

*“How can Dual-Track agile contribute
to a better design process and
workflow in larger teams?”*

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Abstract

This research conducted a research at Cybercom with focus on the project process and the work methods which were used. Due to design often being placed second to development during these processes, this research will look into different work methodologies that can contribute to a better structure, for instance the Dual-Track agile method. The aim was to solve how larger teams can benefit and get a better workflow with the use of Dual-Track agile. Drawing parallels with methods currently in practise for instance agile, Scrum and the waterfall method but also drawing focus on other methods like human centred design, agile user centred design and agile UX. The research was conducted using ethnographic and action research methods with observations and interviews. Continuing with a workshop where focus was on the design process and communication, resulting in a set of cards which aim to start discussions in the beginning of project as well as a need for a change of work methods, suggesting the Dual-Track agile method.

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Acronyms

The following acronyms are used throughout this paper.

UX	User Experience
UI	User Interface
UCD	User Centred Design
HCD	Human Centred Design
IID	Iterative and Incremental Development
MVP	Minimal Viable Product

1 Introduction

The field of interaction design has been developing for many years and still there are confusions as to why it is vital in the art of software and product development. With its focus on the user and his/her reaction when using technology, similarly the human-oriented design and its proposed definition; the understanding of desires, needs and motivations of users, along with an understanding of business and technical requirements. Interaction design is a humanistic approach that has its concerns primarily in the satisfying of needs and effect on human behaviour (Cooper et al., 2014). The most often occurring reason for a digital product to fail is because priorities were misplaced both from management and the development team and when there is a lack of design process and development take it into their hands to do both design and development (ibid).

Doing an ethnographic study on the subject at Cybercom Group, a Scandinavian based consultant company who for over 20 years have specialised in sustainable IT- solutions¹. From, to begin with, the perspective of an outsider and later on a team member gives the research a new angle which can deepen the understandings further. At Cybercom they use a work method called “agifall”, a mixture between agile software development and the waterfall method, in which project management was principally development driven. Proposing a change from the development driven agile method into the more comprehensive Dual-Track agile which focuses on both the development and design side of the spectrum.

This paper has had its focus on the process for a project goes through at Cybercom and realizing where in, said process, problems occur. The research has been done on site and the results have been put in relations to other methodologies, for example human centred design. Also, by looking at the problem from a Goal Oriented Design approach, explained by Cooper et al. (2014), where the focus in on individual’s goals and the reason why they interact with a product in the first place. As well as their expectations and attitudes towards the product, solutions can better be found that are more pleasurable to use.

¹ Cybercom.com, 2017

1.1 Research Area

Focusing on investigating the ways of working within companies where there is a problem area in placing design second to development, as well as looking more closely at how the design practice is used, and how the user experience is affected by using the work method agile product development. Moreover, examining whether there is another alternative which would be a better fit and benefit all aspects of the development team instead of focusing on just one.

The agile methodology is a popular choice of method within IT-companies because of its focus on the close working development teams and structure. In order to make the work more efficient, the use of a constantly updated task list is put in place where the team can get a more straightforward overview of the process (Yang, 2015). The method focuses on quick iterations in order to get fast results, although being constructed solely with the development process in mind and little regard for design and user satisfaction creates a problem when used in projects where both sides are active. Although some aspects of agile method have become slightly outdated in some workplaces due to how work is divided between team members. A structure that enhances the collaboration between design and development is needed.

This report will be an investigative text with a focus on how research and discovery is carried out within IT-companies, that have an active design team. There are some difficulties in implementing interaction design in agile work management because it is thought that they do not complement each other. The agile method has its focus within teams and the way they can structure the development tasks and assignments in a more effective and professional way. Which makes the process of adding an element like design which need flexibility to a framework where the structure is stricter, more difficult. Reproductions of this is that development often have to wait for design to be completed, due to the time put on understanding the problem and testing different possibilities (Hoda et al., 2008).

A potential solution to the problem could be implementation of the Dual-Track Agile approach with a start in a discovery track in order to gain a structure which would benefit all parts of the team. It would create a possibility for the user experience designer to find solutions and test them, parallel to the development and coding. Majority of the pre-study findings would be collected within the discovery track, such as the research done on the user and gaining

knowledge of the project in more depth as well as its vision. Thus, Dual-Track Agile would enable the team to build and work on ideas from these findings, as well as narrow them into processed and testable low-fi prototypes. When development would be involved in the process there would be a foundation for the project and whilst tests with users would continue, small parts of code would be implemented in steps, each improving the prototype and consequently update it until finally the finished product would be ready. When facilitating a better user experience, there is a greater chance of the result becoming more useful and being what the user actually wants and needs. Throughout this method the two parts run as parallel tracks which helps and supplement each other, further explained in chapter 3.3.

1.2 Purpose

The purpose of the thesis is to analyse the problem areas of agile work management as well as drawing parallels to the differences of Scrum management, a framework for developers where the work is divided into time boxes in order to keep track of progress and issues, within agile teams. The thesis will also analyse where, within this methodology, the problem lies with the communication and collaboration. It will look at what has been done to evaluate how to incorporate design in the Scrum framework and finding out what makes a team work with well working dialogue and good results.

At Cybercom they base their work in an agile methodology with Scrum planning, along with some influences from the Waterfall method. An aspect of the methodology is that design works a couple of sprints ahead of the development side in order to have the time to finish their broader and more detailed work, for instance pre-studies and user interfaces. Although at Cybercom it has become an obstacle in the process because that every time there is a question from development, design has to go back and re-evaluate their decisions made many months previous.

The thesis proposes a solution by changing from the hybrid “agifall” to a work method which supports a better balance between development and design. In the end, the one being affected by a faulty work method is the user and customer in the sense that they will end up with an inferior end-product. Consequently, the purpose of the research is to compare how the work is conducted and handled by the development team with the agile and Scrum methods as opposed to the results done by them when trying the Dual-Track agile method,

a process divided into two parallel cycles with one focusing on questioning product requirements and the other on iteration of small pieces of code (Yang, 2015).

Since the agile methodology is a popular choice within software development companies, the object is to discover whether they would benefit from changing to another work method. This is why this thesis will look at the problems, options and possible solutions within the time frame available. To propose another way of handling projects and see if there is a use for a discovery sprint in the beginning of a project, where all information about the user is collected and analysed for the foundation of a project.

1.3 Research Question

The flaws in the process of handling projects at Cybercom became more visible when being put into perspective of the concept Dual-Track agile and its principles. The constant interruptions of questions and seemingly unnecessary meetings make up for most of the working day, resulting in little to no design work being accomplished. The question to be asked is whether these issues are an effect of the agile methodology they are following or if it has a foundation somewhere else. By proposing a research to be made in order to discover the reasons and which alternatives that could be suggested, starting in the research question;

“How can Dual-Track agile contribute to a better design process and workflow in larger teams?”

1.4 Target Group

The intended target group for the research done within this thesis, is designers working in development teams practising their everyday work with the agile methodology concept. Although this research will be primarily based on the UX designers situated at Cybercom in Malmö, who are working in larger teams together with developers and management. However, the target group for the basic concept of the thesis is all developing teams who are experiencing problems with structure and effectiveness in the field.

1.5 Delimitations

The focus case of the research was the Cybercom office because of time restriction for the project as well as an insight into the processes gained from internship and employment. If not for this aspect further research would be done in order to understand the situation at other locations that are using the agile methods and if they are experiencing the same kind of problems.

Focus will be on trying to understand how their work is practised in respect to the currently used methodologies and to compare them to other theories. This will be done by understanding existing flaws and where the communication is lacking, followed by trying to find a solution to the problem. Furthermore, to evaluate if implementation of Dual-track agile would benefit the process or if there are better options. That, the research will be focused on an organization consisting of consultants, which could be different to an agency focused solely on design, will be kept in mind throughout the research and the results will be discussed in relation to this. The main project the research has been concentrated on is one of the larger projects dealt with at the Malmö office. However, the project is under a Non-Disclosure Agreement, preventing from presenting any further details or client information within the research. Still all participants within the thesis has given consent before being presented.

1.6 Contribution

From an interaction design perspective this thesis will contribute to making the work more effective and better for a designer working in larger teams. In demonstrating the issues which are present in many companies as well as the struggle UX designers have in them where design has not been prioritized. The focus has is to raise awareness of the importance of UX design within software development.

2 Theory

2.1 History of the Agile Methodology

The word agile derives from the Latin word 'agilis' which means to do (CBE Dictionary, 2018), and which can be seen in the methodology where the base concept is to create working software within iterations and constant improvements (da Silva et al., 2011). The roots for the agile methodology has come from iterative and incremental development (IID) which can be tracked back to the beginning of the 1930's (Larman and Basili, 2003). IID can be described as development of software systems where developers, if possible, can take advantage and learn from earlier, incremental, deliverable versions of the software. Key steps were to start with a simple implementation of a subset of the requirements and then subsequently enhance the evolving of implementations until the system was finalized. Along the way design modifications are implemented and functionalities are added (Larman and Basili, 2003).

Although it was not until the 1950' – 1960' that milestones were established for IID which have a lot of similarities to what agile methodology is today. During this period the waterfall method was also developed and used, in which the stages are set, and one should stop before the next one starts. The waterfall method, illustrated in figure 1, has its positive aspects, where the delivery scope is easier to accomplish because of the set building stones making up the process, another is that it might be easier for developers to have a complete picture of the design before the start of coding (Lotz, 2013).

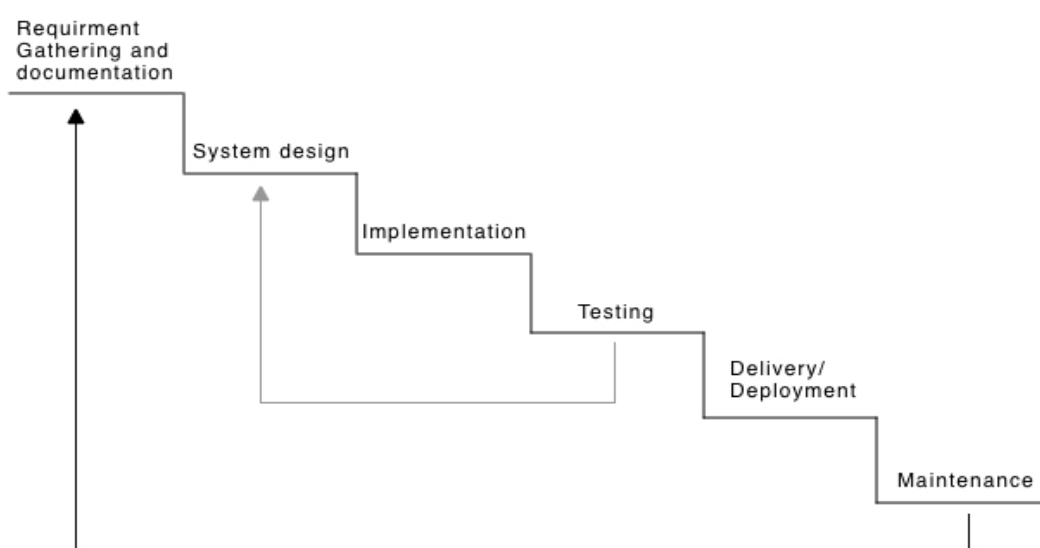


Figure 1. Modell of the Waterfall method with start of the process in the top with a flowing motion downwards to the end of the process.

In February of 2001, a group of 17 process experts representing different areas of expertise within development met up to discuss and narrow down methods and principles to find a common ground. During this meeting they set up the twelve principles that form the foundation of the agile methodology used today (Larman and Basili, 2003). The principles focus on the daily work within teams and the importance of face to face communication as well as regular reflections and adjustments of problematic areas in the work. The agile methodology has many similarities with Human Centred Design (HCD) where both methods focus on the end-user and the constant iterations (Read, 2017).

2.2 History of Dual-Track Agile

The area of Dual-Track agile is still relatively new to the field of project development, which means there have not yet been performed any extensive research on the subject. Although it has been discussed by for an example Sy (2007), who called it Agile human centred design, da Silva et al. (2011), also focusing on human centred design and the connection to UX. The most research, found in this thesis, has been by Jeff Patton who has done extensive research the field of UX within agile.

During a research of her own, Sy analyzed the differences and similarities within the agile and waterfall methods, done from the perspective of user centered design. She collected useful aspects from both methods and created her own structure for a new method called Agile User Centered Design, illustrated in figure 2 (Sy, 2007). Being the foundation for what is now called Dual-Track agile, which have the same principles only with a different title (Patton, 2017).

Differences between the waterfall method and agile methodology is the structure of a project. As Lotz (2013) explains, the waterfall method is clearly defined and separated in sections with a start in analysis followed by design. The next step is development and then the process is finalized with field investigations, using a visual product. In the agile method, however, the project is divided into time boxes measured in weeks, with focus on smaller parts of the project at a time. Problems which can occur when using the waterfall method, for instance, is the timing. This is because development is working faster than design which means they sometimes start on features which have no visual underlay yet (Sy, 2007).

One of the key principles in UX Human Centred Design is to notice design failures early and make changes as many times as needed in order to incorporate adjustments and end up with an iterated and best possible solution. In perspective to this, Sy (2007) started thinking of the method as two tracks where one would focus on the experience design and the other on development. In order to reduce unnecessary time and effort from the process, tests of the product start before coding - in contrast to other agile methods where coding starts from the start (see figure 2).

Another problem which occurred with other agile methods found during their tests was that the sprints were too short when testing and usability investigations increased. Also, to keep the design in focus and get the best result, the UX track should always move a few sprints ahead of development and work in small cycle steps, or chunks, within the design, putting the high-level design on the side until the end. This is to give the project a freedom of adding features as it goes without worrying about the whole, as well as with the chunks one can do different usability investigation in the same session and juggle more than one design and one investigation at a time (Sy, 2007). This new way of looking at the agile methods became the ground work for what is now known as Dual-Track agile and it was further spread around the world by Jeff Patton (2017).

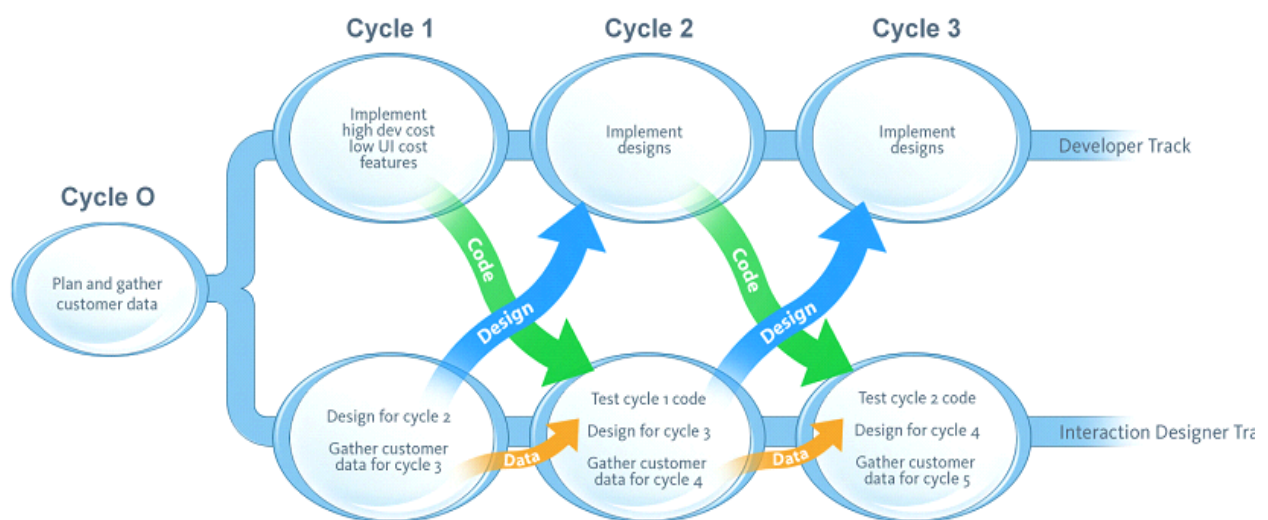


Figure 2. Modell of the Agile HCD method developed by Desiree Sy (2007).

In summary, this chapter opens up a question for how Cybercom should work within their larger teams, which method has the best qualities or in fact a mixture of them should be used. The agile method has a positive aspect in software development in empathizing communication and teamwork but provides no opportunity for design or a user experience focus. On the other hand, the waterfall method, still focused on the development, allocates a period within the process where all design work can be done. Still, the waterfall method has the unfortunate trait of being slow and difficult for iterations. Agile UCD with its close connection between design and development and cycle zero where gathering of data is collected (see figure 2) has the positive aspect of quick solutions through iterations.

3 Method & Methodologies

The research for the thesis will be based on Cybercom who works with the design and development of software solutions. It will be done as a mixture of an action research and an ethnographic study. In order to understand how they do their work as consultants within the field and what their position is towards problems and projects, an ethnographic view point will be added. This form of observational method will be done by going into the workplace and gain full understanding of the business whilst observing and listening in a non-direct way (Anderson, 2009). This form of study is often used when working with user centred design and co-design (Weston, n.d). The ethnographic study has borrowed its name from anthropology which means the systematic and immersive study of human cultures. The goal of an ethnographic study is to understand behaviours and rituals of people interacting with other people or with individual products (Cooper et al., 2014), and is beneficial in projects where focus is on communication and interaction (Anderson, 2009).

Using an ethnographic approach in the observations and understanding of the workplace where problems will come forward and be analysed accordingly is therefore significant to this thesis, as is the information from previous experiences will be implemented into the analysis. This is followed by the gathering of data, doing reflections and posing questions which is the base of an action research.

Action research is a method which focuses on the development of knowledge on the human purpose using a participatory and democratic process. Bringing together actionable and reflectional methods as well as theoretical and practical for the understanding of people within communities (Brydon-Miller et al., 2003) Which will be implemented in this study were the intention is to implement a better way of working together with both design, project management, development and customer, as well as the understanding of how individuals behave in relation to the teams.

Firstly, one needs to understand how Cybercom conduct their work in an interaction design perspective. A normal design process always starts with understanding the problem and a posing of a question, followed by understanding the vision of the customers and the user's needs and wishes for the product or service.

This is done by conducting interviews, surveys, observations and after which one can start creating a persona which will be the basis of the project and all questions will be closely analysed according to this summarized user. Subsequently, it is one of the more important steps in the design process, because it sets the tone for who will be using the product and be affected by the design and interactions implemented. Another very important step is the user tests, where one lets the customer and user try out different interactions or the finalized product in order to get answers to what works and what does not. Without these tests a product can be rendered useless as soon as it gets out on the market since it was made for those creating it rather than those meant to use it.

3.1 UX in the Agile Methodology

Kuusinen et al. (2012) observed that the manifesto with the twelve agile principles does not include or mentions User Experience or the inclusion of this into the process. Because of these new methodologies have been developed where bigger focus is on the inclusion of design and the user experience. One example is Agile UX. Chamberlain et al. (2006) discovered an issue with Kuusinen et al.'s (2012) theory, where there may be an unwillingness to understand the project needs as well as the users' needs when implementing Agile UX into a development sprint. Without understanding the design vision of the project, the UX designer might end up only doing quality checks and not focusing on the experience (Petrovic & Siegmann, 2011).

There are many reasons as to why designers and developers both benefit from working in close collaboration according to Budwig et al. (2009). One is because issues are found and resolved faster. Kuusinen et al. (2012), argues for it being essential in the process for a successful end-product and improvement of the user satisfaction. Although UX design does not follow strict agile and Scrum principles on all accords, both Sy (2007) and Budwig et al. (2009) recommends them to work at least one or two sprints ahead of the development team in order to have time to finish designs and have time for iteration before implementation begins. This results in less design waste, according to Sy (2007). However, several issues may arise in new projects, such as the lack of communication between UX designers and developers. If the project is not planned well enough, the time will not be sufficient and UX design side will not be ready when implementation is supposed to begin which affects the whole project. Therefore, by having a clear vision and definition of what the end-result should

be and keeping to it, the experience of the result will be better and unnecessary issues can be avoided (Kuusinen et al., 2012).

The main difference between if UX design is working according to Agile methodology or not, is where the focus is. In Agile projects the designer focuses more on the product than the design artefact, which it would be otherwise. They need to put their attention to choosing which kind of research should be conducted within a project and how much, how to align UX practices and Agile working practices and lastly what documentation to produce, how much and when (Rogers et al., 2015).

3.1.1 Scrum

Scrum is a sub-category of the agile methodology, which has a focus on the development side of a project and how to structure tasks in order to know who is doing what and when. It influenced the principles written in the agile manifesto (2001). In contrast to agile development, which focuses on teams and how they go about their day to day work, Scrum goes into detail about how to manage the work tasks and development specifics (VersionOne, 2018). However, this method is specifically constructed to manage the development, it did not include design which have been added on the side. This means the structure of the project development and its planning gets difficult sometimes because the design tasks differ from the ones on the programming side where time is difficult to estimate and so forth.

Although Scrum is only a sub-category of agile development, it has become so frequently used that sometimes the methodology is simply referred to as Scrum Project Development. How it works is that the team adapt their work based on current conditions instead of predicted conditions, to ensure the end-product will be as expected rather than changed over time. It is done by dividing the project in sprints, small periods of time usually of 2-4 weeks where goals are set up with each sprint as deadline. Starting with sprint planning in the beginning of the time period, followed by daily meetings where updates on the progress and obstacles are discussed. At the end of each sprint period there is a review and a retrospective where possible issues are voiced and made better for the next sprint (VersionOne, 2018). Tasks are decided upon within the teams and put into a Product Backlog. During the sprint planning session, tasks are prioritized and chosen which to move to development that sprint (Kuusinen et al., 2015).

The roles within Scrum are Product Owner, who is responsible for the management and upkeep of the product backlog; Scrum Master, who is the leader of the development team and makes sure the work is done on time; and the development team, the group of coders (Kuusinen et al., 2015). Sometimes there is a fourth person in the team, a Stakeholder who is the spokesperson for the customer (VersionOne, 2018).

3.2 Human centred Design

“The design process must start with identifying and thinking about real user needs. We should design around those—not around the way the ‘official process’ is at the moment. We must understand those needs thoroughly—interrogating data, not just making assumptions—and we should remember that what users ask for is not always what they need.”— [Gov.UK Design Principles](#)

Human centred design is a practice used as a complement to other design methods, not a replacement (Thomsen, n.d). HCD can be used on a larger scale for problems focused around people, as it is developed for people, with the intent on keeping them in focus (IDEO, 2015). Key principles within this method are to always keep an active involvement of the users with clear knowledge of their behaviour, desires and needs. Therefore, by keeping this in mind, the user will be more likely to use the product or service because they will feel a sense of involvement, which illuminates the feeling of being imposed.

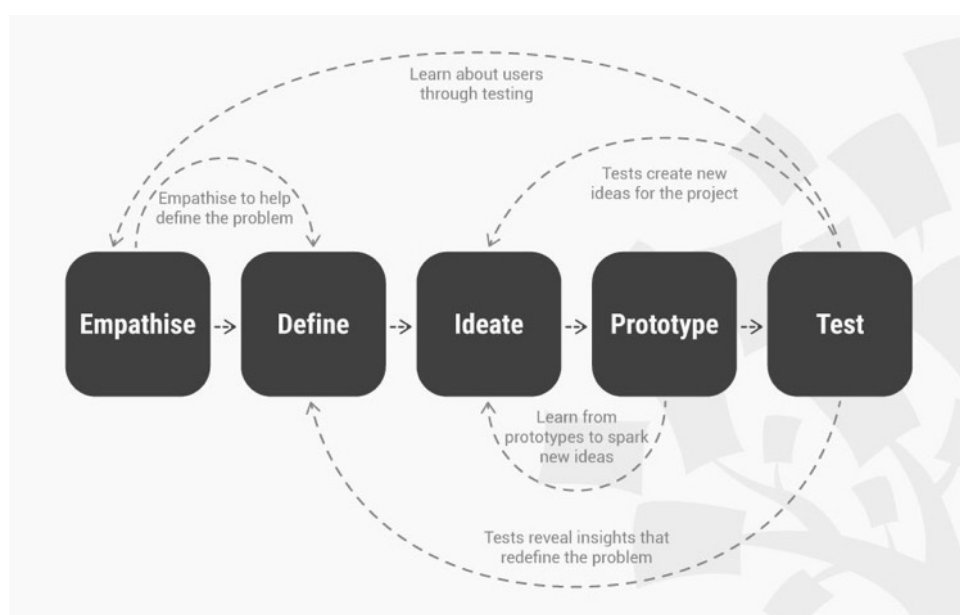


Figure 3. Illustration of design thinking process, adapted by interaction design foundation, (2018).

There are three important steps within HCD, according to IDEO (2015), described in their “a field guide to Human centred design”, which are the same no matter what kind of project it is - inspiration, ideation and implementation. Within the inspiration phase one gets to know the user by different interview techniques, exercises to understand their behaviour and wishes and possibly put oneself into the life of the user to really understand the small details which could easily be overlooked. Figure 3 shows the five-step process put forward by IDEO, which should be followed when using their adaption of HCD.

During the ideation phase one creates tangible prototypes which are at every step tested with the users (IDEO, 2015), who are to be kept in the loop throughout the whole process in order to confirm suspicions, clear confusion and to confirm how well kept the objectives have been met within the project both from a user and business perspective (Thomsen, n.d). The iteration will continue until it reaches complete satisfaction from the users. The third and last step is implementation where the idea is transformed into the product and put to use (IDEO, 2015). Another important factor when using HCD is the team, which should always be made up out of skilled people from different areas of expertise (Thomsen, n.d; IDEO, 2015).

“...and so we're now focused more and more on human-centered design, human-centeredness in an approach to design. That really involves designing behaviors and personality into products.” David Kelley, 2002

3.3 Dual - Track Agile

The term Dual-Track agile was formulated and made popular by Jeff Patton (Yang, 2015). The Dual-Track agile method is a version of agile UX where the work is divided into two tracks with different responsibilities. The discovery track, or cycle, focuses on understanding and questioning the project requirements while in the delivery track the continuous implementation of small parts of code is the focus. The discovery team usually includes a project manager, UX designer and an engineer, who work together to find understanding of the user, perform tests and iterate design, as well as receive customer feedback (ibid.).

The focus of a discovery track is to talk with users in order to reveal their goals and needs and then translate these into product requirements. With the use of research, which could be ethnographic studies or contextual inquiries, creating user scenarios, story mapping and

developing user personas. Including stakeholders into this phase will help prioritize features later on during the project. The most important aspect of the discovery track is to talk with the users and form an understanding of them, illustrated in figure 4. The next step is concluding what the end-result should be and then move towards it. By making rapid prototypes throughout the process and testing them with users as well as iterating them, it will be ensured a more valuable and usable end-result (Yang, 2015).

Not only are prototypes easier for users to test and understand, typically the developers appreciate it when there is a clickable representation of the UX design visions other than only user interface wireframes. Testing new implementations and features with prototypes should be done during every iteration in order to reduce design and development time and to ensure a better end-product. During delivery track, designers should be involved and help with features and provide feedback as to when the product do not match the intended design (Yang, 2015). The two tracks are presented in figure 4, illustrating where the different tasks within a project development should take place when following a Dual-Track agile method.



Figure 4. Shows the difference tasks performed within the two tracks in Dual-Track Agile. Adapted by Yang, (2015).

When working with Dual-Track agile it is important to remember that the tracks run parallel and that they should constantly interact with each other and for the best process, the two teams should work together and complement each other. The key for this method is thus good communication, constant updates and teamwork. The principle of staying one step ahead of development is the same here as in the agile methodology, although a difference with Dual-Track is that the sprints have no predefined length. A discovery track can take longer depending on the project, which is why being flexible is important (Yang, 2015).

Within the discovery track, the top track in the process, a start is to have a session between the lead designer and the lead engineer to put together a collaborative product backlog with interactions and sessions. This is succeeded by research about the user and research area, for instance with stakeholder interviews, user research, in their natural environment followed by story mapping, creation of personas and scenarios. The delivery track on the other hand, is where the prototyping and user tests are conducted. First step in this track is to quickly decide on what should be delivered in the end, as well as how to get there. Both informal and formal tests should be made to gain as much feedback as possible within the track, and constant iteration of the prototype until it is polished and turned into a product (Yang, 2015).

3.3.1 Discovery track

Due to the fact that the start in a discovery sprint is important when using the Dual-Track agile method, it has been found that Google Ventures have developed their own version of a discovery sprint. An intense five-day work period where the process of getting an idea into a product is in focus. Knapp et al.'s (2016) vision is that if the five-day template is followed and done right, at the end of the week an iterated and tested prototype will be made, which would act as the foundation for the rest of the project. Which could be used within the Dual-track agile method at Cybercom as well to make the process easier and more efficient.

The primary step on the first day is to set a goal for the sprint, alternatively the whole project, in order to have a clear path throughout the project. It is important to keep it clear and make it a focal point for the duration of the week. In the event that any ideas stray from the main goal, they should be excluded or changed. The second step is to make a map of the whole process, with focus on where in the user journey there might emerge problems or interesting interactions. On this day meetings with experts within the field, individuals who work within

the focus area or know a great deal about the user in question, should be scheduled and performed. As a result of the first day one specific piece of the problem can be chosen and be further developed during the week. The second day starts with an inspiration session where all participants look through existing solutions and collect usable material to share with the group, followed by sketching done in a variety of ways. All targeting solutions to the specific problem were decided on the previous day. A plan for upcoming user tests and invitation of participants are also done on this day. The third day is about deciding which solution from the sketches should be continued to be improved and eventually be made into a prototype and tested. The choice should be based on which solution and idea have the best chance of achieving the long-term goal decided on the first day.

The sketch is evolved into a storyboard, where all scenarios and interactions between user and product are clearly defined. The fourth day is spent building the prototype, which could be a simple paper prototype which is later iterated into a low-fi clickable prototype. It is significant to keep the prototype simple, with all major focal points clearly defined, as it helps when testing with users to receive more relevant feedback. The fifth and last day is completely dedicated to tests, Knapp et al. (2016) recommends performing at least five tests with different users in order to evaluate the results correctly and be able to decide if the idea is a success or a failure (Knapp et al., 2016).

3.4 Theories of new ways of working

When discussing changing a work method there are many factors that should be considered. For example, when changing a work method, the change may be positive in regard to the design aspect, while it may have the opposite effect on development. The main focus on this thesis, however, is how to introduce the change and the effect it may have.

One aspect which is believed to be a problem is the communication between the different roles. At Cybercom they follow Scrum which advocated a daily meeting for updates and a chance to present possible problems or thoughts, although it is my belief that these meeting do not have the same effect on the team that it should. As Lucy Schumann (1987) writes, the art of conversation is not only a transfer of information. This is simply the smallest part of communication; the bigger part is the model the listener forms in their mind. Which also is where most misunderstandings occur, the conversation has to be comprehensible for both

parties. Here I believe, does one of the bigger issues at Cybercom present itself. The parties within the teams speak as though to their fellow colleagues within their own competence area, not for someone that might not know in the same terms. It is believed that by changing from the Scum method, a new way of conversation might be put in place which would not only remove confusion but reduce the constant questions and misunderstandings between design and development.

"...builds a creature from the disparate pieces of dead humans and brings the creature to life with the then-new technology of electricity. Of course, we know this is not actually possible. You cannot create life by sewing together random body parts. Yet this is what software developers attempt to do all the time. They add good features to software, one at a time, and then wonder why few users love their product. The heart of the conundrum is that developers are using their construction method as a design tool, but the two are not interchangeable." - Alan Cooper (Patton et al., 2014)

Cooper et al. (2014) brings to attention the problem of a designer's role in the product development. He argues for a change when it comes to the thought of design and how product decisions are made. The definition of UX and interaction design is often misused or misunderstood where management beliefs design only to be a "visual facelift" but if used correctly, design can identify user requirements, define detailed plans for behaviours and also the appearance of products. As Cooper et al. (2014) says, design provides "product definition". One of the biggest mistakes which could occur within a project is when design is underestimated in time or importance, resulting in development trying to do the design instead. Although they lack the discipline of how and why decisions should be made. As has been observed, when the sprints do not match and both parties of the team are tired of questions, it happens that developers take control and try to find their own design solutions. They might be small but without knowledge about why decisions should be made around the product, this only creates issues which have to be solved, usually by the UX designer. The lacking factor is the communication and sufficient documentation.

4 Design Process

4.1 Field studies

4.1.1 Observation

Observations are a way to gain insights into human behavioural patterns. Specifically, within a design aspect it is a method in which to gain both knowledge and find empathy for the users. Targeting detection of the signals between individuals but also between human and a product, which can be local, discreet and specific and then interpreting them in relation to the object of the observation (Kolko, 2014). Intending on putting the findings from the sessions spent at Cybercom into perspective of this, with a focus on empathy for the design team members.

The observation for the thesis have been conducted throughout the research period at Cybercom and have been narrowed into portraying the perspective of the design team in relationship to the development side and the customer. Added onto these were findings and observations done months previous during an internship at the company as well as employment within the project specific for the research. When collected, the findings were analysed according to time frame and relevance to the research in the thesis.

During the course of the internship done at Cybercom, some details were identified. An example of one is how tasks were structured and handled within a project, along with how the communication was conducted in relation to the size of the projects and team. As Cooper et al. (2014) mentions the most effective way for collecting accurate data about peoples' behaviour is not speak to them but to observe them. Although to gain the most qualitative data, is to do both observations and interviews to understand how they view their own behaviour in contrast to how they actually act. When doing observations, one has to look at not only how they object acts but also try to understand why they are doing it as well as to how they feel (Kolko, 2014).

When discovering the communication was lacking, the feeling which was observed was a frustration for mistakes being made as a reproduction. Problem areas mentioned and discussed most often between the UX team has been how the structure of the project could be improved as well as the work-flow.

Constant interruptions from development and seemingly meaningless meetings which had none or very little relevance to the UX side. Another finding was the frustration of every single little task being an issue which had to be brought to project management and customer for validation. Creating an unnecessary tension within the development teams and continuing these struggles for months on end the frustration only grows which consequently affects the end result.

“There are so many other viewpoint and opinions to be considered, which also creates a problem” – Participant A, UX designer.

An interpretation from the observations is that there is a high ambition within the team, although the follow through has been notably more difficult. Also, as stated in the quote by a designer within the project, the requirements from customer and stakeholders have to be taken into consideration which can reduce the creativity and create problems. When ideas have been brought to light, the feedback was noted to be positive for the most part. However, there were no action taken after the idea stage, instead was the solution put on hold and some were eventually forgotten about. A possible solution would be to find a way for smaller ideas to be collected and eventually worked on as well as a better way for handling larger projects which would also mean a possibility for a closer working team. A way for change can be improving the design process with more design thinking, a structure for looking at a

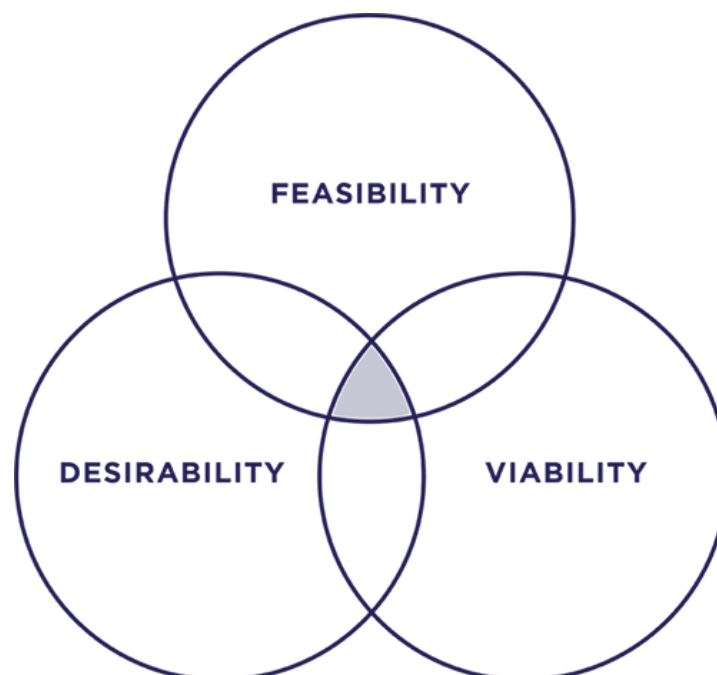


Figure 5. Modell the three design perspectives within design thinking. Illustrated by IDEO U (2018)

problem from three perspectives. These three perspectives are if the solution is desirable from a user's perspective, technologically feasible and economically viable (IDEO U, 2018), as shown in figure 5.

The agile process which is followed at the moment at Cybercom, was when it came the handling of projects, observed to be interpreted differently by all designers within the team. Still having the proposed method behind them, they had found their own way of handling both new projects as well as ongoing ones. By using "Minimal Viable Products" (MVP) when developing their solutions within the project, creating a solution as quickly as possible with the most basic functions and visuals in order to launch and test directly with the users. When launched usage patterns can be detected and iterate after usage in order to have a process with little chance of failure (Kolko, 2014). In being a consultant firm there are struggles for the design team to be valuable in the eyes of the customer. The design process and pre-study research which should be followed for the best end-product and result, is not always deemed as important from the customer which means the process is more difficult for the designers. In the sense that a period of usually a couple of weeks has to be done in half the time or less. During the course of both observation periods, only a few idea generation sessions were noted.

In addition, an observation was made that while working in smaller teams within the project and with the agile method, a disturbance in the work flow was created. Although the empathy between development and design was positive, the constant need for meetings which mostly focused on the code aspect of the project made them feel futile in these meetings. The feeling of annoyance was expressed more than once in these events. Another issue was how the documentation of user interfaces or designs were presented and how the engineers had difficulties understanding them. Leading to misunderstandings and communication problems.

4.1.2 Discovery Sprint Workshop

One hypothesis for the thesis was that the teams at Cybercom do not prioritize the progression of the smaller ideas within projects. The ideas are thought of and collected but rarely worked on after that. As a result, a possible solution was tested in the form of a workshop with three participants, two designers and one developer. The workshop was based on the previously mentioned five-day sprint (see 3.3.1) developed by Knapp et al. (2016). The purpose of the session was to discover possibilities of the team, based on the

three participants, in addition to create a space for creativity in a limited time. According to Knapp et al. (2016) the same results could be achieved in five days as a couple of months if the process was structured. Which would be tested if a similar result would possible to do in an even shorter period of time.

Firstly, a meeting was set up with two designers, the same as would later would contribute in the workshop, in which what topic would suit best for the session. The intention was to make it relevant for all parties involved, in order to make the results easier to connect to future analysis of how they behaved and thought during the workshop also for the participants to have a result which could be further developed.

The meeting concluded that a focus on micro actions, which could be implemented into all parts of the project, would be the focus of the session. This made a perfect topic since it was a feature they had had in mind for a longer period of time but had not yet taken the time to discover where to implement or use it. Micro actions are small animations or communicative feedback to make an application feel more alive and gives the user a form of feedback after an interaction (Cousins, 2015).

The purpose was to discover if there was a possibility of this form of design session would be rewarding and helpful in their work. By scheduling a couple of hours where sole focus is on a specific problem and finding a solution for it. In following a set number of steps with specific tasks to nudge the session in the right way. The workshop was held at the Cybercom office and the participants were two UX designers, participants A and B, along with a front-end developer, participant C, who all are working in the same project, although in different parts of it. With different areas of expertise, they each made a contribution to the discussions and could look at the problem differently and see unique solutions. Furthermore, by having a developer present during the early stages of a design discussion aids in the elimination of ideas which could be difficult to create or would be too time consuming in development.

Starting the workshop of with introducing the subject of discovery sprint and defining micro actions as a help for both bringing attention to details and give an inclination as to functions without the user fully noticing. Followed by a discussion on what the goal was for the session, where would focus be within the application as to where would the implementation of micro actions suit best. At this point during the session it was discussed why the need for the

implementation existed, which it was discovered to be for two reasons. The first being that the participants felt the application was a bit tedious to use and the second was that some features within the application was not noticed and used by users. As previously mentioned the three parts of a HCD (see figure 5) needs to be present for a product to be successful.

Although the participants were working on different projects similarities existed between them, in which they could find ideas for improvements. It was an interesting viewpoint from the observational seat, because there was a way for them to find solutions to individual problems whilst discussing a completely different subject. To discuss a common obstacle, what was faulty within the application and what already existed they found solutions to their individual project. Possibilities opened up by having someone to talk to about it and being able to give each other advise and suggestions.

“It would be good to sometimes talk and exchange ideas in between us, both in the [design] team and with development. In order to figure out what solutions are plausible or difficult.” – Participant B, UX designer

Focus during the session had been put on idea generation, not as in a full five-day sprint, where finding a finished solution and test it with a prototype is a big part. Which is why the majority of the workshop was focused on the primary discussion and finding a goal and problem areas which could be put into questions. This was followed by some quick sketching divided into two parts, one being rough idea sketching (figure 10) and the other crazy 8 (figure 9), where the objective is to sketch eight different versions of the same basic idea under time pressure. In stressing your mind to make one sketch in under a minute one does not necessarily have to create the most appealing solutions, but it accesses a different type of solutions, which could be the source of great continuous discussions. In both exercises the participants came up with a number of solutions to their problems, although not all being applicable to the situation and some were crazy ideas. But nonetheless, all generated in a continuous discussion of other solutions which made the workshop rewarding in that sense. Example of topics from the discussion was on what the benefits from for example a micro action on a button would have within their project and what they could all draw from it. Another thing which could be drawn from the session was that they might not all be fully comfortable with sketching and finding solutions this way, but it did help to push creativity and compel them to discover new possibilities.

The process finished in a short interview where the participants could voice their thoughts about the session, which were positive. They liked to have a set time to sit down and discuss options and possibilities to solutions they had already had in mind beforehand. Also, to have a set time for sketching gave them a possibility to explore their own idea generation, for example when doing crazy 8's (Knapp et al., 2016) you have to force yourself to find new variations quick and not embed yourself in detail.

“I do the same when I'm alone and going to solve a problem. Start sketching a little, and then I do a new version of it and then another. They create a spark for new ideas.” – Participant B, UX Designer.

As a conclusion, the workshop in its entity as Knapp et al. (2016) meant it to be performed, does not work at Cybercom. In the sense that firstly there is no time to put a whole week into creating a foundation and a prototype, secondly it could be difficult because when starting new project, the teams are not as big as would be needed for this kind of exercise. They are working on larger projects which can expand over several years, and upkeep is a large part of it. However, some kind of idea generation session is necessary for a better flow of new ideas for interactions and features, both in new projects where this should always be the case but as well as after some time in longer projects to not get comfortable and lazy in their work. By just setting aside a couple of hours, some underlying issues which have existed for a while resurfaced and just within this short period of time a possible solution was discovered.

A significant observation from this workshop was that although designers may struggle with their projects, they are reluctant to share minor issues with the UX team. A hypothesis is that it might help to go into detail as to why the issue happened in the first place if it has relevance to the project. Subsequently, the weekly meeting that the UX team has, might not be as efficient and helpful as it could be, because the focus is not always placed on the continuous learning or sharing of knowledge. One point brought to light was that the participants of the meeting feel like they often have little to say or feel it to be an unnecessary subject for the whole group. In order to optimize the meeting, everyone should take the time to explain what happens in their projects so that everyone is up to speed on all parts of the project at all times. Not only would it benefit team work and extending their competence outside of their own work, but also communication is an important part of the Dual-Tack agile.

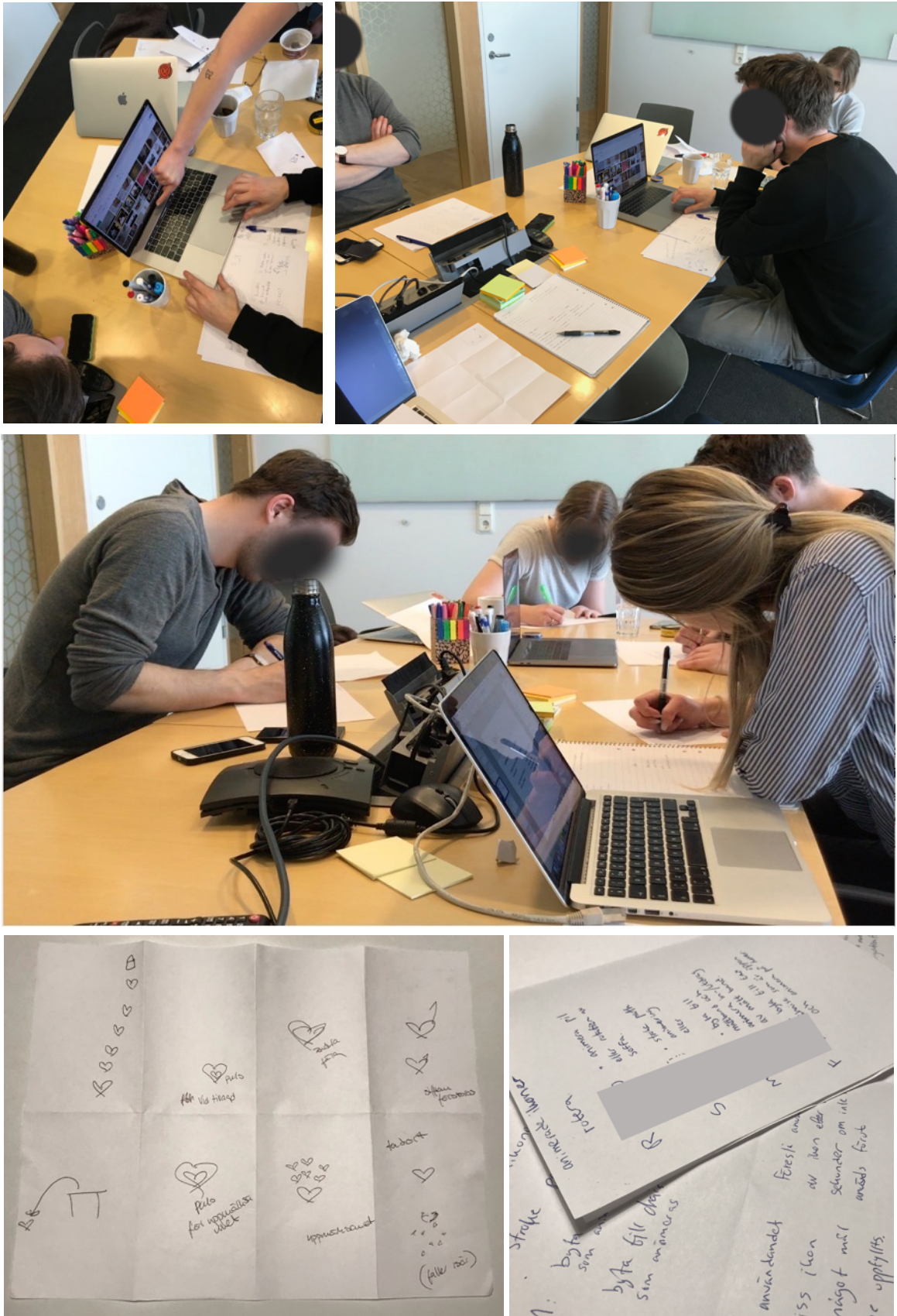


Figure 6,7, 8, 9, 10. Selected pictures from the Google Ventures' workshop. Participants looking for inspiration, discussing and sketching. Also sketches of crazy 8's and rough sketching.

4.2 Concepts

After doing research at Cybercom and realizing that there are some problems with communication and sharing of knowledge, a couple ideas have been formed with the hope of solving this predicament. In order to implement a new way of working the foundation of a good team work have to be in place, both between design and development as well as within the design team. Knowledge sharing and taking advantage of each individuals background and history within the field, is a vital aspect. Also, by learning from each other and asking for advice makes for a closer working team with a greater chance of good results. A possible opportunity for this is at their weekly meetings where the focus already is on UX matters. Just by opening up for a chance to share problems and designating this meeting for possible idea generating sessions could be very lucrative and contribute to a better design process.

Found during the observations is that being a consultant and designer can cause problems with the process, both the objective of the project and the customer can vary a lot which results in a constantly changing method of working. If a project spans over a couple of weeks or a couple of years, the same assortment of exercises cannot be performed because of time restrictions, which affects the process and result. As well as how the teams are structured and how they work together is affected. Which is why the concept of set principles for the work should be created and proposed for use at Cybercom in order to help in grounding a form of structure. This guideline will act as a first step to the implementation of Dual-Track agile and focusing more on integrating design in the whole process from start to finish. For instance, implementing a phase in the start of each project were a goal is set and problem areas are decided on could help in guiding into the right mind-set.

4.3 Ideas

4.3.1 Cards

As mentioned the first step in the process for Cybercom to incorporate the Dual- Track agile work method is to make the design part of a project work better and incorporate more of a design thinking aspect. An idea for doing this is inspired by IDEO (2003) and their method cards which are a tool for inspiration and gaining a different perspective on problems. Implementing a predetermined workshop in the start of each project with set steps, in the hope that it will become an action done without thought which will bring them closer to a

better-working method. The cards would be used on different occasions within a project when the feeling of creativity is decreasing, and new inspiration is needed.

The aspiration behind the cards is to remove the easy access to technology and digital aids, which have contributed to the physical aspect of problem solving being forgotten. By simply adding one physical aspect into the idea and goal setting process one can remove the constant interruptions and distractions computers and smartphones have on these sessions (MethodKit, n.d.).

The cards would be divided into six parts, the first being focused on finding problem areas within the project. In this step they will not only be brought to light but also discussed from a view point of the user and customer, as well as evaluated and chosen from. The Second step is goal setting, where from the chosen problem a goal for the project can be decided on. Thirdly, the process and steps needed to be taken, in order to reach the goal should be discussed and worked on. Together with what is needed for the process, in terms of resources and supplies. To keep in mind when following these steps is to keep to realistic measures and keep the creativity high. The forth card would give ideas for sketching and creative solutions. Using pen and paper can help realizing solutions which are difficult to put onto words. The fifth and last card has the purpose of tying the whole process together with a critique phase. Collecting the thoughts and ideas from all participants, the intention is to result in one solutions which should be the object for the rest of the project.



Figure 11. Illustration of proposed method cards.

4.3.2 Proposed Solution

Proposing the implementation of Dual-Track agile into the development driven environment at Cybercom, would have to be done in small iterations – just like a design process. One of the most important aspects in Dual-Track agile is the team and the different competences they can bring to the process. Venturing an implementation of a new methodology at Cybercom will not only affect the project development team and process, but also the way the company will be presented. Being a consultant firm, all participants of the team have to be desirable in their competences, then adding a methodology to their qualifications could only be a positive ramification.

Going through with the structure change, all participants have to be motivated and open for new possibilities. Although the best way of doing the switch would be to start with one team and work through smaller iterations for a smooth change. The best way would be to start with a completely new project although if there is no possibility for this, another option would be when adding a new feature. The first step should probably be for the design team to go through all existing ideas for the project and collect them in an idea backlog where they could be worked on and then to involving the tech lead for an evaluation of the entries and stories before presented to the whole team. By reducing the number of people who sees the backlog as a start gives the lead designer and developer time to discuss positive and negative aspects of the different stories and ideas where eliminations and improvements can be made. After the evaluation the team will make prototypes for all obvious cases and ideas in order to get used to the process of making simple prototypes as a way of iteration and testing, within the team or with users. When the team has the process figured out and accustomed they can start implementing this way of working to other features and increments within the project.

When these first and smaller iterations have been tried and found successful, one can start implementing the bigger parts of the Dual - Track agile process, for example the way sprints are structured and the roles which might have to be altered and changed. The intention of doing small changes when attempting to exchange the work methods, are to not affect any ongoing projects and to give the team members a chance to get used to the new structure as well as how the work should be conducted. Introducing the Dual-Track agile principles to the design team during their weekly informative meetings could serve as an aid in a smooth transition and also since UX designers act as a sort of middle man between customer and

development. Which is why it would be beneficial to start the implementation in the design team and use them as experts during the change.

5 Discussion

Dual Track agile is still a relatively new term within the agile methodologies which means the research done on the subject and the academic level of it is not substantial. Although the research done is based on companies, who have tried the method in the hope that it would be an upgrade from the current agile method, especially when the UX design aspect of software development has become as vital as it has. In the light of this, this thesis is only proposing a recommended solution, on which more trials and research must be made. Thus, a large part of the proposed solution focus on a smooth transition, done by implementing small parts of the approach at a time. By giving all team members a chance to find their role, the teams would be given a better chance of producing good and more efficient results even during the change.

The teams at Cybercom will benefit from using the Dual-Track agile method instead of the traditional agile, since UX would be given a chance to work the way it should. The agile methodology gives no room for the design aspect, which creates an issue at Cybercom where design is a big part. However, Cybercom's current work style is also influenced by the Waterfall method which is compatible with UX. This thesis suggest that this influence is not enough to encourage design and creativity, since the work could be more effective and creative. The use of the Human Centred Design aspect with a focus on design thinking at the start of a project provides this opportunity. Within the Dual-Track Agile, the first track is constructed on the use of research and understanding of users which is the key factor of design thinking. Add an aspect of a discovery sprint to this, as tested in the workshop, and you have a base for the discovery track in Dual-Track Agile. Even though the teams at Cybercom conduct tests every so often, they should be made more frequently and in smaller steps of the process. By keeping Dual-Track agile in mind may help Cybercom because the methodology requires many and frequent tests and iterations. Being close to the customer and user is a requirement which will not only benefit the work process, but also the results. The second track has influences from the agile side but is the stage of coding and need no larger structure changes from the development team.

Scrum has the benefit of organizing a project in a good way which is globally known, and even though it is intended for developers, it could be moderated in order to better fit both developers and design. One idea would be to rethink the scrum planning and stand-up

meetings, in order to make them more understandable for both sides. As noticed the language which is used in between developers and their code is almost impossible to understand, if not being a developer yourself. The communication is essential when working in larger teams and when not, everyone is doing the same kind of profession. Mentioned in chapter 3.4, the art of communication is understanding of what the speaker is saying. When the use of words which are internal for only coders, an exclusion to everyone else is created. In order to improve this, all internal terms and phrases should either be explained in detail when spoken of or formulated in another way. This can be done by all parts of a team, which is why the need for a mutual understanding is necessary.

Sprints in Scrum and the agile methodology can vary between a couple of weeks to a couple of months. Although the basics is that they are divided within the project and within them sprint goals are set up, with individual tasks in order for the project to move forward and to keep track of what is happening. These sprints are extremely helpful when working with software development, because without them no one would know what has been done and by whom. In order for UX/UI design to be helpful within projects using agile, one must work a couple of sprints ahead of development in order for them to have time to finalize their work before remaking it in code. Still observed at Cybercom, the head start of two sprints does not always help design because when development starts with the part of the product design that was finalized weeks previous, there will be problems when development will raise questions about the specification of design details. And while this is happening the designer is working on another part of the problem which means they have to think back and remember why and what they decided on in the first place. It creates a continuous problem. If this problem is compared with the sprints in Dual-Track Agile, where the discovery track and delivery track work more in harmony with each other with a close working combination and the sprints can vary in lengths depending on how they go together, a possible solution could be found. Although it might create a difficult aspect for the coders at Cybercom who are very set in their way of working and the time limits in place. However, it is important to consider the positive effect a change may have. By using a new method, the developers may find that existing problems could be solved by being a part of the whole process from the start. Thus, instead of waiting for the finished model, they can implement parts of code and create a better flow to the process.

When creating a new project, the team want it to be as user friendly as possible, it is therefore important to include a period of time, where the focus is placed on researching the targeted audience, such as their requirements and preferences. In order to realize which issues that could arise later in the process, a rundown of all possible solutions should be considered and analysed when making the foundation for the project. The design sprint may help this process., if done right the team can avoid unnecessary obstacles, and particularly if developers are included in the early stages to provide an insight into which ideas are plausible and which may be difficult to implement in terms of production. The whole process will, as a result, become much easier and effective. This is why it would be positive for Cybercom to use a structure like this. As demonstrated in the workshop held with both designers and a developer, ideas could quickly be eliminated from the list just by asking the developer which ideas were the most realistic and applicable to a situation. I believe that as time is valuable in the eyes of the customer, a problem for the design department at Cybercom is that they have to reduce time to the minimum on some exercises. This means cutting back on valuable information being attained. If, however, such a session would be implemented at Cybercom at the beginning of every new project, or when new parts are added to an ongoing project, valuable time can be saved at later stages. After the initial research stage, at least one participant from each team, should sit down and have an idea workshop in order to establish what is plausible ideas and where the focus should lie. A significant part of these workshop would be simple paper prototypes to test basic concepts with colleagues. Cybercom may already be doing these sessions on a smaller scale, but by inviting more people to get involved, the project may lead to more effective results. As a result of these sessions, it would make work more efficient, with less questions and interruptions, leading to a met deadline and a better work morale.

The way they are using iterations at the moment with doing Minimal Viable Products can be useful, although it is not testable until it has been coded and produced. This takes time, after which the team need to await the results to proceed or consider alternative ways. If Dual-Track Agile was used, however, one would start with simple prototypes where one analyses small interaction in an easier way, and also get an overall impression of how the product is used. Still you have to gain access to users in a different way which might not always be possible for bigger product and demanding customers. Therefore, this method is deemed not to be the most efficient for Cybercom to use.

This thesis has come to the conclusion that although the current method at Cybercom may work effectively in some ways, certain changes can be suggested. Dual-Track with its focus on the harmony between the two tracks and between design and development, as well as quick and effective iterations with a focus on taking small steps in order to reach the final result, can help Cybercom with their issues regarding structure and communication. However, the results are preliminary, and more research certainly needs to take place. Cybercom may conduct trials of the methods, by implementing parts of them on a project at a time to see which effect they will have. It must be noted, however, that since the designers and developers at Cybercom are unused to this model, it may take some trials before it will become effective. But it is the belief of this thesis that the long-term effects for Cybercom will be positive.

6 Conclusion

The posed question “*How can Dual-Track agile contribute to a better design process and workflow in larger teams?*” might be difficult to get a complete answer to, although after the research done within this thesis the answer would be yes. Dual-Track agile contributes to a different focus within projects in comparison to Scrum and agile, which in the perspective of larger teams of consultants would be preferable. Instead of a development driven team build, the change in work method would open up the possibility for a better joint effort within each project where not only more time should be on doing design work but in including every member of the team into this process.

Although in order to incorporate Dual-Track agile in a successful way, one has to address the first problem presented in the report, the wanting design process where a solution is found in the discovery track with adjustable sprints. The second being the communication between the team members, the choice of terms and phrases which could cause confusion in both the project and in meetings. Solving this problem is simply the knowledge of it and that the team members respect one another on a level where they will explain themselves better to their team members.

In conclusion the Dual-Track agile method has been found to be a good alternative to the traditional agile method as well as “agifall”, in creating a better working and efficient software development team. Although in order for Cybercom to change methods, a couple of issues have to be dealt with first, one of which being the UX design team to regain their basic principles and use a more practical approach to the problems they are faces with.

6.1 Self-Critique

What could have been done differently would be to expand the research and base it on more than one company, in order to get a fuller picture of the situation. Also, more focus would be put onto the people contributing in the research not as much sole focus on the problem. When doing the design process, implementing small parts into one team in order to see how it effects their process and results. These findings would be analysed and taken into consideration for later implementation. If the research had not been conducted at a consultant company, there would have been a greater opportunity to get a closer contact with the customer and stakeholders.

6.2 Challenges

A possible challenge which could be the size of the teams working at Cybercom. In case the decision is made to change working methods, it has to be tested with one small group at a time because otherwise it could affect ongoing projects. Another challenge which could present itself is in case there will be a dissatisfaction of the new roles which have to be made and filled. The structure is different in Dual-Track agile as mentioned before, the roles existing within the tracks are different from the ones in the agile and Scrum methods.

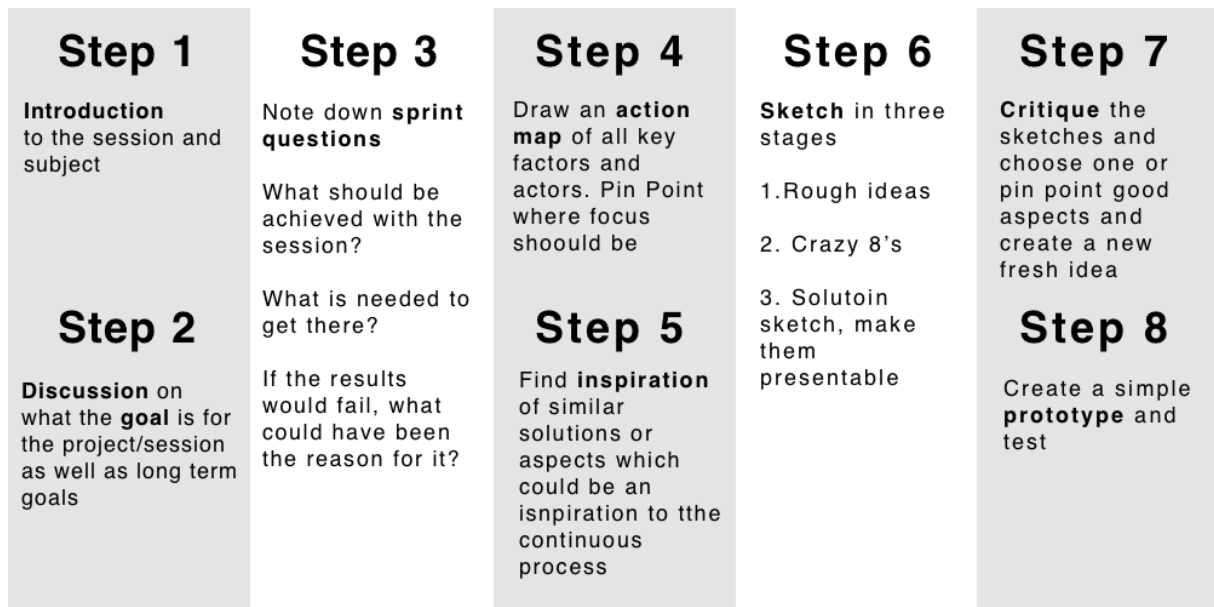
6.3 Future work

What should be done in the next step if there were more time for research, would be the continued field research at other companies. Both similar to Cybercom in the form of consultant firms as well as other design studios in order to fully understand the implications a work method like Dual-Track agile would have on them. Also, I would like to formally do the implementation and discover if my theories for how the work was affected was indeed true. To know if the team benefited from a different structure and how the workflow was changed. I would also want to continue the research and look at other methods which could be a solution, and which effects it would have on the team. As a next step I will supervise editorial workshops of the Dual-Track method in order for the implementation to go through.

I would also like to continue the research within design and consultants, if there are other companies which have experienced the same kind of problems or if it is focused on Cybercom. A complete survey would be done to find exactly where and why the problems occur and if they are all similar to the ones at Cybercom.

7 Appendix

7.1 Agenda Workshop



Figur 12. Steps for the Google Ventures workshop held at Cybercom with three participants.

7.2 Interview during workshop

7.2.1 Introduction Questions

- Which project are you working on? What is your role?
- How many are working in your team?
- How would you describe your way of working within the project?
- Is working in a scrum framework with sprints lucrative for you?
- How close to the customer would you say your work is?
- Is there a framework for how to handle new projects at CG?
- Would you say there is something missing in the process?
- Is there something you would change if it was possible?
- How often are the designs tested with users? In which stage of the process?
- How productive would you say you are? Is there something you would want to change?

7.2.2 Ending questions

- What did you think of the agenda?
- Was it lucrative to use these tools for your projects?
- Would you be able to use this in your current projects?
- What was good/bad?

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