and add increased engagement level to usability goals listed above. Digital games players voluntarily seek challenges, empowerment and emotions, or means to emotions like fun, which in turn increases the level of engagement. Games are more about the well-balanced and fair difficulty level than ease of use. Followed by that usability is not the synonymous to playability, and the player cannot be seen just a user of the game. (Kumar & Herger, 2013; Ermi & Mäyrä, 2004)

Usability alone is not sufficient to achieve the optimum player experience. Therefore the concept of usability has been expanded and deepened ending up with a concept of playability. Padilla Zea & Gutiérrez (2009) take the usability metrics of effectiveness, efficiency, and satisfaction as a basis for playability, but extend the latter two with properties that describe player experience adding the aspect of fun to all of these categories, proposing this way the Facets of Playability model (2009 - Image 5).

Effectiveness stays the same as the first facet of the model, but efficiency is divided to learnability and immersion, while satisfaction is divided to satisfaction, motivation, emotion and socialization. Hence playability is a set of properties describing the player experience while using a specific game system which main purpose is to provide enjoyment and entertainment by being credible and satisfying, no matter if the player plays alone or in company.

To improve player experience of the game, playability must be concerned in every phase of game development. Both of them can be measured and analyzed. Player experience methods evaluate players to improve gaming, while playability is the evaluative process directed towards games themselves to improve their design. Playability and play experience can be evaluated with expert heuristics, with biometrics or psychological measures, by combining numerical data of gameplay metrics with playtesting and more traditional surveys, interviews, and user diaries. In order to measure, analyze and evaluate player experiences, game’s playability needs to be good. Measuring and analyzing player experiences can achieve a better understanding of relationships and interactions between players and games.
2.2.5 PLAYER EXPERIENCES

Since game design is a form of human-computer interaction just like user experience design, they are both concerned with the quality of a person’s experience as enabled by technology. While user experience designers try to create enjoyable experiences completing objectives that exist outside of the interface, game- and player experiences are themselves seen as enough reasons to play. (Ferrara, 2011)

In overall there is not that much literature about designing player experiences, and it is clear that the concept of player experience itself is not that established in the field of game research or the game industry. Even less there is studies or articles about practices of using player experience design in professional game studios, but Hagen (2010) has begun to enlighten this phenomenon by interviewing several big Swedish game companies and their game designers. He found out that the word experience as a philosophically complicated concept is often replaced with other descriptive words like fun, feeling, scary, atmosphere, immersion, feel, presence, and satisfaction. He explains these words referring to the player’s inner life being therefore like experiences, not simple components that can be built in to the game mechanically.

Hagen found out that designing player’s experience is important for interviewed game designers and in the focus for most design, however it is not primarily guided by studies of player’s experience while playing games but it is based on designer’s own visions, experiences and expectations. There are many reason for this, one obviously being the idea of designers being artists offering experiences to their audience, but another reason comes from the business practice of game industry, where publishers and investors financing the projects have power to guide the design to the direction that fits into their perceptions of the market and the customers. Lastly, related to the former reason games are frequently made based on existing IP, which naturally limits all aspects of creative designing of the game. (Hagen, 2010)

Some definition to player experience can still be found. Aki Järvinen (2007) describes player experience consisting of the cognitions, emotions, and physical activities during a game play session, and immediately afterwards. Therefore studying game experience equals to studying psychological, cognitive, physiological, and emotional aspects of gaming encounters. Chris Bateman (2009) defines player experiences being the series of internal sensations created by the interplay between player actions, choices and feedback from the game. To differentiate user experience from player experience he concludes that user experience addresses issues that prevent the ability to play the game and player experience deals with issues that prevent player to have fun while playing the game. These two are trying to fulfill different values and have competing purposes: user experience enforces usability, simplicity, reducing workload, and eliminating errors, while player experience’s goal is to make game fun, entertaining, engaging and challenging. Nevertheless they need to cooperate to make the overall game experience possible and enjoyable.

2.2.6 DESIGNING PLAYER EXPERIENCES

John Ferrara (2011) has developed a game experience design framework (2011- Image 6) intended to help creation of successful, engaging, and enjoyable games serving also as a process map. It bases on Jesse James Garrett’s user experience design framework The Elements of User Experience meant for web designing, but modified to especially help to understand and design games. Even though it simplifies the process of designing players experiences, it provides a basis for thinking through all the required elements needed to work together to create the experience. It is divided into five planes each of them composed of short- and long-term effects. The planes should be performed in the order of appearance in the model, since each of them use the output gathered from the previous planes. However, working with any of the planes will probably lead to iterations on the earlier ones. Even if fun and enjoyment are accepted to be the most crucial parts of the play experience, they do not have their own planes in the model, as Ferrara thinks that they cannot be designed directly, as they rather emerge from the experience when all the other elements work well together. (Ferrara, 2011)
meaningful. Some games involve more tactical decisions, which are seen as short-term effects, while others emphasize long-term effects; strategy (Ferrara, 2011).

The third plane in the middle of the model is all about balancing the game and the player’s experience. The game elements work in combination to create a system that makes the game feel fair and just, but still appropriately challenging. The short-term and the long-term effects are created with multiple variables of adjustable values. The balancing of the game experience and the gameplay is hard to do, but it can be managed by testing prototypes (Ferrara, 2011).

The plane of usability takes into account all user experience design aspects, adding some specific game experience related issues to consider as well. In short-term the player needs to have a feeling of control over the game events and experiences, and to know the available actions and their consequences, as well as the objectives to work towards. This allows the long-term aspect of developing mastery of the game over time (Ferrara, 2011).

The last plane comprises the many aspects of the game’s aesthetic design, which together set the game’s tone. In the short-term there are the direct sensory experiences including all visual elements, sounds, and haptics, for example feedback given to the player via vibration of the game controller. Games can also contain more contemplative elements unfolding over the long-term, such as narratives with evolving story acts (Ferrara, 2011).

To be able to follow the described process or in any means take in consideration the player experience during the design the communication among the development team is a crucial part. Hagen (2010) was able to collect a wide variety of communication tools used to convey the vision of the game. The traditional way is to compile the game design document, but because it is nowadays considered too burdensome, another more relevant way to develop is to design elevator pitches, one specifying question about the focus, and exemplars and anti-exemplars. On the other hand concept art, mood boards, animations, videos, music and prototypes are examples of non-verbal ways to communicate the vision. A suitable combination of these is given to a new team member as a starter pack, but quite often the whole team’s working space can be decorated and other ways filled with material enforcing the sprouting of the vision.

2.2.6 GAMEPLAY EXPERIENCES AND THEIR MODELS

The game industry’s goal in short is to entertain and create satisfying experiences for the players. The game itself is not an experience but together with the player it enables the experience. Therefore the game is not actually the output of game designer’s work, it is the experience. The discussion of these experiences and their design has been going on under the names of gaming, game, or gameplay experiences, but they mean more or less the same thing. The game is of course the whole artefact that the player can interact with, and the gameplay is defined by Oxford Dictionaries to mean all of the features of a digital game, such as its plot and the way it is played, excluding the graphics and sound effects. But it is the experience that is discussed (Schell, 2008).

Lynn (2012) explains the concept of the game experience encompassing not just gameplay, but the total package of what the game is and what it affects, therefore including the game itself, its presentation, its style, the interactions within the community, the nature of the community itself, and the way a game impacts the player’s interpretations of other games, other media, and the rest of the world.

Ermi and Mäyrä (2005) explain gameplay experience to be a sort of value proposition of the game. Gameplay describes the essential but indefinite quality that defines the character of a game as a game, and the quality of it gameness. They give another definition as well, translating gameplay into a particular balanced relation between the level of challenge and the abilities of the player. This is because the player contributes to the creation of his own experience by bringing his personal motivations, expectations towards the game and developed abilities that influence the overall experience to game playing.

There are several different versions of game experience models, but one of them is presented here as an example. It was chosen because it is developed in two phases the second completing the first model and therefore formulating unusually wide understanding of the gameplay experience. Most game experience models focus on modelling different factors in the gameplay session, like the level of enjoyment. They do not usually holistically consider the whole game experience.

Ermi and Mäyrä (2005) have created a gameplay experience model (2005 - Image 7) representing key elements structuring the game experience. In the center of the model are three levels of immersion; the sensory immersion related to the audio-visual execution of the game, challenge-based immersion is related to achieving a satisfying balance of challenge and abilities, the last one is imaginative immersion when the player becomes absorbed with the story, characters or the fantasy of the play. The focus is restrictingly on the consciousness structured by the interplay, rather than on an analysis of games or players themselves.

IMAGE 7 - The model of gameplay experience
Mäyrä (2007) expanded the model (2007 - Image 8) later on to consider also the personally historical, social and situational context of the player experience and the more wider social and cultural context around it, including the history of games and play affecting to the production, distribution and marketing of digital games today. The model is intended to move the understanding of game experiences to more comprehensive direction instead of just modelling the game experience.

Kultima (2010) presents how by merging game experience models with the order of different consumer activities and the corresponding industry operations modelled in consumer cycles could lead into an overall picture, where services and products resonate on the level of the game experience. In order to understand all potential design issues within creating a game experience, it is necessary to look beyond the gameplay itself. In order to provide suitable services and support for different game experiences, the overall experience must be designed all the way from the information retrieval to the product disposal. The course of design should be holistic throughout the game experience. If the first thresholds of design are set up too high, installation of the game for example, it does not help that the difficulty level of gameplay is lowered. In this context game service design might become even more important than traditional gameplay design.

In the Expanded Game Experience model (2011 - Image 9) created by Kultima et al., a set of six activity states are identified along with their corresponding transition steps.
gameplay, which the traditional game design models concentrate on. Gameplay ends when the player chooses to quit the game. After the gameplay the player enters the state of afterplay, reflecting on the experience. It can end in two ways: the player may choose to replay or abandon the game (experience). If player has chosen abandonment, the player exits the cycle and enters the sixth stage, disposal. Player can exit the cycle at any point and the activities can be interrupted at any time, but the user might also bounce back and forth between the states. In real life actions and transitions have blurry borderlines and experiences vary according to the game played, services used and the context of play. Player can also be engaged in numerous experience cycles simultaneously. Cycles can last from years to merely seconds. (Kultima, 2010)

Kultima (2010) explains how player activities can be supported or restricted through the design. On a deeper level the Expanded Game Experience model (2010 – Image 10) acknowledges relevant user factors and design elements. Each activity state has corresponding user state. The context and worldview forms a background for player’s interpretation of the interaction with the service or the game. User motivations and resources may vary but the design of the game or the service should try to acknowledge, to have an influence on and to respond to the whole user state by threshold design and by providing affordances in order to maintain an enjoyable flow within the game experience.

The focus of the design is the corresponding thresholds (what is required from the player) and affordances (what is provided to the player) of the game or the service experience environment, and balancing them with player’s resources and expectations. Thresholds consist mainly of the requirements and restrictions, but lack of affordances can also form a threshold. Some thresholds player needs to overcome to continue the game experience, and some prohibit the player from carrying on the experience or promote unpleasant experiences that may result in ending the activity. They delay the pleasure, but contain a promise of what is to come, providing a meaningful experience. Affordances are perceived as receivables and possibilities of the game or the service experience. They are conceived not only as what a user can do with a game, but also as what possibilities mean for a user. When designing game experiences for wide audiences, the focus is often on lowering the thresholds and providing general appeal affordances to make game easy to access, and fast to adopt. On the other hand, elevated thresholds and wide variety of affordances may be used to design intense experiences. (Kultima, 2010)

The Expanded Game Experience model helps to frame the whole design process and to understand which actors work on what aspects of the design. It also helps to understand the wide variety of game related experiences from the user point of view, and thereby possibly rationalizes the overall design decisions even when designing for players who fall outside the core gamer group. It is a valuable base to start researching and developing game services, and enjoyable and fluent game experiences. (Kultima, 2010)
2.3 SERVICE DESIGN 
AND SERVICES IN GAMES

The term service should be defined, before looking deeper at different kind of services, service design or to the relation between games and services. The chapter is thereby started by discussing services, followed by chapters of presenting service design as a concept and as a process. Then selected service design methods and tools are represented based on they suitability to be used in the game design processes. In the end a phenomenon called Game as a Service is discussed and game services are presented.

2.3.1 WHAT ARE SERVICES?

The definition for service in this thesis is examined from the perspective of service being subject to design, like a product. Merriam-Webster online dictionary defines service as "a helpful act" or "useful labor that does not produce a tangible commodity". Stenros and Sotamaa (2009) reduce the definition to services being actions or an action that someone does for another, therefore they are intangible. Bitner, Morgan and Ostrom (2007) manifest the one of the most distinctive characteristics of services being their process nature. Unlike physical goods, services are dynamic, and they unfold over a period of time through a sequence or constellation of events and steps. The service process can be viewed as a chain of activities that allow the service to function effectively. In reality, almost all purchases of commodities are accompanied by facilitating services, and vise versa. (Merriam-Webster, 2015; Moritz, 2005).

The IHIP model of services offers four characteristics to define a service: intangibility, heterogeneity, inseparability and perishability. Services are intangible, as they cannot be handled, heard, tasted or smelled. Services build from complex combination of experiences, which can be experienced differently, due to the differences among users, service providers, location, time or situations. In other words services are heterogeneous. Services are first sold, no matter has money been transferred, and then produced and consumed simultaneously, quite often demanding the service provider to be present during the consumption. Consequently services are inseparable. Services cannot be stored, inventoried or transported hence they are perishable. (Moeller, 2009)

IHIP model has been widely criticized for all the characteristics being linkable to consumption of products as well. Moeller (2010) couples the IHIP characteristics with the FTU framework (2010 – Image 11) explaining how they should be applied to an individual aspect of services instead of being assigned to services as a single entity.

The FTU framework includes three parts of service provision: Facilities, Transformation, and Usage and two types of resources, those of the customer’s and those of the provider’s. Facilities are the foundation of value creation and comprise all provider resources as prerequisite for services. The facilities remain unused until customer demand occurs. Transformation results when customer’s resources are combined with provider’s resources, which is perceived as a service. The outcome of service provision is the customer’s option to make use of this transformation and to create value for him.

Based on these frameworks services can be described as complex and situational phenomenon, evidenced through tangible objects and intangible experiences. Heterogeneity will always be present in services, even though it can be reduced significantly trough standardization to enhance perceived quality. By nature services are rather used than owned, they require use of resources, and they are often performed in a predefined context.

Service Design is about designing the overall experience of a service as well as the design of the process and strategy to provide and then deliver that service. Stickdorn and Schneider (2011) describe service design rather as a multi-disciplinary platform of expertise, rather than a new specialist design discipline. It integrates and links different methods and tools from various disciplines, such as user experience design, user-centered-design, product design, design management, marketing, process engineering, ethnography, and psychology. Different theories have had an impact on the development of service design; service dominant logic, value chain analysis, and agile development, to mention some. Service design aims to provide a holistic service to the user by addressing the functionality and form of service from users’ perspective. (Giusti & Zancanaro, 2010)

Service design aims to ensure that services are useful, usable and desirable from the user’s point of view and effective, efficient, economically viable, and technically feasible for the supplier organization. Service design views services radically different from products and therefore a different mindset is necessary for designing and delivering services. Giusti and Zancanaro (2009) consider three critical dimensions of the service consumption process to articulate the differences between products and services: co-creation, unpredictability, and network technology. People who use
a service directly participate to the co-creation of it together with the provider organ-
ization. All at the same time, or in different order, they actively shape and evaluate
the service while purchasing and consuming it. When people actively participate in
creation of services, they become an unpredictable part of the service production line.
For a service provider organization to be able to create high quality services, it needs
to gather a lot of knowledge of varying needs, goals and desires to fulfill not only
customers expectations towards the service but also towards the co-creation process.
Services are not anymore a dyadic interaction between a customer and a service pro-
vider, but a broader network of interactions between parallel service providers using
different technologies and entire communities of users participating to the creation of
the service.

Moritz (2005) claims that service design actually designs the interface between
organization and clients. He has created a Service Design Overview model (2005 –
Image 11) which shows how service design works across both the organization and
the client giving insights through the service delivery. Service design delivers higher
productivity to organizations and raises client satisfaction, and consequently benefits
both organization and service users.

Various tools and methods adopted and applied to service design from other discip-
lines can be aligned in a few ways. Tassi (2009) divides methods to four dimensions:
activities, representations, recipients, and contents. This division highlights the diffe-
rence of involvement of stakeholders, needed knowledge base, and level of operation
between methods. In contrast Stickdorn and Schneider (2011) categorize methods
and tools according to stages they are used during the iterative service design
process: explore, create, reflect, and implement.

Stickdorn and Schneider (2011) present that service designers should follow five core
principles, if they want to practice service design. They need to work user-centred,
they need to co-create solutions which consider the whole sequence of interrelated
actions or touchpoint, they must provide visualized artefacts as evidences of design
process and they should create holistic design concepts.

Service design helps to innovate new services or improve existing ones. It provides a
holistic understanding and gives insights into clients’ expectations, needs and expe-
riences. The outcome of a service design project takes various forms, depending on
what is central in terms of providing value. The outcome may be a plan to improve an
existing service, a set of organizational structure analyzes, a service solution, concrete
physical objects, or a combination of these. The design process itself can also be the
outcome of the process, as it allows the client to develop the service even further
alone.

2.3.3 SERVICE DESIGN PROCESSES

Clearly articulated design processes enable a greater degree of reflection upon the
influence that the designer has had on the designed outcome. Hence the process
and use of it should be intentional. As services are all very different, the processes of
designing them also vary from project to project, and therefore the first step in each
project is to define and design the used process (Stickdorn & Schneider, 2011). In this
chapter three different approaches to service design process are introduced as a basis
for selecting and further designing them.
THE DOUBLE DIAMOND DESIGN PROCESS

The British Design Council divides design process into a simple visual map of four distinct phases: Discover, Define, Develop and Deliver. This mapping shows how the design process passes through points of broad thinking and varying possibilities to deliberately narrowed down situations focused on distinct objectives. This happens in all creative processes, but double diamond (2015 – Image 12) indicates that this happens twice; once to confirm the definition of the problem, and once to create the solution. One of the biggest risks is to neglect the left-hand diamond and end up solving the wrong problem in the right-hand diamond. In order to dodge this, the creative process needs to be kept iterative, including a lot of testing and refining and returning to the previous phases. (Hunter, 2015)

The first quarter of the double diamond model is a period of Discovery, gathering inspiration and insights, identifying user needs and developing initial ideas. The second quarter represents the phase of Defining, in which designers try to make sense of all the possibilities identified in the discover phase. The goal is to develop a clear creative brief that frames the fundamental design challenge of the project. The third quarter marks the period used for Development where solutions are created, prototyped, tested iteratively through process of trial and error helping designers to improve and refine their ideas. The final quarter models the Deliver phase, where the resulting service is finalised and launched. (Hunter, 2015)

THE ITERATIVE PROCESS OF SERVICE DESIGN THINKING

Stickdorn and Schneider (2011) introduce a framework (2011 – Image 13) for service design process articulated in outlined structure, even though in reality the process is nonlinear and iterative. The approach of not avoiding mistakes, but rather exploring all possibilities is one of the main features that differentiate service design from other reminiscent disciplines. During each stage of a process it might be necessary to remake or even to start again from scratch. The important thing is to learn from the mistakes done during the previous iterations. It is also necessary to make frequent leaps between designing in detail and designing holistically. The form of Double Diamond model, developed by British Design Council, mirrors this well.

The iterative four steps approach of exploration, creation, reflection and implementation is a clear way to structure a service design process. During exploration the service designer needs to discover, understand and visualize the culture, goals and planned actions of the company providing a service and the project in hand. Creation step represents the generation of ideas and concepts and later on prototypes, which are tested and retested in iterative manner in the proceeding stage of reflection. Delivery or implementation of new design always demands a change and the more of the stakeholder group has been involved co-creatively on the development of the new service, the easier the implementation takes it place. The result is a service solution, which success should be control reviewed. Ideally, the implementation is followed by another exploration step to evaluate the progress. This circular characteristic leads to the iterative process of service design thinking.
Stefan Moritz has developed his own version of service design process (2005 – Image 2014) He sees the process as nonlinear, overlapping and inter-linking featured, and as long and ongoing process to evolve the service. Moritz have categorized the tasks that need to be undertaken during different stages of service design into six groups. Each group contains a set of methods and tools supporting the designing of services. These groups have been used as the basic structure of the process.

The stage of Understanding is about finding out and learning, the stage of Thinking is about giving strategic directions, the stage of Generating is about developing concept, the stage of Filtering is about selecting and evaluating ideas, the stage of Explaining is about enabling understanding, and the stage of Realizing is about implementation and delivery. Some stages of the process will be applied several times and the whole process can either be used in smaller parts or in several iterations. Moritz underlines the simplistic and generic nature of the model and how it mainly offers a way to share the understanding of the needed stages in service design project and their links between each other. It can be used for to innovate new services but also for improving the design of existing services. (Moritz, 2005)

2.3.4 SERVICE DESIGN METHODS AND TOOLS

Service designers have developed a comprehensive set of tools to use in different stages of service design processes. There are more than 50 tools used by professionals, although some of them overlap and some are very similar to one another. However, in this thesis the focus is on the most commonly used tools that are clear both visually and based on their content, and based on my personal findings the most suitable to be used in the game design process. The tools are also selected based on their suitability to be used together to provide a good starting point for applying service design.

CUSTOMER JOURNEY MAP

Stickdorn and Schneider (2011) define a customer journey map being a structured, linear, story-like, visually represented overview of the factors influencing service user’s experiences before, during, and after a certain service usage. Each point of interaction between the user and the service is described from the user’s point of view. The points of interaction during the service are called touchpoints. A thorough identification of touchpoints is essential to build a genuine mapping of the service, and later on the whole concept for the service. User insights are the most important resources for identifying these touchpoints, and interviews, user diaries and videos are for example good and often used methods to collect them. Once the touchpoints have been identified, they can be connected to each other to form a visual representation of the overall service experience. It can be further detailed with user’s emotions, circumstances, motivations and earlier experiences to give more specifics and to make the mapping even more immersive representation of user-focused experiences.

Stickdorn and Schneider (2011) have published the Customer Journey Canvas (2011 – Image 15) available under CC licence. It is clear, simple but comprehensive version of the customer journey map, and therefore a good starting point for a map suitable for game designs purposes. There are three stages in the canvas: Pre-service period forming the expectations for the service, Service period consisting of the actual experiences and post-service period describing the level of satisfaction or dissatisfaction. Basically all information is gathered from user insights and then mapped to concerned stages of canvas.
Stickdorn and Schneider (2011) list that the customer journey map should be simple enough to be accessible to all, but it should also incorporate enough detail to provide real insights into the displayed journey. Usage of personas is common to help facilitate emphatic engagement during the design process. The customer journey map can be used in different stages of design process from the early concept development to researching the success of implementation of a service. It can be used for both, concepting new services, but also for mapping existing services, and further more allowing comparisons between different, maybe even competing services. The map makes it possible to overview the problem areas of a service, but also the opportunities for innovation, as the service can be examined and analysed as a whole but also as a sequence of experiences and separate touchpoints. (Stickdorn & Schneider, 2011)

**SERVICE BLUEPRINT**

Service blueprints (2009 - Image 16) visualize the interaction between the customer and the service, step by step as in customer journey maps, but offering a deeper level of information of all the necessary factors service provider needs to go trough to deliver the service (Yassi, 2009). However, service blueprinting is a highly customer-focused approach for innovating and improving services, and specifying and detailing each aspect of the service. Service blueprints’ graphical representations are clear and simple, and their visualisations make them fairly easy to read, learn, use, and even modify. They are useful in the concept development stage of a service development process, because all members of the organization and stakeholder group can see and understand what is presented in the blueprint, and even to build on it, but they can be used in various other phases of the design processes as well. Ideally service blueprints are iterated periodically to respond to evolving environment and requirements each iteration being more polish than the earlier in behalf of both content and appearance. They are often produced collaboratively, as they allow a great way to bring together all members of the stakeholder group working for delivering the service. A co-creative workshop is a very effective way to create a shared awareness of each team’s responsibilities during the process and after the workshop the service blueprint document is further detailed and expanded as the service delivery comes closer representing more like a communication tool. (Stickdorn & Schneider, 2011)

Gremler (2011) defines service blueprinting being a technique for simultaneously depicting the physical evidence of service, the points of customer contact, and the service process, visible and invisible from the customer’s point of view. Visually service blueprints consists of different layers of the service including customer’s actions and different supporting actions of service provider. Actions are divided first horizontally paraphrasing the passage of time in the main phases of awareness, joining, use, developing and leaving, but these can be broken down to smaller pieces depending on the project (Polaine, 2013). Bitner, Morgan and Ostrom (2007) list five components that form a typical service blueprint: customer actions, onstage contact employee actions, backstage contact employee actions, support processes, and physical evidences.

Presented chronologically, customer actions include all steps that the customer takes as part of the service delivery process. They are central to the creation of the blueprint, being typically laid out first. All other activities can be seen as supporting the offered value proposition which is often co-created with the customer. The line of interaction separates customer actions from the next component; the onstage contact employee actions. The face-to-face encounters that employees have with customers are depicted as onstage contact employee actions. In between the second and third components there is the line of visibility representing how everything appearing above the line is seen by the customer, while everything below it is invisible. The third component of the blueprint is the backstage contact employee actions, which involve all invisible interactions with customers and other activities that prepare customer service or that are part of employees’ role responsibilities. The fourth component
of the blueprint is supporting processes separated from contact employees by the internal line of interaction. These activities are carried out without any contact with the customers, performing actions that need to happen in order for the service to be delivered. Finally, there are the last components, the physical evidences. They are all the tangibles that represent customer’s interaction with the onstage employee over the line of interaction.

A service design consult Andy Polaine introduced the concept of Blueprint+ (2009 – Image 17) during the SDN Conference in Madeira, in 2009 with a group of three other designers. They remind that the traditional blueprint that are used like instruments to communicate, standardize, build and plan things like houses and cars, may not be sufficiently versatile way for representing services. They present that service blueprints should provide detailed visualizations of the entire service process and actions formulating it, but it should also reveal the motivations and emotions behind the actions. Blueprint+ suggests colouring code of all actions performed either by customer or service provider and based on those colours to draw an additional layer of emotional information. Another additional line can be created based on the emotions revealing the points of failure of success. This layer is called fail line. Polaine (2013) emphasizes the meaning of designing for those failure moments as well. Another measurable layer that can be added is the cost structure. In there can be visualized the effects of service design intervention compared to the existing service and it costs. This layer can easily highlight benefits of using service design for the organization’s business department.
The flow of time is portrayed horizontally and multiple actors are captured vertically. Blueprint+ puts emphasize on all interaction points between customer and service provider employees, removing the line of visibility, and frontstage and backstage. All media points or touchpoints are connected with a line to every role involved in the interaction. Later on Polaine (2013) has returned back to using terms backstage and front stage but lines of visibility remain unused. However, the front stage is composed of necessary channels to provide the service instead of employees. Backstage also consists of all supporting actions without sorting them in unequal positions. In some way, the Blueprint+ resembles the Experience Maps. (Aebersold, Bossart, Mettler & Polaine, 2009; Linowski, 2010)

In Servicedesigntools.org Tassi (2009) sums up the service blueprint being an operational tool, which aims to verify, implement and maintain the service interaction. Normally several versions of the service blueprint are done during the process, each time more polished than the earlier, in behalf of both content and appearance. For each core services should be created own blueprint to achieve the right level of detail for each. Service blueprints allow identifying of the most crucial areas of service that need to be developed, and they reveal areas of overlapping or duplication. Service blueprinting can help to refine a single small step in the customer process as well as the creation of a comprehensive, visual overview of an entire service process. (Bittner, Morgan & Ostrom, 2007)

**STAKEHOLDER MAPPING**

Stakeholder map (2011 – Image 18) is a visual tool to clarify and categorize the various groups involved with a certain service. A stakeholder is any group or individual who can affect or be affected by an organization, strategy or a project, and from the perspective of service design, a service. They can be internal or external and they can either have power to impact an organization, strategy or a project, but they can also have no power at all. Tassi (2009) lists employees, communities, shareholders, investors, customers, partner organizations, government and competitors as examples of stakeholders.

A stakeholder map is particularly used to analyze stakeholders, but also to develop an organization's strategy. Stakeholder map helps to understand the relationships, status and resources of each stakeholder. It represents whom the different stakeholder groups are, which interests they represent, what is their amount of power; and what kind of actions are they expected to do. (MBA Brief, 2015)

Stakeholder mapping is a collaborative process and usually done during the research phase of a design process. Mapping can be broken into four stages: identifying, analyzing, mapping and prioritizing. The first stage is to comprehensively identify all stakeholders. The Office of Government Commerce (2007) suggests the use of categorizing the stakeholders into four groups; users or beneficiaries, governance, influencers, and providers to help in the naming of all stakeholders. Stickdorn and Schneider (2011) emphasize the importance of analyzing the perspective, the interest and the motivation of each stakeholder, as it eases the process of finding and visualizing the relations and interaction points between the stakeholders during the actual mapping stage. Finally stakeholder groups should be prioritized and then engaged with varying level of intensity. (BSR, 2011)

A stakeholder map can have various forms, but they should at least identify both internal and external stakeholders, reflect their importance to the project and detail their relationship with each other. The mapping is ideally easy to read and identifies the pain points and explores potential areas of opportunities. It helps the organization to deploy their resources as the stakeholders can be grouped and treated together based on their shared characteristics; interests, importance or influence for example. (Stickdorn & Schneider, 2011)

**MIND MAPPING**

Mind mapping is a highly effective, creative and logical way to categorize thoughts and one’s understanding related to a certain subject. It is a brainstorming tool, which literally helps to map ideas and visualize their connections, as hand and the mind work simultaneously. Mind maps are structured outward from the center with a problem or an idea put in the middle of the representation. The most relevant ideas are close to the center and more and more uncertain ideas further away. Signs, images, colors, symbols, lines, words and drawings are used in order to build organized diagrams about the thoughts and ideas. (Tassi, 2009; mindmapping.com, 2015)

Mind maps can be used individually or in groups. Naturally more ideas are generated
when working in teams. The theme of mind mapping can be anything, but by framing the main idea wisely it is to stay focused and generate useful ideas. After the mapping session the ideas are documented, analysed and categorised based on their potentiality to be developed further.

PERSONAS

Service design aims in various ways represent service users in different stages of design process. Personas are one tool to be used to provide a range of different perspectives on a service. Each persona is a fictional character whose profile is gathered from in-depth research among potential users. However to keep the design focused and guaranteeing better success there should not be more personas than what is necessary. Moritz (2011) describes personas as research based archetypes of service users representing patterns that have been identified during qualitative research instead of grouping people based on demographics or interest segments.

Personas must answer to three questions to be successful: what are the user needs, wants, and limitations. The creation of personas helps to sharpen the idea of potential customers, and helps the design team to empathize the users by shifting the focus towards real people’s wants and needs instead of abstract demographics. The motivations and reactions the personas exhibit are real, even though the personas themselves are fictional; personas embody the feedback gathered from the research in the beginning of the process and therefore express the real worlds perceptions about the company and its services. The persona is better to be precise and consistent than accurate to be able to remain durable throughout the development process. (Moritz, 2011; Churruca, 2013; Stickdorn & Schneider, 2011)
There are several layouts and guidelines for creating a persona, but Churruca (2013) has compiled a list of commonly appearing elements as a basis of building a persona: profile information including a picture, personality, referents and influences, archetype and key quotes, technology expertise, experience goals, devices and platforms, domain details, expectations and frustrations (must Do - Must Never), relationship to brand. The key to successful personas is to make them as engaging as possible. Each piece of this information needs to be based on several sources of information gathered by utilizing interviews with real users, data analytics, marketing research, and customer service messages for example. As the information is analysed and categorized the necessary number of personas can be created. Appropriate information is filled to the right elements.

The most important reason to create personas is to found a common understanding of the final user among the design team and whole organization. Personas are usually created in the first stages of design process and used in following stages to make sure that the service is strengthening the relationship between users and the service provider. Personas can be constructed as a group activity in workshops, facilitating discussions and communication to provide a shared understanding of user segments. Level of detail, visual representations and in-depth research insights gathered from stakeholder maps, interviews and time spend with or by observing users will bring these characters to life. (Stickdorn & Schneider, 2011)

**SCENARIOS**

Scenarios (2013 - Image 21) are fictional stories or sequences of events centered on a user or a user group and told from the users’ point of view. They can be used when concepts are being developed or validated. They are a quick and engaging format, even though their profound creation requires quite a lot of user research to offer real insights about the users and use cases. Often this work is done when the service design tool personas is used and scenarios can well be based on these created personas. Scenarios focus on defining and making the customer experience more tangible to help the organisation to explore the possibilities to improve the experiences.

Scenarios have become one of the most prevalent ways to help designers to understand and empathize the users in the first phases of user-centered design processes. Scenarios are short narratives that describe a use situation and the interaction between users and the system being designed. They can also be used to discuss the different kinds of future-use situations. Scenarios are usually developed by the design team and presented to convenient users to gain feedback, but the users can take part in the creation of the scenarios as well (Ermi & Mäyrä, 2004)

**BUSINESS MODEL CANVAS VS. SERVICE MODEL CANVAS**

Business model canvas (2010 - Image 22) is a useful tool that describes and analyzes how an organization creates, delivers and captures value by identifying multidimensional relationships and value networks. It is split into nine sections, each representing a block in a successful business model. Increasingly popular tool can be used almost in any sector and it is said to be very similar in the spirit with the service design approach. It is commonly used tool as well in the game industry especially among start-ups, but not from as service-orientated perspective as service designers use the canvas. It can benefit service providers in numerous ways as it brings clarity to an organization’s core aims whilst identifying its strengths, weaknesses, and priorities. (Stickdorn & Schneider, 2011)

Economist Sylvain Cottong considers service design methods being the most appropriate way to fill the most strategic and upper level insights to the business model canvas. He points out that the four building blocks of the business model canvas; value proposition, relationship management, distribution channels and client segments are actually core activities that service design tries to find a confirmed, desirable and concrete answer to. Together they form the major part of a service experience’s touchpoints together with the actual service proposition. Cottong also point out that the business model canvas offers the often missed financial layers in pure service design approaches by incorporating revenue and cost structures as well as partnerships and relationships with stakeholders other than clients. (Cottong, 2011)
To get further, UX designer Neil Turner has created the Service Model Canvas (2015 - Image 23) inspired by business model canvas to help to develop and document service models. The canvas is divided into twelve blocks filled with questions under specific themes. It does not try to capture every detail about the service, but to help to get started on designing the service. Turner describes the canvas being a good tool for considering how a touchpoint or smaller part of service experience fits in to the wider service. (Turner, 2015)

As an example, let’s take a look at the Service model canvas provided for Spotify by Turner. Most of the blocks presented in the canvas have a corresponding role in the business model canvas but not all. The canvas is structured significantly neither horizontally or vertically, but maybe the most distinctive themes are addressed at first from left top corner. Clearly different and new themes compared to the business model canvas are the blocks of actors, usage, competitors and challenges, which all bring useful insights for designing services. The bottom of the canvas brings the freshest ideas to mapping services. Turner points out that if the costs outweigh the benefits the service is never going to be viable, and therefore it is important to outline how the service will deliver a return of investment (ROI) even though the return can be other than money as well like improved customer satisfaction. KPIs (key performance indicators) on the other hand list how the return is going to be measured and how the performance of service is going to be tracked. (Turner, 2015)

USABILITY TESTING

Usability testing is like a pair to prototyping, since most often time the best way to test the concept being developed is to let users to try to use the prototype of the service concept. During a usability test one or more evaluator watch, listen and take notes while participant user representatives are trying to complete a task given to them. The goal is to identify usability problems but also points that are successful, collect qualitative data and to determine the participant’s satisfaction with the product. Usability tests are done during the concept stage of design, because the earlier issues are identified and fixed, the less expensive they will be in terms of both time and possible impact to the schedule. (Usability.gov, 2015b)

To run an effective and worthwhile usability test, the design team should have a clear goal for why they are testing that specific part or prototype. They also need to have a solid test plan and after the test the results have to be analysed. In the end the team needs to find ways to implement finding in to the design. Otherwise usability testing is pointless. (Usability.gov, 2015b)

COGNITIVE WALKTHROUGH

The cognitive walkthrough method is a usability inspection technique used for examining how easily systems can be learned by exploration. It is often used to evaluate software prototypes, design diagrams and even sketches. It is performed typically in the early phase of development process as it requires fewer resources than user testing. The creators of the technique attempted to develop a usability inspection
method to be able to be used by evaluators who are not HCI experts, and therefore it has been appealing from an engineering perspective. It is methodologically similar to use-case models and code walkthroughs used in software development and therefore fits well with the existing software engineering test practices. Traditionally it is applied to systems in which users complete fairly structured tasks. The evaluators observe a user completing these tasks and map all occurred usability problems. (Al-lenderoer, Alker, Panjwani et al., 2005)

Tassi (2009) on the other hand describes how the technique can be used in service design in a manner in which one or more evaluators observe the developed service by going through the stages of the client journey from a perspective of a selected character profile. The evaluator considers the level of knowledge, skill and specific needs embedded to the character profile. In this way the evaluators can act as specific user groups, experience the service from their perspective and therefore they are able to indicate possible problem areas.

2.3.5 GAMES AS A SERVICE

A few years back a concept called Games as a Service (GaaS) started to raise in the field of game industry after development of the cloud based service providence, but as a method or philosophy service design is still basically an unknown topic in the game industry. There are two most often referred definitions for Games as a Service. The first one describes it as a practice of running games on servers giving developers a new level of agility to navigate in the complex world of devices, markets and business models for their games. The other portrays it as a philosophy underlying the holistic nature of game experience and caring about the quality of every element of that experience from the initial game teaser to gameplay combats and bug reporting system. Gaas has ended up meaning different things for different people in the game industry to a point where use of term “service” is even deemed dangerous by some players and developers. (Bidaux, 2011; GameSparks, 2015)

The name GaaS refers to designing games as services and hence concentrates on creating value for players by engaging them in relevant moments of game experience. The profound aim of the model seems to concentrate on establishing an on-going relationship between the provider and players by involving and offering online communities, downloadable content, patches to fix bugs and exploits, incrementally build game worlds, updates, and micropayments.

Let’s compare this to the definition of service design: Stickdorn & Schneider (2011) describe service design as a holistic perspective taking into account the factors that need to be done to make a service run, considering both the service user and the service provider. Similarities are found in these models. (Bidaux, 2011; GameSparks, 2015)

Nevertheless, GaaS has encountered an enormous amount of criticism from the players and small independent developers. They state that Gaas in fact equates to unfair and absurd in-game money making schemes comprising pay-walls (the game continuously won’t proceed without real money payments), games that are shipped in an incomplete state and the exploitation of players by means of luck-based mechanics just to mention some. Critics argue that incorporating business models within the game design financial consideration is ultimately put ahead of the creative aspiration, which limits the variety of games. Similarly traditional arcade games were all built for short play sessions and steep difficulty to keep players inserting quarters every few minutes. From the developers and publishers point of view there are also other positive aspects in server-centred models as well, which all players are not excited about; traditional forms of piracy can be obstructed, second hand market of game titles can be limited, and economically unviable game titles can be put down from servers. (Sinclair, 2012)

To explain why the game industry and players have so contradictory vision of services in games Morales Coto (2015) describes game industry confusing the concepts of revenue and value. Players expect to experience complete game experiences instead of separately well-designed bits of services, which companies currently implementing GaaS only seem to produce. In other words Gaas is not succeeding in delivering real value to players. This is because most game companies are not capable of producing consistent service proposition. Consequently GaaS have ended up being like a product itself, trying to deliver value for players but ending up generating revenue at each touchpoint of the experience of play. This is strongly due to existing industry culture of long development cycles, team member changes and enforcement of isolation of employees according to specialty resulting parallel versions of value propositions. Instead of designing a consistent service, the separate departments push their own version of value ending up presenting it in internal monetary terms instead of user-relevant value. Moreover the service entirety itself is not designed at all. (Morales Coto, 2015)

There is not much literature or other information available about the nature of the current game services and the ways they are developed. The prevailing perception of game services is associated to Massively Multiplayer Online Games (MMOGs) which are run on online servers and constantly optimised, patched and developed further by the game development team. Some MMOGs also provide possibilities for players to create content in game. They are most often big PC games but increasingly they are widening to other platforms as well mobile included. Sotamaa (2007) describes the rise of MMOGs having highlighted the importance of post-production, maintain work, and player support.

Stenros & Sotamaa (2010) on the other hand have presented a player service model (2010 - Image 24) divided to five categories all supporting playing; maintenance of environment, support of initiation, facilitation of playing, assistance of play and socialization of player.
socialization of player. The authors bring up the existence of similarities to services offered by other software branches, stating that the game industry has much better understood and has capabilities to offer supplementary services than the actual core services and that their model seeks to help exactly with that. The model relies on the idea that games themselves cannot be services since playing games is seen as an activity that one engages for its own purpose. However, games can offer a variety of forms for services aimed at players to take place. Digital games should rather be considered both to be based on and to provide a basis for various kinds of services.

The first three service types are available for the player to help her decide to play the game then progress to start it and help her during the actual play. The last two are transformative services helping the player to play the game as she desires: to personalize it as she likes and to allow her to socialize with the game including tutors, forums and instructions from the game itself or from the other players. The player service model clearly communicates that players crave a wider spectrum of services than just a digital distribution of game content as was pointed out in the former chapter discussing Games as a Service phenomena. Viewing game services simply as a pipeline through, which the provider sells products to the player, hinders gaining a more comprehensive view of the possible services to exist.

2.4 COMPARISONS AND ANALYZES

In order to be able to understand the perspective from which game developers can and will design game related services, the processes used in those two fields should be compared. Similarly to be able to form an understanding of the required nature of the toolkit suitable for designing game services, the ways that they are now designed as part of the overall game experiences is needed to be compared to service design methods. Therefore, in the following chapter the similarities and differences of game design and service design are discussed from multiple perspectives.

2.4.1 PROCESSES OF GAME DESIGN AND SERVICE DESIGN

If the definition that Stenros & Sotamaa (2010) propose, the contemporary digital games being rather based on and to provide bases for various kinds of services instead of themselves being services, is taken as a starting point, then games should not be designed as services. From this perspective, comparisons of game design processes and service design processes are mainly infertile. However the aim of this thesis is to offer means and tools for game developers and game companies to develop their game related services, which have been discussed earlier in the literature review, to actually form a remarkably important part of the player’s overall gaming experience. As a consequence in order to be able to understand the perspective from which these game developers can and will design game related services, the processes used in these two fields should be compared.

Iterative methods are strongly emphasized in both service design processes and game design processes as they both are used in uncertain conditions where the end result of the design is almost always unknown in the beginning of the project. Both fields are inspired by user-centered design and they evaluate the iteration cycles by utilizing prototypes developed as a hypothesis of the design concept and by applying user testing to different stages of the design process. Nevertheless, service design takes user-driven approach much further than traditional game design or the more advanced player-centric game design. The five core principles of service design presented by Stickdorn and Schneider (2011) emphasize holistic and all touchpoints considering co-creative service development utilizing user-centric approach supported by visualizations of the process. In contrast, game designer’s main goal is to provide entertaining, fun, enjoyable and playable game experiences.

As previously introduced game design processes consist of stages of concept designing, elaborating the concept towards the game and finally tuning it. On the surface Design Councils Double Diamond presented by Hunter (2015) consisting of quarters of discover, define, develop, and deliver and Stickdorn’s and Schneider’s (2011) service design process of exploration, creation, reflection, and implementation seem quite compatible to game design processes. The terms used in process models resemble each other and procedures also sound similar. This is likely to cause problems and confusion if service design as a process is presented to game developers, and the
possible confusion must be taken into account when designing the toolkit. The first stages of service design process concentrate on gathering all kind of insights and information about both users and service provider to be able to frame the fundamental design problem to be solved. Processes that are used to kick-start service design projects do not exist in game design. In traditional game design processes game designers are expected to be omnipotent informants knowing what kind of games players want to play and therefore know what kind of games would be worth developing. Adam's (2013) player-centric game design process also does not suggests observing or in other ways collecting user insights about players and their preferences, instead players are viewed through various demographics and their representations of imaginary players until focus groups are invited to playtest the game in rather late stages of production. Players have not truly co-design the game nor had possibilities to affect the initial game ideas. Therefore it can be said that the upfront similarities of the first stages of these two design processes do not ultimately resemble each other that much.

However on the latter parts of the processes, the similar dedication to iteratively build prototypes and user testing brings these two fields of design back together. To be able to develop valuable, existing and desirable game related services, and additionally improve the game design process to more player-centric direction in overall, game industry needs to learn how to involve players into the discovery, exploration, definition and creation parts of game development and learn how to study players' motivations, needs, likings, emotions, experiences, expectations, and preferences. The utilization of co-creative methods would expand game design processes to be as user-centric approach as service design is.

2.4.2 KNOWN AND UNKNOWN NEEDS

Service design emphasizes the significance of finding not only users and clients known needs and motives but also the unknown needs as a basis of service development. Definition of the real problem who to design for can be underlined only then. This is especially set front in the Double Diamond model (Hunter, 2015). From the client’s point of view this might at first seem arrogant and frustrating, as the service designer is not fully concentrating on issues that were briefed to be designed. Of course service design provides means to explain and visualize the purpose of this approach and usually at the end of the project client is satisfied as the resulting service provides even more value that was expected. It is the part of service design process to evaluate, verify, and maintain the implemented service to validate success of both the service and used process.

Game designers on the other hand are thought by virtue of their professional skills, game literacy and artistic vision to be capable of setting the requirements to the design and to create a vision of game that is both entertaining and enjoyable for their player audience. This knowledge is gained by playing games, and through generalised player demographics, not through systematic player research. Players' opinions are heard during playtesting in the production stage of the process. Sotamaa (2007) presents that players' limited participation to the overall design process indicates a perception that players do not actually know what they want but they can identify it if it is shown to them. These two different ways to discover and design for the unknown needs of the users or players in service design and game design first sound subtle but are actually significant.

The same issue comes up also from the Hagen's (2010) studies of processes used by practicing Swedish game developers': the ideation and development of the game concept bases often on designer's own or his core team's experiences and expectations. This approach seems to dominate the field also in larger scale, even though the lack of academic research about the topic makes it impossible to argue impeccably. It can however be noticed from the active blog postings and forum discussions among the developers of the field and from the lack of existing theory and handbooks, which would teach to design games from the real player's point of view. After all these are the sources where the knowledge and practices are gained to design games.

2.4.3 VALUES AND BUSINESS

On the process level, neither of the compared design fields vigorously consider the business side even though it is certainly embedded in the requirements of design defined during the first stages of processes and therefore it affects the overall design process. Service design aims to develop effective, efficient, and economically viable service concepts from the supplier organization's point of view. However Cotton (2011) hints that service design misses a profound financial layer and offers the Service model canvas tool to discuss also the revenue and cost structures of the service as well as the business-wise influential partnerships and relationships with stakeholders other than clients.

As discussed in the Games as a service chapter, the game industry on the other hand is eager to find ways and places for revenue, even at the expense of value. The tough competition in all game market places is one of the reasons for the aggressive attitude towards creating incomes but so is the fact that making a game is always risky as the production has to be funded and implemented almost entirely before sales take place. This kind of approach highlights the culture of succeeding or failing both to the fullest. Morales Cotó (2015) implies that by delving deeper into service design game industry could find ways to evaluate all stages of interaction within a game, from inception to sale and disposal. By mapping all touchpoints of the existing and potential services without initial revenue in mind, real and valuable game services could be designed. She sums it up to the importance of finding ways to demonstrate and share value proposition based on user insights company-wide.

As both discussed fields of design are ultimately trying to create meaningful and usable experiences they need to encompass an appropriate set of values to allure their users. Service design tries to uncover both the users and clients values in the discovery and exploration stage of the process to be able to consider them throughout the whole service design process (Stickdorn & Schneider, 2011).

As presented both by Kultima (2010) and Flanagan and Nissenbaum (2014) values are also integrated part of game design processes as games embody and express values whether intentionally or not. Therefore game designers should acknowledge the values that they represent and consider valuable as a human beings and as a result consider what kind of values are suitable and should be incorporated in the game being designed. Therefore it might be good to bring up the value sensitiveness also in the design of the service toolkit.
2.4.4 CURRENT GAME SERVICE DESIGN AND SERVICE DESIGN

Currently provided game services focus on the actual gameplay and possibilities of customization as they are mostly related to MMOGs (massively multiplayer online games). Their design is holistic towards gaming experiences inside of the game, and players’ actions are support outside of it in a form of player communities and discussion forums to mention some, but the experiences extending beyond the game are not designed holistically from the service design's perspective when compared to the five principles of service design by Stickdorn and Schneider (2011). Especially user-centered approach, co-creation, and consideration of all touchpoints seem to be lacking. The tool developed in this thesis can offer one structured process to develop these services.

In the Player service model presented by Stenros & Sotamaa (2010) all the identified service types are activities that support playing of games. However the model does not clearly explain who provides these services, but it is stated that players can also provide these services to each other. It gives no advices on how to design these services. Instead it concentrates on categorizing service possibilities, stating that the industry currently covers only small portion of them. Instead it gives some insights to the variety of services that players might be interested to purchase, with or without money transaction. All the actions presented in the model are services based on the definition of service. Therefore service design methods and tools could be applied to design them. However they do not provide a holistic understanding of all game related services, as the model is highly generic. Consequently it cannot be taken as a starting point for the service design toolkit, but if combined with Kultima’s (2010) expanded game experience model together they can offer something interesting.

2.4.5 EXPERIENCES AND GAME DESIGN

Game experiences are most often modelled by focusing on a specific factor one at the time for example on the level of enjoyment. The game experience models are not usually considering the whole game experience holistically, whereas viewing the entire customer journey is the corner stone of service design process. However Mäyrä (2007) and Kultima (2010) have made efforts to further develop ways to design and view game experiences by each of them making their own model of how the players experiences should be set into a broader context. Mäyrä's model expands the experiencing towards culturally, historically and socially broader perspectives, while Kultima tries to gap the bridge between service design and game design processes. The model she presents offers a new approach to view gaming experiences as something that starts even before the actual gaming is started and ends quite a lot after the actual gaming has been interrupted. On the other hand she does not offer any methods or tools to implement her ideas. By combining her model of Expanded game experiences with service design methods, it would be possible to find truly fruitful way to introduce and utilize service design in the context of game design.
CONCEPTING THE TOOLKIT

This chapter introduces how the toolkit concept was developed and what kinds of decisions were made. At first the requirements and goals that the toolkit aims to fulfill are discussed. Then is presented the structure of the toolkit and finally the selection of service design tools encompassed to the toolkit are introduced. Commonness of usage among all service design tools and compatibility to the game industry’s own processes and tools served as the guidelines for selecting the tools into the toolkit.
Since the target group is not familiar with service design as a method, as a process or as a set of tools, the concept of the toolkit should be clearly visualized and simple to read, learn, and use. Still it should be informative and engaging in order to attract to be tested and then used continuously. The idea is to provide a structured way to map the players’ journey throughout the gaming experience, find the pain points to be re-designed and identify all potential points for game related services. At the same time the toolkit should guide the service development towards a holistic entirety. The toolkit should also clarify its purposes and promote the benefits of using it.

As was proven in the first and second chapters of this thesis, there is a need for game companies to identify the player’s motives, needs, and expectations towards their games and gameplay experiences in order to provide meaningful and valuable game services related to their games. Ideally the visualization and instructions of the toolkit would be so clear and compatible with the processes and approaches of game design, that a novice users could start without long study session. Still it needs to provide new ways to gather insights about the players and other stakeholder groups taking part to the delivering of the game services. It should be suitable to be used either individually but even more importantly in teams, as usage of co-creativity is one of the indicators to define service design as an approach.

The main goal of the toolkit is to provide instruments for defining and designing game related services. Secondly, it provides a platform for better communication within the company about the holistic gaming experience. The tool should emphasize the player's journey and experiences throughout all actions related to the game and playing of it, offering a more empathic perspective for the game company to view the experiences and game related services provided to the player. At the same time it displays the demands towards the service provider for the service to be able to succeed. The toolkit should give positive and inspiring experience about the service design itself to ensure re-use of the toolkit and awakening of a desire to explore the possibilities that service design has to offer in a wider scale. It would be beneficial if the toolkit could also improve the reputation of services among the game industry.

The toolkit has a particular focuses on the first half of the design process, which was noted in the literature review was the part that most differentiated the service and game design processes from each other. Stickdorn’s and Schneider’s (2011) five principles of service design are embedded to the toolkit to verify the guidance towards designing game service concepts that can be classified as service design concepts, but also to ensure the quality of the toolkit itself. The toolkit can be used either for developing new game related services or to examine already existing services and possibilities to improve them.

### 3.2 STRUCTURE OF THE TOOLKIT

The double diamond process (2015 - Image 25) has been selected as a starting point for the design process of game services, as it frames the process clearly both visually and in relation to the content. Therefore the process has four stages: discover, define, develop, and deliver. The stage of discovery consists of four parts: understanding the context, understanding the requirements and the resources, understanding the user, and understanding the possibilities. To be able to understand the context of the game services, all parties involved in producing, experiencing or in other ways being affected by the game services need to be identified. Therefore the first artefact of the toolkit is stakeholder mapping.

Understanding of both the user and requirements and resources, is gained by utilizing service design tools customer journey map and service blueprint. To be able to make either customer journey map or service blueprint the team designing the game services needs to have enough knowledge, data and insights about the users to identify at least most of the points of interaction between the service provider and the user, in other words touchpoints. However, based on the gained understanding of the game industry and their processes during the earlier literature review, but also based on my own understanding and experience of the field, it would be better to first show why and where all the research is needed.

If a game company willing to improve it’s game related services wants to try service design methods is encouraged to first only garner user insights without clear purpose or benefit, presumably the result quite often is a rejection of the arduous way and continuation to use the old practices. Therefore I present the next part of the toolkit concept consisting of constructing the service blueprint with that knowledge that the company is able to gather easily by interviewing few focus group members, from existing player feedbacks and from data and user insights gathered during previous projects. If more insights are available, that’s great, but this is enough to get started. After all the idea in both service blueprinting and customer journey mapping is to iteratively develop and improve the mapping throughout the process. Construction of both service blueprint and customer journey map are suggested to do in co-design workshops with as many representative of stakeholders as possible, but at least by involving focus group.

The last part of discovering is about examining what kind of services could be possible. A good tool for exploring ideas is mind mapping, as it is fast and easy to do with a big group. It is a brainstorming technique aiming to generate lot of ideas without evaluating the quality of them until the generating phase is ready. It is also done in a workshop together with stakeholders.
Similarly focus group should be involved in the defining stage of the process when the service ideas and improvements are brainstormed further. Defining the ideas refers to studying them on a deeper manner. The work should again be done co-creatively with as many viewpoints to the service represented as possible. Tools like personas and scenarios are good for this kind of examination. The richer and more informative the results are desired to be, the more time needs to be used with the tools and more different people should be involved. The results can be attached to customer journey map to give profound understanding of the experiences and interactions between the user and the services. As the form of double diamond suggest, defining is all about clarifying the ideas and narrowing down the possibilities ending up with an explicit game service concept.

In the third quarter the chosen game service concepts are developed further, build on prototype level, tested and improved based on observations and feedback gained from test users. Focus group’s involvement in the iterative testing part is important and as it reminds the testing phase of the actual game prototypes, it should be familiar to the game developers. As a part of testing and developing the concepts a service design tool Cognitive walkthrough should be carried out to ensure the holistic nature of the concept but it can also be used as a reference point for user testing. Service blueprint and customer journey map are both updated as more knowledge of the services is collected. They can provide assistance to the use of cognitive walkthrough tool as well.

Delivering the service concept is the final stage of the game service design process. The best tools to help the implementation and delivery are the customer journey map and service blueprint as they provide means to once again overview the problem areas of the service, analyse the service experience either as a unified entity or each pieces of services individually from the perspective of separate touchpoints.

Visually the toolkit is presented in a structure that complies with the Double diamond. It should begin with a brief introduction and then present all separate tools in the order of usage. Each of them has short instructions to help to start using the tool. Visual style is solid, clear and informative.

3.3 DESIGNING THE TOOLS

The toolkit is aimed for those who develop game related services. However none of the roles used in game industry directly refer to designing game related services. Therefore it probably varies from company to company whose responsibility they are. Probably at least the game designer is involved but it is likely that a bigger team is developing the service chain. It can be assumed that several manager level employees are involved in designing game services but at least user interface designer, game designer, producer, product manager, creative director, and brand manager have required skills to be a part of design team. The company size and strategy affect a lot on what kind of manager roles they have and therefore each company has to start the service development project by gathering a suitable group to do the work. However all participants should have a holistic understanding of the game and the company itself. Additionally all employees somehow connected to the service delivery process should be involved in the design process when it is needed. The toolkit is designed for game companies of all sizes.

STAKEHOLDER MAP

Stakeholder mapping is a collaborative service design tool used during the discover phase of a design process helping to understand the relations, status and resources of each stakeholder. First and the most important thing to do when starting to map stakeholders is to identify them all. After that they should be analysed based on their perspective, interest and motivation towards the game services being designed. This helps the process of finding and visualizing the relations and interactions between different stakeholders during the actual mapping stage, when they are placed on the mapping canvas based on their importance and centrality in terms of the game services. Finally the stakeholder groups can be prioritized to guide the intensity level on which the design team should engage with each stakeholder.

As a result the stakeholder-mapping tool consists of four separate parts carried out in specific order: identifying, analysing, mapping and prioritizing. Based on the suggestions of Office of Government Commerce (2007) in the first phase the stakeholders should be listed according to their roles underneath following four terms: users, providers, influencers, and governance. In the toolkit this part will be a visually concordant table to ease the start of mapping. The stakeholders should be written each on a separate sticky notes to help the mapping of them in the following stages.

In the second stage the stakeholders’ perspective, interests and motivations are analysed. This is achieved by grouping the stakeholders three separate times first based on their perspectives, then based on their interests and lastly based on their motivations. All stakeholders need to be placed to the mapping. It will be noticed that some stakeholders have similarities and that others differ from each other in every aspect. Each grouping is documented, by photographing for example. In the toolkit this part is instructed visually.

Next all of the stakeholder sticky notes are placed on the circular mapping canvas. Closest to the center are the core stakeholders like users. The less direct the stakeholder is the further away from the center it is placed. When the mapping is complete the relations and interactions found in the second stage can be drawn to the canvas from stakeholder to another. A circular mapping canvas is given in the toolkit accompanied with the operating instructions.

The fourth stage is a power/interest matrix, where the stakeholders are all placed to enlighten the required level of engagement and communication with each stakeholder. The matrix is easily used tool, and visualizations and instructions are provided in the game service toolkit.
SERVICE BLUEPRINT

Special characteristics of game related services need to be considered when constructing a model of service blueprint suitable to be used by game industry, as game experiences are not usually modelled holistically considering the whole game experience, but rather separately focusing on different factors in the gameplay session. However Kultima (2010) has studied the possibilities to merge game experience models with consumer cycle models resulting with Expanded game experience model, which actually resembles service blueprint, especially Andy Polaine’s approach. As a result I have decided to combine these tools into one, with emphasis on service blueprint. Although Kultima suggests examining the player’s experience as a cycle, I will keep the traditional linear form of service blueprint, as it is easier to understand and work with, and Kultima’s model can actually be forced in linear form as well. To build the service blueprint canvas, horizontal and vertical axes need to be placed at first. On top of the canvas I will place horizontally running time axis, which service design suggests dividing into moments of awareness, joining, use, developing and leaving. If Kultima’s (2010) six activity stages of information retrieval, enabling, preparations, gameplay, afterplay, replay and disposal are combined to those, in the horizontal axe there is finally awareness, enabling, joining, preparations, gameplay, afterplay, and disposal. The user of the canvas can still further divide these stages to smaller pieces if it is needed in their context of use. Awareness reflects the actions occurred as the player realises the existence and possibilities to play games. Enabling is a stage where the player browses game options and information about the game. Preparations start when the player has chosen to start playing some specific game. The term use that service design prefers is therefore divided to three stages as preparations, gameplay and afterplay. The canvas should highlight that the last stage of disposal does not necessarily happen straight away after the last stage, but rather it may occur at any time as a separate stage. Player can also decide to interrupt the service experience in any moment and then start again from some another stage, but this can happen to all kind of services. If the disposal does not occur, the player goes pack to some earlier stages.

To the vertical axis I will place the player on top of the canvas. Next there is a space for different channels related to the service providence. They can be for example company’s web page, online game store’s sales page, and discussion forums. Each design team needs to figure out what channels are required in their context. Underneath the channels there are supporting backstage processes, which also vary on each project. Together these axes are the starting point for building the service blueprint. Touchpoints are presented on their own layer not only once, but underneath each action, which they are related to. Once touchpoints are all in place, connective lines can be drawn between the interacting actors.

Blueprinting is recommended to do with sticky notes on few meters of free wall as a co-creative workshop to create a shared vision of the holistic service experience among as many stakeholder groups as possible, and to raise the awareness of each team’s responsibilities during the process. The idea is to start filling the canvas chronologically from customer’s actions including all customer steps from left to right throughout the service experience. However Andy Polain (2013) suggest that the canvas can be filled either by first placing the key touchpoints for the entire experience or by starting from the one key touchpoint and then working outwards. My hypothesis is that is it easier for game developers the start from the center, in other words from the actual gameplay, and then move outwards from there.

After the workshop the service blueprint is document and then detailed and expanded further. The canvas should be transferred into digital form to ease out the next phases where more detailed information is added. Once the canvas is on the computer additional layers will be added in the bottom and in the top of the canvas.
According to Kultima (2013) player experiences can either be supported or restrict-
ed through the design and therefore a layer of thresholds and a layer of affordances
represent how the player’s state is taken into account during the whole design. To
the thresholds layer are placed requirements and restrictions, and to the affordances
layer which kind of possibilities and receivables are provided to the player. At least
layer of emotions and layer of fail line proposed by Aebersold, Bossart, Mettler &
Polaine (2009) in their Blueprint+ model are attached on the bottom of the canvas. At
this point all actions in the canvas need to be colour coded for the emotion layer to be
able to be constructed. The scale of colours should be same for the customer and for
the service provider. Other additional layers, like change of service costs can be added
as well. Now the canvas can be printed out or continued to work with on computer,
but nevertheless continued in co-creative manner. It is good to now and then cross
check coherence of each channel and to take journeys through the blueprint to find
problem areas (Polaine 2013).

After first constructing the service blueprint it will work as a communication tool
throughout the whole process but it is also updated and deepened continuously
during the project as new information and understanding is gained. It should also be
break into separate documents or to plural service blueprints to be able to provide
details of each separate sections of the service, as it is impractical to work with the
one large canvas. The importance of service blueprint is particularly emphasized
again in in the service delivery phase when it helps to verify the success of designed
services and to maintain them.

CUSTOMER JOURNEY MAP

Once the service blueprint has reached a level where most of the touchpoints, actions
and details are on their places, and the blueprint is tested by taking journeys through
it, those journeys can be compiled to their own documents as customer journey maps.
Also the user emotions, context and circumstances, motivations and earlier experien-
ces can be moved along or rather first copied and then detailed further from the ser-
vice blueprint to give more specifics and to make it easier for the designers and other
stakeholder group members to empathize the user. Several different maps should be
constructed to describe different kinds of user’s perspective of the service experience.
The customer journey map is a story-like visualized narrator describing what are the
consequences for each actions and emotions triggered by the actions.

In the design process stage of defining customer journey map can be even further
deepened and detailed with the results of service design tools personas and scena-
rions. The service design toolkit includes a simple customer journey map canvas to
visually clarify how the journey should be documented, but it is only indicative, as the
maps will vary a lot as they are produced as a result of service blueprinting, and each
blueprint needs to be first designed by the user to even start filling it.
Mind mapping tool is used to generate quantitatively a lot of ideas in the discovery phase of the process. It is very suitable for co-design sessions as the outcome of the mapping is even richer the more there is thinkers involved.

It is fast and easy to do but before starting, the theme for each mind maps needs to be selected. In the context of this game service toolkit the main ideas are chosen from themes brought up by the customer journey map or service blueprint. Basically each of them is a touchpoint from the player’s service journey.

After the mapping session is completed the ideas are documented, for example by photographing, and then analysed to form categorisation for potential ideas to be developed further in later stages. Mind map instructions and supportive illustrations are part of the toolkit.

To be able to define what ideas and service concepts are valuable and potential to be further developed they need to be examined from the users’ point of view. The service design tool personas helps to sharpen the idea of potential customers and to empathize them. Their most important task is to provide a communication and common understanding of the final user groups. Personas are usually created in the first stages of design process to define the scope of design and to provide a reflection point to be used in the later parts of the design process. Personas represent archetypes of service users each of them being a fictional character whose profile is gathered from several sources of information, for example from interviews with real users, data analytics, marketing research, and customer service communication archive.

The number of used personas cannot be decided until they have proceeded quite far, ensuring that all requirements of design are considered and in a balance within the personas. Personas are best constructed as a group activity in a workshop, opening discussions and providing shared understanding of user segments. Personas must answer to three questions to be successful: what are the user needs, wants, and limitations. A model layout of a persona is presented in the game service toolkit. It bases on guidelines given by Churruca (2013) but it has been simplified to suit for a generic game service, but it could and should be expanded as needed. Each element has instructions or examples to fill it and the simple visual canvas helps to assimilate what should be done.
Scenarios are built to deepen the understanding about the users in the defining stage of the process and to help designers to empathize the users. They require a lot of user insights to be believable and are useful since the user or a user group needs to be in the center of designing scenarios. Therefore user profiles tool is a good basis for building the scenarios as they are already built based on deep user studies. The aim of scenarios is to visually explore and demonstrate the experience chain that the user goes through while using the service and to concretize user’s service experience for the organization providing the service making it possible for them to explore the points that need to be improved. When time linearly combined together scenarios can formulate a storyboard.

Scenarios are written as short narratives describing a specific use situation, combined with describing drawings or images, where the user interacts with the game service. Game service designer or design team can either develop the scenarios and then present them to focus group to get feedback and improve them, or they can be co-designed together from the beginning. Participation is of course preferable. Finalized scenarios are added to complement the customer journey map. Scenario instructions and supportive illustrations are part of the toolkit, and a simple canvas is provided to help to get started on writing and drawing the scenarios.
PROTOTYPING

During the developments stage of the design process, different kinds of prototypes are built to test the service. They can be implemented in various means from paper prototypes to acting, whatever seems suitable in the context. Prototyping is a tool that is used similarly in both service design and game design processes, and therefore knowledge and practices are already familiar to the game developers. Prototypes offer means to discuss and communicate about the concept but as they most often are also user tested, they provide means to evaluate, analyze and to find both problems and points of success from the concepts. Only a short introduction is included to the service design toolkit combined with supporting illustrations.

USABILITY TESTING

Usability testing is used together with prototyping, since quite often it is a prototype of the service concept that is being tested. In the process of designing game related experiences usability tests are conducted during the development stage. It is used to identify usability problems but also to point out successful designs, and to collect qualitative data.

Usability test is not similar than playtesting, which is the game designers approach for testing game concepts. During a usability test one or more evaluator watch, listen and take notes while representative participant is trying to complete a task given to him as well as possible. As a contrast playtesting focus on ensuring that the game is fun, balanced and functioning as is intended.

Usability test has to be planned and it must have a goal. After the test is finalised, the notes are analysed, and results implemented into the design. Usability testing is one of the key components of the iterative process to sharpen the concept towards a great service, and therefore it almost always needs to be done several times. Short instructions for making usability tests are given in the service design toolkit.

COGNITIVE WALKTHROUGH

During the developing stage of the game service design process cognitive walkthrough tool should be used (Tassi 2009) represents to test the flow of the service design and thereby ensure the holistic nature of the concept. It suits well together with prototyping and user testing which are the main methods utilized during the development and it serves as a reference point for the other user test results.

One or more evaluators choose each one of the created user profiles as a starting point for the evaluation. Then the evaluators go through the service blueprint from the perspective of the chosen user profile considering the knowledge and skill levels of the users and all of the specific needs, motivations and expectations of that user profile. While the technique is being used the observations may be recorded straight to the service blueprint on separate sticky notes, but later on the whole walkthrough should be documented in some more permanent style of documenting, for example with combination of pictures of the sticky notes supported with explanatory text.

As a result the evaluator will find for example problem points, incoherent consequences and unsatisfying feedback that the user profile could experience during the service entity. Then the results are analysed and compared to the findings gathered from usability tests with real users. In the toolkit this cognitive walkthrough is presented in a form of instructions, and simple illustration to explain the text, but actual documenting forms or charts are not provided.
This chapter brings together all the previous chapters, which encompass the research project forming this thesis. This is achieved through demonstrating how the research objectives were met through the literature review and tentative development of the game service toolkit concept. This chapter concludes the research work by answering to the two research questions and in addition, suggestions for future work are discussed.
4.1 MEETING THE RESEARCH AIM AND OBJECTIVES

The objectives of this research was to clarify the meaning of service design in the context of games and to introduce how it could be utilized in the game industry when developing game related services. Additionally, the aim was to create a visually clear and understandable concept for a service design toolkit basing on the analysis of literature review. This was achieved by merging the knowledge from different fields of literature, and then developing a tentative game-service toolkit concept, that visually represents the user’s experiences throughout the whole game service chain, and therefore helps to form a better understanding of the game related services. The concept relies on existing service design tools but also to game design processes and methods to be easily adaptable for game developers and game companies.

4.2 ANSWERING TO THE RESEARCH QUESTIONS

1. How to use service design for designing game related services?
2. Which service design tools are the most suitable to be used as apart of game design processes?

The research revealed that service design shares some methods, tools and terminology with game design, which both eases the threshold of game industry to realize all the benefits and values that service design has to offer, but also causes confusion and wrong assumptions if the information is not delivered clearly and considering this issue. The research also revealed that attempts to design game related services can already be seen in the field, and the demand towards it is emerging. Some of these efforts are unfortunately debatable and may therefore be misleading. The best way to utilize service design methods and tools in the context of game industry is to modify such versions of them, which take into account the background and knowledge base of game developers. However, even without testing the concept with the target audience, it can be noted that understanding and beginning to use service design tools correctly is very challenging without help from a professional service designer.

An answer to the second research question is best provided in the chapter three, which explains the made decisions and describes the resulting toolkit. However it can be said that rather narrow selection of tools was encompassed in the resulting toolkit compared to the respectable number of developed tools in the field, to ensure the coherency and clarity of the resulting design process. By choosing the most commonly used service design tools it was also confirmed that those who are interested could easily find more information about each tool. On the other hand the chosen selection of tools contains in my opinion the most compatible service design tools compared to the game industry’s own processes and tools.

4.3 SUGGESTIONS FOR FUTURE ACTIONS

The most important topic to research next is the usability and suitability of the toolkit in the actual designing of game related services by game developers and game companies. It should be tested in real environment but also evaluated by scholars researching the topic and senior level game industry veterans creating the existing game services. As a result is should be designed further and then tested again, following the manners of iterative processes. One thing that certainly needs improvement is the instructing the use of each tool. It might be a good idea to make simple tutorial videos explaining how each tool is actually being used to improve the communication of the tool itself, and it is also a good way to show an example how the finished version might look like.

Eventually it should also be considered what is the format of the tool. Should it be possible to be used both in digital template version and as analogical print materials, since game industry seems to use both methods quite evenly. Some companies have paperless offices and all tools are used in clouds or online, but some prefer tangible paper versions and the hands-on vibe. Both of them have their advantages but also the negative sides. Paper versions are easier to use in a co-creative design events and participation of every member of the team comes more naturally. Digital versions on the other hand are much easier to document, share and their tidiness compared to messy sticky notes and illegible handwriting is appreciable.

This toolkit should be easily shareable to enable working with the toolkit collaboratively by almost anyone irrespective of skills. Therefore it should probably be online based. However none of available browser-based online diagram applications allow external templates as a starting point for the diagrams, and therefore they cannot be used for this kind of purposes. The online tool might therefore be necessary to be built just for this purpose.
REFERENCES


