Defining a framework for collecting customer needs using Jobs-to-be-done theory and Outcome-driven innovation methodology

Case study: Janssen, pharmaceutical company of Johnson & Johnson

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Laurea University of Applied Sciences **Abstract**
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From pharmaceutical company's perspective, innovation, and innovativeness, both in product and services, are becoming a necessity to match the volatile and ever-changing external environment. At the heart of developing new business models, services and possibly products, are customers. For a pharmaceutical company, the customers can be healthcare professionals, patients as well as payers or politicians. Still, methods for describing and discovering customer needs, or involving customers in product and service innovation is challenging for many companies. In this thesis and case study, the objective of defining and discovering customer-centric needs is researched through jobs-to-be-done theory and a framework inspired by Outcome-Driven Innovation (ODI) approach. ODI's objective is to identify innovation areas from customer's job-to-be-done perspective at the earliest steps of innovation processes. In this case study of the pharmaceutical company, the process for identifying customer needs in the context of defining a treatment plan is presented. Firstly, 6 customers were interviewed to identify in the form of job-to-be-done steps and desired outcomes. Through the interviews, over 30 customer needs were identified. In the next phase, the customers evaluated the needs in a survey based on the importance and satisfaction, leading to an identification of most potential innovation areas. These innovation areas and customer needs propose a starting point for the development of innovative services, products, and new value propositions for the Case company. As an outcome, a framework for continuous and repetitive customer need identification is presented. The case study advances the understanding of defining, describing and documenting customer needs in pharmaceutical context. Also, the thesis offers contribution from the methodological perspective for customer-centric innovation management in pharmaceutical industry.

Keywords: customer-dominant logic, jobs-to-be-done theory, outcome-driven innovation

Contents

1 Introduction

People as humans have always evolved and changed, and the speed of change is only increasing. “Only constant is change”, is touted at the corporate events for employees scrambling through changing work environments and processes, volatile economic situations and most importantly more and more individualized customer needs and expectations. From the first quarter of 2020, global pandemic has turned our worlds upside down, and at the same time, changing how the customers, as people, behave. Moving into post-pandemic era means that corporations need to re-calibrate their offering to new customer needs that have more than likely shifted. Survey done by McKinsey (2020), states that the global pandemic had already sped up the adoption of digital technologies by three years in Europe. Maybe even more interestingly, this digital leap is increasing the number of digital products and services. The adoption acceleration rate for digital offerings was measured by McKinsey (2020) to 7 years in Europe. In Finland, Terveystalo (2020) reports similar acceleration in digital offering development. For example, Terveystalo reported that the number remote appointments grew from 20 000 remote appointments during busiest months in 2019 to 11 000 remote appointments per day in 2020.

Alongside the change in work environment e.g., remote working, fast tracked technological development and demand for online services, the change in customer needs and expectations, including new habits created by the pandemic, is expected to be here to stay. 62% of the respondents to the survey done by McKinsey (2020) believe the changes in customer needs and expectations will stick in the post-pandemic era. This poses the question, what are the customer needs and expectations an organization needs to cater post pandemic? It is seemingly obvious that if the major trends such as digitalization, and serious events such as COVID-19 pandemic have increased the speed of change in customer needs, there is also an increasing need for collecting, analyzing, and explaining the new or changed customer needs.

Another major trend in corporate strategy and marketing is customer-centricity. Already in 2005, Bain & Company (2005) surveyed 362 firms and reported that 80% of the firms believed they delivered superior experience. The big caveat in the study was that the customers of these firms reported that only 8% delivered superior experience. Forrester (2016) study stated that 72% of firms answered that customer experience is their top priority. At the same time, Salesforce (2020) has reported in their “State of connected customer” report that 66% customers expect companies to understand their needs and expectations. It is fair to say, the need for customer centricity is there.

1.1 Background

This thesis presents a case study done for a company Janssen Finland, which is a pharmaceutical company, or subsidiary, of Johnson & Johnson, hereafter referred as *the Case company*. The Case company is a local organization with local leadership team consisting of 7 core board members. In Finland, the company employs approximately 70 employees and contributed to Johnson & Johnson Finland's turnover, as one of three subsidiaries, of 156 million euros and profit of 4,4 million euros in 2020. The local operating organization has been divided into 4 business units that cover different therapeutic areas and products. Each team has a product specific Brand manager, customer group specific Key account managers and therapeutic area specific Medical advisors. Each team also has shared back-office functions, supporting them in business operation tasks.

Traditionally, pharmaceutical companies have concentrated in manufacturing, marketing and ultimately selling medicinal products to patients through healthcare professionals. In the company's business strategy, created in 2021, it is stated that as an operating environment Finland has unique opportunities and needs such as good access to customers (healthcare professionals), good innovation climate and share of voice driven market. As key strategic drivers the company lists tailored customer experience, collaborative innovation culture and strategic partnerships.

The author of this research has worked in the company for over ten years and has followed the rise and discussion of customer centricity. As mentioned, traditionally pharmaceutical industry can be viewed as a manufacturer of medicinal products which are marketed towards customers i.e., healthcare professionals. During the recent years, the company initiated a Europe-wide customer-focused innovation program rooted in design thinking. The company also developed new job positions such as customer engagement manager and customer marketing manager and shifted portion of the key performance indicators towards customer experience. Still, many of the key business performance indicators concentrate on product specific metrics and as described earlier the business unit teams still partially are product-based.

The case study for this thesis was initiated as part of the findings from the innovation program. As part of the innovation program, local operating companies were requested to collect and submit customer-centric innovation ideas to the European center of excellence for further evaluation. Out of 120 submitted ideas only 11 were evaluated as customer centric. Locally in Finland, no innovation ideas were submitted. Following the discussions with customer facing employees and few leadership team members, the author of this research concluded that there is no common way of describing a customer need and not enough resources to concentrate on collecting them and taking action.

The innovation program introduced the design thinking model proposed by Hasso-Plattner Institute of Design at Stanford (Innovation for customers, 2018). The d.school model consist of five stages: emphatize, define, ideate, prototype and test.

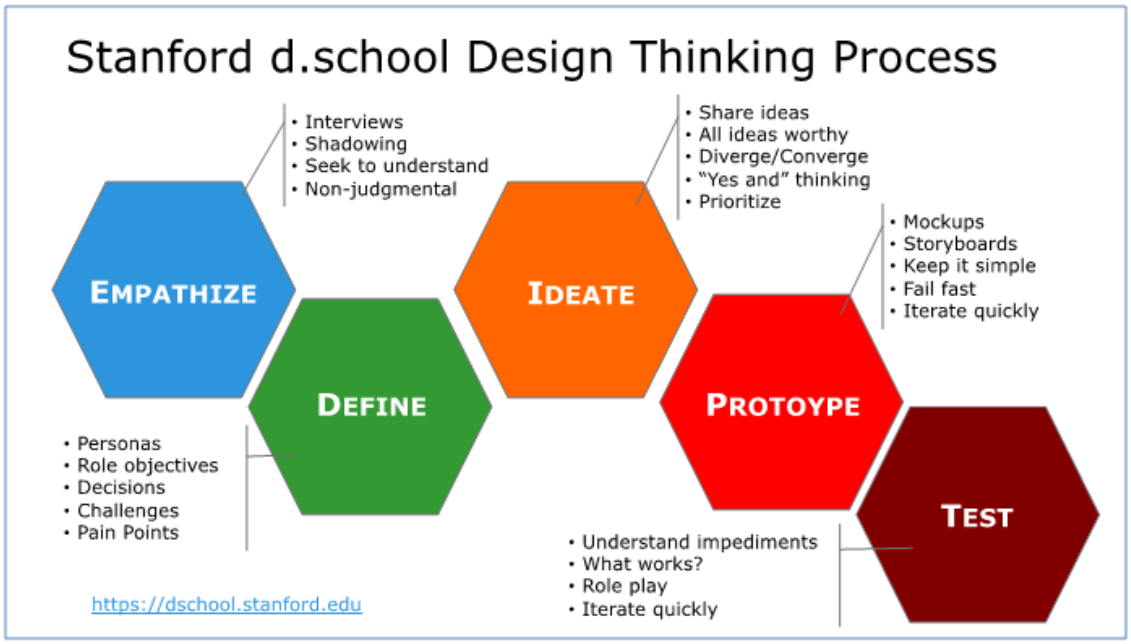

Figure 1: Stanford d.school design thinking process (Innovation for Customers, 2018)

In the Case company, the define and especially empathize steps were lacking knowledge and tools. There were no common practices or routines in uncovering customer needs that could be further defined and developed into ideas and concepts. As a conclusion, it was decided that the case study should concentrate on designing a framework for defining, collecting and analyzing customer need(s) that have potential for customer centric innovation.

1.2 The purpose and the objective of the thesis

The purpose of this research is to develop a framework for identifying customer centric innovation opportunities utilizing jobs-to-be-done and outcome-driven innovation principles. The status of the Case company is studied from the perspective of service-dominant logic (Vargo&Lusch, 2016) and the thesis discusses a mindset shift towards customer-dominant logic (Heinonen, Strandvik & Voima, 2013; Heinonen&Strandvik, 2015). The objective of this thesis and case study is to combine jobs-to-be-done theory and outcome-driven innovation principles into an organizational process that can be continuously used within the Case company for uncovering customer needs and innovation opportunities in a unified manner.

As the objective is to root the case study in customer need, the thesis will discuss customer needs through Jobs to be done theory (JTBD theory). JTBD theory provides a framework for categorizing, defining, capturing and organizing the customer needs, and explains how customers measure their success in executing their job to be done (Ulwick, 2016).

Christensen, Hall, Dillon and Duncan (2016) state that the goal of successful innovation is to help customers solve their problems and to make progress while addressing reasons holding them back. According to Ulwick (2005) customer requirements is the leading factor that stands out as driving force of customer-driven approach to innovation. Jobs-to-be-done theory is the framework in the thesis that guides how the input for those requirements is collected and turned into product and service ideas, ultimately pulling the focus from the customer to the customer need i.e., the job the customer is trying to do.

If Jobs to be done theory presents the theoretical framework of this case study, the Outcome-Driven Innovation (ODI) approach, presented by Ulwick (2006), is the innovation process. ODI process consists of eight steps and is designed to help companies in achieving growth in their core markets, easier access to new known markets or simply discovering totally new markets. In this case study, The ODI process was tested with the company's team operating in oncology therapeutic area.

The main research questions of the thesis are:

1. How effective is the jobs-to-be-done theory in describing customer needs in pharmaceutical industry?
2. What type of innovation opportunities can be found by using outcome-driven innovation principles?
3. How can jobs-to-be-done theory be used in pharmaceutical company?

As a result of the case study, the thesis will present the outcomes of ODI process in the form of identified, customer centric, innovation opportunities and an adjusted process for combining and documenting different approaches to jobs-to-be-done theory and different types of customer needs. From the design thinking perspective the case study will present the developed process for replacing the emphatize and define steps of d.school design thinking process. The case study concludes in a how-might-we question that is backed up by the developed process, customer-defined needs, and innovation opportunities.

1.3 The structure of the thesis

The report is divided into five sections. Firstly, the topic and context of the report is introduced under the section Introduction. Secondly, the report describes the theoretical base and key concepts of the thesis: Dominant business logics, the Jobs to be done theory, service innovation and Outcome-Driven Innovation framework. The third section will explain the practical part of the case study in three phases: 1) How the ODI framework and processes was executed and validated with the team in the company, 2) Presentation of innovation opportunities identified using ODI process and 3) Discussion and improvements for making the ODI process fit the Case company. In the fourth section named Results, the improved process

will be presented as the functionable version of ODI process alongside with recommendations on tools to be used to running the process effectively. Lastly, the report discusses the benefits of proposed approach in the Case company and further research possibilities.

2 Literature review and key concepts

The literature review will present the research and findings of key theoretical concepts of this thesis.

Firstly, the review discusses different dominant logics of business and marketing. Dominant logic is the driver behind business; a perspective that is a mindset or a worldview of the business and a set of tools to accomplish business goals and base decisions on. Thoughts and actions are influenced by this business perspective (Heinonen & Strandvik, 2015). This review briefly describes the goods-dominant logic and its challenges from a historical point of view and concentrates on the emergence and application of two more recent dominant logics: Service-dominant logic and Customer-dominant logic.

2.1 Goods-dominant logic

To understand the mindset and business logic of a traditional pharmaceutical company, this paper will describe the traditional Goods-Dominant Logic and compare it to more customer-centric logics, namely Service-Dominant Logic and Customer-Dominant Logic. The trajectory towards customer-centricity starts from studying the past, G-D logic, and describing why a manufacturing firm needs to move away from it, and how the research and literature has evolved the business logic towards logics that transcend the goods through S-D logic towards C-D logic.

Goods-Dominant logic concentrates on units of output making it a manufacturing or old enterprise logic. For a G-D firm, production, and exchange of goods i.e., manufacture and distribution of products, are the core of its business logic. Goods-Dominant Logic is based on the perception that value is transferred in/through goods at the point where exchange happens, i.e. exchange-value.

G-D logic and its challenges can be broken into three categories considering different centricities: goods centricity, firm centricity, and exchange-value centricity. Next, I will present a brief description of each.

Goods centricity

As described above, G-D logic concentrates on the manufacturing of goods and then selling them. According to Lusch and Vargo (2014) this transaction should be looked at from the perspective of a customer or beneficiary. The buyer of a drill is most likely not interested in the machinery, but the actual hole it can produce for him/her. Lusch and Vargo (2014) argue that the customer seeks solutions and experiences. In their opinion the business logic should be that the goods provide a mean for an end-solution, in this example, a drill provides the hole.

Firm centricity

In the G-D logic, the firm is in the center of the economic exchange. The firm proactively innovates, develops, produces, and sells the goods, instead of proactively producing goods and services to a customer need. According to Lusch and Vargo (2014), firm's most innate characteristics are its desire to minimize risks and maximize profits. Firms are seen to act in a "market" that is perceived as passive, “out there” and comprising of "customers and consumers" who are the providers of profit. Compared to the aforementioned challenge of goods centricity, this firm centric challenge can conclude that the firm is not the central actor of exchange. Instead, firms should be considered as concentrations of actors helping to solve problems associated with the exchange of their individual advantageous abilities. Similarly, the market should not be seen as passive but instead as continuously changing representation of actors bettering their well-being. Lusch and Vargo (2014) conclude that this shift in perspective does not diminish the role of the firm but demands for a shift in firm's role in value creation process.

Exchange-value centricity

Third of the G-D logic's main challenges is the exchange-value centricity. According to Lusch and Vargo (2014) it implies that a firm offers or transfers value to the customer as part of an exchange or transaction. This is the main difference between exchange-value and value-in-use. G-D logic dates to industrial revolution and to Adam Smith, "the father of capitalism" who realized and acknowledged value-in-use but concentrated on production and exchange-value since that was thought to be the main source of economic wealth for England. (Vargo & Lusch, 2012) Also, in G-D logic, the description of roles in exchange can be seen problematic - producer versus consumer. It implies that there is a party who creates the value for another party who consumes it. The challenge with exchange-value centricity lies in the perception that the value is transferred in the exchange, instead of in the use of service or product. Lusch and Vargo (2014) suggest that the value is not created in the exchange, but in the consumption or use of the product, good or utility offered as part of the exchange.

2.2 Service-Dominant logic

Lusch & Vargo (2004, 2014) build their S-D logic on the premise that every transaction or exchange can be considered as a service. A salesman manufacturing and selling fishing gear is not only selling the rod and a hook. He also sells the knowledge of how to i) build the rod and a hook -combination and b) how to use them as well, as a service. The service provided transcends the simple transaction of goods. This is the main notion in understanding the S-D logic. A firm does not only sell goods to a customer or consumer. Instead, it applies its knowledge to a good or utility when manufacturing it and sells it to a customer while serving the customer's needs.

Lusch and Vargo (2014) explain in their book Service-Dominant Logic: Premises, perspectives and possibilities, a foundational part of S-D logic related literature, how they found that many of the G-D logic most founding assumptions were being questioned and that a competing, or transcending, model was emerging. In their search for new perspective on marketing and practice, the research has gone through many updates. Originally, they identified eight foundational premises (FPs), which later developed, first into ten, and later into 11 FPs (Lusch & Vargo 2004, 2014, 2016). Four FPs, out of the first ten, capture the essence of Service Dominant logic, according to Lusch and Vargo (2014). In their theoretical paper "Institutions and axioms: an extension and update of service-dominant logic" (2016), Lusch and Vargo describe the 11th foundational premise which makes the fifth axiom of service-dominant logic. The most recent versions of these axioms and foundational premises are below described as five axioms of S-D logic:

A1/FP1	**Service is the fundamental basis of exchange**
FP2	Indirect exchange masks the fundamental basis of exchange
FP3	Goods are distribution mechanism for service provision
FP4	Operant resources are the fundamental source or strategic benefit
FP5	All economies are service economies
A2/FP6	**Value is cocreated by multiple actors, always including a beneficiary**
FP7	Actors cannot deliver value but can participate in the creation and offering of value propositions
FP8	A service-centered view is inherently beneficiary oriented and relational

A3/FP9	**All social and economic actors are resource integrators**
A4/FP10	**Value is always uniquely and phenomenologically determined by the beneficiary**
A5/FP11	**Value cocreation is coordinated through actor-generated institutions and institutional arrangements**

Before explaining the axioms and foundational premises, this paper describes two important notions in the S-D logic's lexicon. These are service (instead of services) and the actor-to-actor perspective.

2.2.1 Why service instead of services

As mentioned above, one of the foundational premises of S-D logic is the notion that every transaction is an exchange of service. All economic exchange is transcended by service exchange. There is a fundamental difference between selling goods compared to serving the exchange partner's needs. Historically, service or services have been described as everything else that the goods are not or intangible goods. Lusch and Vargo (2014) move away from the word services, the plural version of service, because it implies that there is a unit of output attached it. The singular word "service", on the other hand, implies that there is a process within the exchange, an actor doing something for the beneficiary, which requires an application of knowledge and skills. Therefore, the S-D logic discusses service as an application of competences for the benefit of another entity.

2.2.2 Actor-to-actor (A2A) perspective

When approaching the exchange from service-for-service perspective, the distinction to producers and consumers in G-D logic becomes challenging since it implies that there is always a producer of a good and value, and a consumer that consumes that value. Considering the abovementioned axioms of S-D logic, this one-way value chain and concept of value-in-exchange does not match the perspective S-D logic. Instead, every transaction is an exchange of service where there are no separate producers and consumers. In their article in 2004, Lusch and Vargo called the different parties in value creation with names such as enterprise and customer. In their effort to move towards more general business and marketing logic, the customer and enterprise words were changed to the word 'actor' (Lusch & Vargo, 2014). An actor is a more general term and emphasizes the non-deliverable nature of value. All actors (enterprises, firms, consumers, organizations, individuals) have a role in value cocreation through resource integration and service for service exchange.

Axiom 1: Service is the fundamental basis of exchange

The first Axiom, Service is the fundamental basis of exchange, introduces the two types of resources: operant and operand. The operant resources are the knowledge and skill applied into the good or service for the benefit of another actor (consumer). On the other hand, operand resources are described typically as physical e.g., raw materials.

Lusch and Vargo (2014) argue that fundamentally every exchange between actors is a service. Lusch and Vargo (2014) also build the first axiom on four other foundational premises. In short, the axiom 'Service is the fundamental basis of exchange' also implies that indirect exchange masks the fundamental basis of exchange (FP2) i.e., transactions including money where money acts as a "promise of future service", goods are a distribution mechanism of service provision (FP3), operant resources are the fundamental source of strategic benefit (FP4) i.e., knowledge and skills are the source of competitive advantage, and that all economies are service economies (FP5).

Axiom 2: Value is cocreated by multiple actors, always including a beneficiary

While the first axiom concentrated on the exchange of goods and services, and argued that every exchange is a service, the second axiom concentrates on the emergence of value. In G-D logic, the value is seen to be created in the production of a good and transferred as the part of an exchange between manufacturer and consumer. Lusch and Vargo (2014) argue that, instead, the value is cocreated by the interaction of multiple actors and that this process always includes a beneficiary. They also argue that the value is not created within the firm's processes. Instead, the value is created in the context of the usage. In this context, the value is created in combination with other resources, provided by other providers, over time in a continuation of other social and economic exchange. This context also describes the foundational premise seven and foundational premise eight; Actors cannot deliver value but can participate in the creation and offering of value propositions (FP7) and that a service-centered view is inherently customer oriented and relational (FP8).

Axiom 3: All economic and social actors are resource integrators

Lusch and Vargo (2014) describe that the sources of resources are determined by the network of resource-integrating actors that a specific actor is in. The resources are found in networks of private sources (family, friends, self), market sources i.e. through other actors through barter and economic exchange and in public source such as communal and governmental sources. Most often, the resources are found and integrated in simultaneous service provisioning from all the aforementioned sources. In layman's terms, this means that each one of us is an actor, a bundle of knowledge and skill, who receives knowledge, skills, and operand resources from our network of other actors and applies them in value creation.

The value is cocreated through the integration of the resource networks in different combinations, facets, and intricacies, and can be direct in an exchange between actors or it can happen indirectly through the resources and actors providing the resources in a network of other resource-integrating actors.

Axiom 4: Value is always uniquely and phenomenologically determined by the beneficiary

With the fourth axiom, Lusch and Vargo (2014) describe how the beneficiary or actor experiences, perceives, and determines the value of a service or good differently. The value is experiential, and the value propositions are a result of a unique resource-integration and experience i.e., different for each actor and can only be determined in his/her context.

Axiom 5: Value cocreation is coordinated through actor-generated institutions and institutional arrangements.

Since their initial article introducing Service-Dominant logic (Lusch & Vargo 2004), Lusch and Vargo have increasingly zoomed out their approach from a dyadic exchange i.e., the firm-customer exchange. In 2014, Lusch and Vargo described a service ecosystem as "a relatively self-contained, self-adjusting system of resource integrating actors connected by shared institutional arrangements and mutual value creation through service exchange". This update is their step towards service ecosystems that can be described as configurations of people, technologies, and other resources that interact with other service systems to create mutual value. (Lusch & Vargo 2014, Maglio et al. 2009)

The fifth axiom was added in 2016 in a publication by Lusch and Vargo called Institutions and axioms: an extension and update of service-dominant logic. The axiom focuses on the role of institutions and institutional arrangements in systems of value creation, in so called service ecosystems, and is particularly interesting in the scope of pharmaceutical industries where the actors are part of multifaceted network and ecosystem with institutions and institutional arrangements.

Lusch and Vargo (2016) describe institutions in S-D logic as humanly devised rules, norms, and beliefs that enable and constrain action and make social life predictable and meaningful, and as institutional arrangements between interrelated institutions. Institutions are not organizations, but more of a set of rules and norms of the environment and ecosystem. For example, laws, social norms, and conventions can be considered as institutions. Lusch and Vargo (2016) argue that institutions are important because human actors have limited cognitive abilities. Institutions reduce thinking and enable actors for better service exchange and value cocreation. On the other hand, the downside of institutional facilitation is the ability to perform without thinking which does not include reevaluation of the institutions, which then can lead into ineffective dominant logics.

S-D logic can be considered as a narrative for cooperation and coordination to establish the cocreation of value. Institutions have an important role in providing the cornerstones for this cocreation process in complex and resource-integrating ecosystems that foster service-exchange (Lusch & Vargo, 2016). With the addition of the fifth axiom, Lusch and Vargo (2016) try to break the misconceived boundaries of S-D logic by describing how it moves through different classes of value propositions and types of exchange, and how the S-D logic framework can be applied on all types of exchange. The fifth axiom looks at value cocreation and overlays institutions and institutional arrangements on a single actor's value creation. In other words, if value emerges in use or context, the fifth axiom considers how that context and use if affected by institutions such as laws, norms, and beliefs.

2.3 Customer-Dominant logic of service

One of the founding principles of C-D logic is that marketing is not merely a department within a firm, but instead the foundation for business. C-D logic can also be described as marketing and business logic grounded in customer understanding and reality where offerings become part of customers' lives. (Heinonen & Strandvik, 2015)

Compared to Service-Dominant logic, Customer-Dominant logic (C-D logic) concentrates on the customer's activities and experiences and on the role of providers in this context that build into customer logic. The offering of services in today's world keeps growing and diversifying – exactly for this reason the understanding of customer perspective, customer's way of perceiving value and their way of choosing providers is increasingly important. (Heinonen & Strandvik, 2015)

The C-D logic tries to move from provider-dominant logics such as goods- and service-dominant logic and puts the customer in the core of the business logic. This perspective focuses on how the customer embed the service in their processes, instead of emphasizing the interaction between the provider and the customer. Heinonen and Strandvik (2015) state that:

"Customer-Dominant logic stresses the activities and experiences of customers beyond customers' perceptions of offerings and market interactions. Further, C-D logic does not contrast products to service but considers both products and service as the basis for value"

C-D logic discusses the how, where and when value is created in the value creation process. It also describes what the value is based on and who determines the perceived value.

Heinonen, Strandvik and Voima (2013) explain that value is not created, but instead it is formed through customers' behavioral and mental processes when customer interprets his/her experience and reconstruct his/her own reality where value is embedded. In this

reality, which is not limited to the interactions and service of the company, the customer combines his/her own experiences spaces, such as biological, physical, mental, social, geographical, and virtual spaces. These spaces reflect the customer's position in their uncontrollable ecosystem and life sphere. This is also reflected in the answer to the question of when value is created. Considering the customer's own reality, the value is created before, during and after the service encounter i.e., value-in-experience. This also then means that the value is affected by the customer's experiences in the past, present, and future.

Heinonen et al. (2013) also continue that the value is not based on the input of the service provider e.g., what the service provider does or how the service interaction is conducted. Instead, the customer creates the value consciously or unconsciously in relation to his/her cumulated reality and ecosystem, at a specific time, in a specific situation. Heinonen et al. (2013) also argue that the value is not only determined by a singular customer. Instead, value creation can emerge in a potential value landscape or ecosystem where the individual is not alone, but also the customer ecosystem that refers to network of actors, activities and practices shaping the experience. Experiences do not happen in isolation, but instead they are interconnected to the realities of other customers.

Customer-Dominant logic argues for a different view of value creation than value-in-exchange (G-D Logic) or value-in-use (S-D Logic). Heinonen et al (2013) state that value formation can also be a passive process. As mentioned, the formation process takes place overtime, so it has a longitudinal aspect to it and it accumulates over time based on the customers past, present and future. Heinonen et al (2013) use a trip to the dentist as an example. This service encounter is affected by customers memories, experiences shared by others, attitudes and behavior towards dentists and dental care. It is important to realize that today's customers have many different roles within one day, each role affecting their thoughts, feelings and actions, and ultimately the formation of value.

While understanding the mechanism of promoted customer value formation process, new opportunities and insight into service strategy, service design and service innovations can emerge within a company (Heinonen & Strandvik, 2015). C-D logic introduces the customer as the main stakeholder but does not concentrate on customer-provider interactions on any level, but more on the customer's usage and appliance of services in their everyday life. As part of this focus, companies should be increasingly interested on how they can be involved in customers' lives.

Heinonen and Strandvik (2015) build the C-D logic on five essential features: 1) business perspective, 2) customer logic, 3) offering, 4) value formation and 5) context.

Business perspective

As mentioned in the beginning of this chapter, marketing can be viewed as a function or a department in a company or as a strategic foundation of the entire business. Heinonen and Strandvik (2015) state the C-D logic is fundamentally a marketing perspective which goes beyond the limited functional role. C-D logic includes the interpretations of service included in S-D logic and the more traditional view of service as an output of provider activity. The main difference to other logics is the fact that in C-D logic, the customer is in the middle of focus. Therefore, the products, service, costs and growth are secondary to customer-related aspects.

Customer logic

According to Heinonen and Strandvik (2015), customer logic is a sum of customer's actions, practices, preferences and decisions. Customer should be considered as rational, but within their own reality. For a company or firm, the customer logic should be broken into patterns in their everyday life, focus areas, energy and involvement with other services or products. Customer logic can change, but it is always affected by the experiences and activities, customer task, goals, and context. Research of customer context via research in abovementioned aspects can help identifying the customer logic.

Offering

C-D logic combines products and services into one word, offering. Heinonen and Strandvik (2015) argue that it is not important to differentiate between products and services but instead between provider and customer perspectives. The emphasis should be on customer perspective. The offering should be seen as the gateway to customer's everyday life and the providers should make decisions based on their abilities in comparison to the competition since they cannot directly control the customer's value formation.

Value formation

Value formation explains the process where value emerges instead of being created. Heinonen and Strandvik (2015) combine in C-D logic the concept of value-in-use with the fact that it is affected by physical and mental experiences. The customer's value formation is separate from provider's value formation which on the other hand is affected by provider's capabilities and skills. According to Heinonen and Strandvik (2015), customer's value formation emerges in the customer's everyday life as a sum of behavioral and mental processes of interpreting, experiencing and integrating offerings. In total, the value formation considers both sides of the equation: customer's and provider's value formation.

Customer's context

As stated, the value-in-use emerges in context, which is based on customer's ecosystems. These ecosystems include provider's competition i.e., other providers, other customers, other actors or stakeholders and the physical and virtual structures of the service. This means that the service ecosystem is only a portion of the customer ecosystem where provider can have a minor or large influence.

To conclude, understanding the role of provider in customer's context and value formation is the key of C-D logic. Provider activities should be driven by customer logic i.e., mindset of listening to the customer needs and their context. The managerial impact of this is the fact that customer issues should be considered on all levels of the company. Also, the focus should not be in collective customer logics but on the individual customer logics (Heinonen & Strandvik, 2015).

2.4 Jobs-to-be-done theory

In this section, the thesis provides an overview of Jobs-to-be-done theory. The section begins with the origins of customer-centric product and service innovation. Next, it describes the core of the jobs-to-be-done theory. Following the core of the theory, the section will describe how in literature the jobs-to-be-done theory is approached in different ways. Even though there are many aspects of jobs-to-be-done theory that are shared, there are also different schools of thought researching and practicing jobs-to-be-done theory. The thesis will also present the commonalities and differences between different schools of jobs-to-be-done theory.

2.4.1 Background of Jobs-to-be-done theory

Already a half a century ago, and similarly to service-dominant and customer-dominant logics, Levitt (1960) stated that a company should view itself as a customer-satisfying process, rather than goods-producing process. The process should start from customer needs, and then develop backwards towards physical delivery of customer satisfaction. Only from this step, the ambition should be to develop products, services or 'things' that satisfy the customer needs (Levitt, 1960). Peter Drucker proposed in his book "Innovation and Entrepreneurship" (1985) that one of the best sources of innovation opportunity is the incongruity between company's or provider's perceived and actual customer needs, describing how company needs to identify why new or existing customers would buy their service.

To continuously innovate and react to volatile and changing customer needs, literature guides big corporations, such as the Case company, towards corporate entrepreneurship (Abrell & Durstewitz, 2016). Corporate entrepreneurship is an innovation management approach in established corporations with internal innovation venture units. One of the key benefits for the innovation management and corporate entrepreneurship in internal units is the capability

of proactive and close way of working with the customers with increased level of knowledge in customer needs (Laaksonen, 2007; Abrell & Durstewitz, 2016). Identifying and addressing customer needs as first steps of innovation management is a key success factor for running successful innovation management, and new product and service design (Abrell & Durstewitz, 2016; Christensen et al, 2016a). Gruner and Homburg (2000) state that involving and interacting with customers in the early stages of product and service development has positive impact on the success rate of new solution development.

Still, even with the high need and aspiration for innovation and customer-centricity, the innovation efforts are facing challenges. According to Christensen et al. (2016b), the success of innovation efforts does not meet the needs of most companies despite the increased investment and most importantly, the need for innovation. During the past decade, the failure rates for innovation has been reported to be between 50 and 90 % (Hughes, 2011; Heidenreich & Spieth, 2013). Both Weigel & Goffin (2015), and Christensen et al. (2016b) connect the lack of innovation success to lack of customer-centric innovation capabilities in companies. One of the most crucial capabilities, according to Weigel & Goffin (2015), is the generation of customer insights for developing ideas, new products, and services. Integrating these capabilities requires changes at a team, organization, cultural and process levels.

Christensen et al. (2016a) explain how the companies have been flooded with vast amount of customer data and insights. However, the data currently is scrutinized with new generation of analytical tools to find correlations between customer characteristics, segments or profiles. The major flaw in this approach is the fact that these correlations do not represent the customer behavior. Through this data, the companies are not able to pinpoint why a customer buys or uses a specific product or service, or in other words, what is the job the customer is trying to do – what is their job-to-be-done (Christensen et al. 2016b). When the data, and effectively customer need, is approached in a non-job-to-be-done manner, the innovation efforts concentrate on merely product and service enhancements, and not on finding new opportunities and value propositions that successful innovation needs to meet (Christensen et al. 2016a).

Once a company has established that there is a need to identify customer needs, traditionally it will approach its current customers through focus groups, ethnography, interviews, or advisory boards as many of these methods are labeled in pharmaceutical industry. Ulwick (2002), Goffin et al. (2012) and Slater&Narver (1998), collectively state that this traditional approach in unable to discover true customer needs, because the most successful innovation opportunities are identified through latent customer needs i.e. the needs that the customers are not able to articulate well or even express at all. Understanding what customers value and what job they are trying to achieve by ‘hiring’ a product or service should be considered

as the core of the innovation and the main unit of measurement (Christensen & Raynor, 2003; Christensen, Anthony, Berstell and Nitterhouse; 2007).

2.4.2 The core of Jobs-to-be-done theory

Following the work of Levitt (1960) and Drucker (1985); Christensen and Raynor (2003) popularized the jobs-to-be-done approach and established *the job* as the primary unit of analysis. Later, Ulwick (2005) described a process with discrete jobs steps towards customer's value model. In Ulwick's (2005) model the central unit of measurement is customer's desired outcomes, which describes the customer's way of measuring success in each job step. Both Christensen et al. (2016a) and Ulwick (2005), have named their theories jobs-to-be-done theory, but there are distinctions between their approaches. Christensen et al. (2016a) approaches the theory from a job-as-progress perspective. This perspective focuses on customer's goals and aspirations that customer is trying to achieve in a particular circumstance. Here, the innovation efforts focus on creating products and services that remove those struggles and enable customers to make progress. On the other hand, Ulwick (2005; 2016) concentrates mainly on the execution of a job and investigates the job from a process perspective. The approach from Ulwick (2005) breaks each and every customer job into a job map of eight similar steps and captures customer's desired outcomes for each job step. Once these desired outcomes are collected and prioritized by customers based on their importance and satisfaction, the company can determine most promising innovation opportunities, formatted as desired outcomes. Ulwick has combined this approach with Outcome-Driven Innovation methodology to provide an 'innovation solution'.

The jobs-to-be-done approaches from Ulwick and Christensen might differ, but the main differences are at an application and practical level. At its core, Jobs-to-be-done is a theory that provides a methodology in understanding the mechanisms behind customer behavior. What are the reasons for purchasing or hiring of a product or a service? The essence of the theory is the fact that customers don't specifically buy products or services, but instead "pull them into their lives to make progress" (Christensen et al. 2016a). When a product or a service is "hired" the customer has a certain job to do. If the offering has a positive outcome towards doing the job, the customer will most likely hire it again when confronted with a same or similar job (Christensen et al 2016b). Christensen et al (2016b) summarize the key features of a job to:

- The job is the progress that an individual seeks in each circumstance.
- Successful innovations enable a customer's desired progress, resolve struggles, and fulfill unmet aspirations.
- Successful innovation performs jobs that formerly had only inadequate or nonexistent solutions.

- Jobs are never simply about the functional, but instead they have important social and emotional dimensions, which can be even more powerful than functional ones.
- Because jobs occur in the flow of daily life, the circumstance is central to their definition and becomes the essential unit of innovation work – not customer characteristics, product attributes, new technology, or trends.
- Jobs-to-be-done are ongoing and recurring. They're seldom discrete events.

The core of the jobs-to-be-done theory also has implications on how companies should approach the market. Firstly, since the jobs are solution-independent, the companies need to widen their horizon of competition. Customers are only trying to get a job done, which means that any solution that does fulfill their need of doing the job, can be selected. Secondly, traditional market segmentation that is based on demographics will become misleading or obsolete. Jobs-to-be-done theory will help companies to segment their market based on customer needs, which can be similar between different demographics (Christensen et al., 2016a).

Jobs-to-be-done theory, in general, has two schools of thought. Firstly, the school led by the work of Professor Clayton Christensen, which emphasizes the job as main measurement, views to job from a perspective of progress and strongly relies on qualitative methods to uncover customer needs. Secondly, Anthony Ulwick has developed an approach that incorporates also quantitative methods in the process and views the jobs from the perspective of process. In Ulwick's approach the main measurement is viewed as desired outcome in specific step of the job. Next, the thesis will describe the two approaches to the jobs-to-be-done theory.

2.4.3 Jobs-as-progress - Qualitative approach to job-to-be-done theory

As stated before, Christensen, Hall, Dillon and Duncan (2016a) approach jobs-to-be-done from a progress perspective. According to Christensen et al. (2016a), to describe a customer need, a well-defined job describes the progress the customer is trying to achieve. This progress is defined as a job that comprises of verbs and nouns, and not of adjectives. The job is also defined at an abstract level where solutions from another product or service class can become competitors. According to Christensen et al. (2016b), the customer behavior is driven by jobs that they face in their everyday lives, and hence the jobs have social, emotional, and functional aspects. Christensen et al. (2016a) continue, that a job can be also divided into different types of jobs: functional jobs, emotional jobs, and social jobs. Core functional jobs concentrate on the tasks that the customers, users, consumers i.e., people are trying to accomplish. Emotional jobs are personal and describe how people want to feel by accomplishing the job at hand. Social job describes how people want to be seen by others through accomplishing the job. Due to the nature of these jobs, the qualitative approach

relies on research with an objective to understand the customer's journey in accomplishing their job, and selection of products or services as means to achieve the progress the customer is trying to make. The ultimate objective of the approach is the deep understanding of customer jobs. Through this the companies can inspect their customers through jobs-to-be-done lens, bringing focus to new jobs-based segments and highlighting new type of competition.

2.4.4 Jobs-as-process - Quantitative approach to the job-to-be-done theory

The quantitative approach introduces the jobs-to-be-done theory through a methodology called Outcome-Drive Innovation (Ulwick, 2005; Ulwick 2016). The ODI approach adds the use of data and quantitative research methods in identification of customer needs and innovation opportunities. From the service innovation perspective, Bettencourt (2010) adds service-specific aspects to Ulwick's ODI-approach. Ulwick (2016) follows the example of Christensen et al. (2016a) and divides the job-to-be done in different categories. A core functional job is defined in a single statement, from the customer's perspective, simple, functional, and contextual. Ulwick (2016) and Bettencourt (2010) offer a similar format for the job, where it always begins with a verb, followed by the object of the verb (a noun) accompanied with a contextual clarifier. In Ulwick's ODI-approach, one of the main differentiators to Christensen's approach, is the focus on functional tasks as part of the job-to-be-done. Also, whereas both approaches agree that correlation within a demographic segmentation does not imply causality, Ulwick still argues that hard data can be used to reveal causality within market and its segments (Ulwick 2013). As a research method, Ulwick also relies on interviews, but according to ODI-approach the interviews explore the functional tasks within eight different job steps and aims to uncover how customers measure success at each step. In his approach to the jobs-to-be-done theory, Ulwick (2002) adds *desired outcome* as a metric that measures the success of functional job execution. Similarly, to the job statement, desired outcome has a specific format. As a measure of success, it has a direction of improvement, a unit of measure, and a specific object of control. In some cases, the desired outcome statement may have a contextual clarifier. Bettencourt's (2010) approach uses only two different directions of improvement: minimize or increase, whereas Ulwick (2016) does not limit the number of different directions of improvement.

Next, the thesis will present the Outcome-Driven Innovation process in more detail.

2.5 Outcome-Driven Innovation process

In his book, What customers want, Anthony Ulwick (2005) describes a 8-step Outcome-Driven Innovation process. The process starts from formulation of innovation strategy, then goes through customer need capture and opportunity identification to defining the segmentation and targeting. After the customer needs and opportunities are mapped towards specific

customer groups, the process concentrates on positioning current offerings, prioritizing the project pipeline and defining new concepts. In his more recent publication, Jobs to be done (2016), Ulwick and his team has revised the Outcome-Driven Innovation process and updated it to a 10-step process. Instead of starting from innovation strategy the updated process begins from defining the customer, customer's job to be done and then following the similar process than the old process. In the new process, Ulwick (2016) has also added new steps that are targeted towards competitive landscape, defining value proposition, and formulating market and product strategies. The 10-step process visualized below.

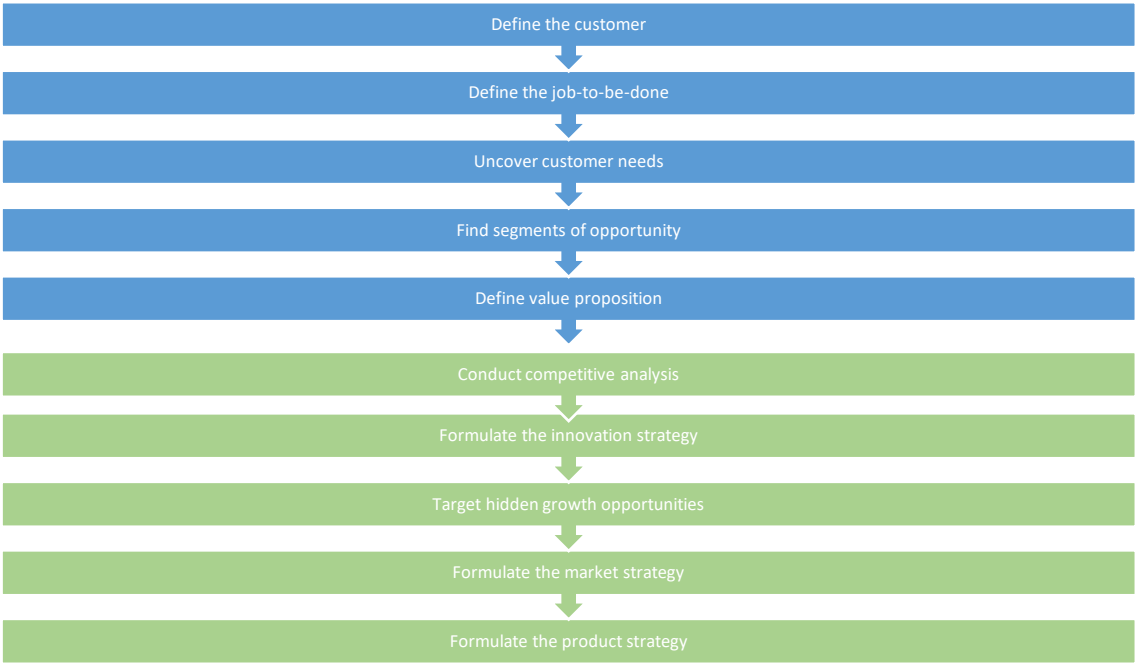

Figure 2: Outcome Driven Innovation process (Ulwick 2016)

In this thesis, the more recent ODI process from Ulwick (2016) is described in more detail.

2.5.1 Define the customer

According to Ulwick (2016) a company can have many types of customers. In the context of pharmaceutical company, the customer can be, for example, the clinical doctor, a nurse, head of clinic, a person in charge of the hospital budget or sometimes even the patient. For that reason, Ulwick's (2016) new process starts from defining the customer. According to the new process introduces three different customer types: The core job executor, Product lifecycle support team and Purchase decision maker.

The core job executor is the person who uses the product or service to get the core functional job done (Ulwick, 2016). In many cases the core job executor and the purchase decision maker differ, especially in B2B setting and large corporations. From the core job executor, it

is possible to collect functional metrics i.e. desired outcomes that will help the company to create products or services that help the job executor to do the job to be done faster, more predictably, more efficiently and/or with higher output. The core job executor is also the source for listing emotional jobs and related jobs.

The responsibilities of product lifecycle support team are installment, setup, storage, transportation, maintenance, repair, cleaning, upgrading and disposing the product. The product lifecycle team can be a source of desired outcome statements that will lead to products and services requiring less support. The listed responsibilities are called consumption chain jobs. Elimination of these jobs can e.g., lower the cost of product ownership and make the product more convenient, resulting in a more positive customer experience. (Ulwick, 2016)

According to Ulwick (2016) the purchase decision maker has the responsibility of evaluating alternative offerings and ultimately deciding which product or service is hired. The purchase decision maker is the source of financial desired outcomes.

By concentrating on all three customer types, the company can gather insights that will lead into better products and services that can meet, not only the core and related job needs, but also financial desired outcomes. (Ulwick, 2016)

2.5.2 Define the job-to-be-done

According to Ulwick (2016), defining the core functional job correctly is a prerequisite to predictable success. The core functional job is a stable, long-term focal point which other needs are defined around, and value creation is centered. If the core functional is defined too narrow, it will limit the discovery of new growth opportunities. On the other hand, if the core functional job is defined too broadly, it will result with insights that are non-actionable. Ulwick (2016) offers four characteristics for well-defined core functional job.

1. The job should be defined from the customer's perspective, and not the firms.
2. The job should not be over-complicated. The definition should be one-dimensional and mutually exclusive.
3. The core functional job should be strictly functional. Emotional and social job dimensions are excluded from functional jobs and listed separately.
4. The core functional job is not defined **as** a situation. The core functional job is a task that the customer decides to do in a specific situation.

On top of the four characteristics, the core functional job definition should be written in the format described in section "Definition of a job" in this report.

2.5.3 Uncover customer needs

Following Ulwick's approach from his Job to be done book (2016), next step after defining the core functional job, is to create a job map. Job map is a visualized version of the core functional job that is broken into a process of job steps. In each step, the job map explains what the customer is trying to get done. It does not tell what the customer does, but what the customer is trying to get done. A good job map is not a customer journey map, but instead it describes the ambition and what customer is trying to accomplish, irrespective of the situation or tools the customer is using. According to Ulwick (2016), every job can be broken into eight similar steps: define, locate, prepare, confirm, execute, monitor, modify and conclude.

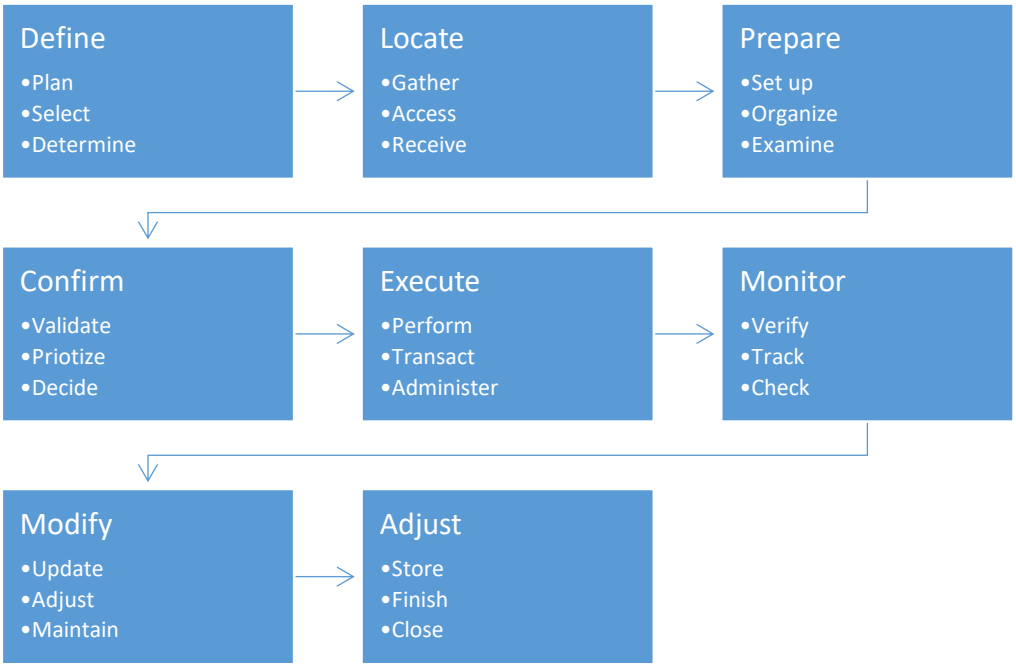

Figure 3: Universal Job Map (Ulwick, 2016)

Once a job map has been created, the next step is to capture desired outcomes for each step. Desired outcome statements are usually capture via interviews, focus groups, and observational and ethnographic interviews. (Ulwick, 2016)

2.5.4 Find segments of opportunity

The aim of ODI process is to segment the customer based on their needs. The process and approach do not value demographic, psychographic, behavioral or attitudinal data, but instead concentrates on the core functional job and desired outcome statements to uncover real unmet needs. (Ulwick, 2016). The segmentation model follows the following four steps:

1. Analysis of the job to be done and capture of desired outcome statements

2. Survey the customers. Customers are asked to evaluate each desired outcome statement's importance and how satisfied they are in current tools and services to achieve the desired outcome.
3. The market is segmented into customer groups based on their survey answers. Methods for the grouping are cluster analysis and factor analysis.
4. In the survey, also profiling questions are added to collect different factors that can explain the context of the customer.

With this data, companies can determine which desired outcomes statements are important to the customers and at the same time uncovering which desired outcome is under-, appropriately- or overserved. Through the segmentation, it can be concluded if there are specific customer groups that are e.g., more underserved than others.

2.5.5 Define value proposition

According to Ulwick (2016), the unmet needs of today represent the winning value propositions of the future. Using the underserved desired outcomes, companies can create winning value propositions. Ulwick (2016) states that to secure a winning value proposition, company must:

1. Know the areas where customers are underserved
2. Define and communicate a value proposition that promises to the customers that their need can be served
3. Deliver that promise and satisfy the unmet need.

Within the company, the employees can be aligned around this value proposition to create a common vision, which will help guiding their work, also long-term.

2.5.6 Conduct competitive analysis

Ulwick (2016) argues that it is waste of time to perform a competitive analysis based on product features. Instead, the aim of the competitive analysis is to evaluate competition based on the desired outcomes statements. Through this analysis it is possible to reveal if competing solutions perform better in specific areas, and also if there are certain areas where the competition can be outperformed. It is also possible to analyze if there are job areas where no good solution is available. Practically, the data is collected through the same survey that was used for collecting the importance and satisfaction metrics for desired outcome statement. In addition to importance and satisfaction, the customers are asked to evaluate their satisfaction with specific products or services.

2.5.7 Formulate innovation strategy

The ODI process continues with a formulation of innovation strategy. In this step, the company, product team or business unit defines and agrees on the type of innovation it is going to pursue. Ulwick (2005) lists four types of innovation: product or service innovation, new market innovation, operational innovation and disruptive innovation.

According to Ulwick (2005), **product and service innovation** is the most common type of innovation. In the ODI framework, the innovation efforts are aimed towards improvements in current products and services by discovering underserved customer outcomes and offering innovative solutions or features towards these outcomes.

On the other hand, **new market innovation**, identifies customer jobs or outcomes that are underserved because no product or service exists towards them. The objective of the new market innovation effort is to offer a product or a service that enables the customers to accomplish their job faster and/or cheaper.

Operational innovation aims at identifying inefficiencies in company's business operations and creates creative solutions towards these inefficiencies. Operational innovation commonly includes rethinking and reconstruction of company's value chains. Compared to the above-mentioned innovations strategies, operational innovation also considers the jobs and outcomes of its own employees as well as the customer's.

The disruptive innovation strategy differs from the three above-mentioned. Disruptive innovation starts from a technological point-of-view when the company uses a new technology to disrupt existing business models in an existing market. Usually, the disruptive innovation strategy targets the overserved customers in a core-market with a solution using low-cost technology. This low-cost solution converts overserved customers to a less costly product or service, ultimately disrupting the mainstream customer market. (Ulwick 2005, Christensen & Raynor 2013). The second approach under disruptive innovation is new-market disruption. New-market disruption is a strategy where products or services using new technology are aimed towards new- or non-consumers i.e., customers who do not have a solution, skill or wealth to use existing products and services.

2.5.8 Target hidden growth opportunities

In order to decide which desired outcome statements have the most innovation opportunity, Ulwick (2016) describes an algorithm that uses the importance and satisfaction scores for calculating an opportunity score for each desired outcome score. Ulwick (2016) states that the decision to target specific desired outcome statements is the most important decision in the ODI process.

Opportunity score

=

outcome importance + max(outcome importance - outcome satisfaction)

Ulwick (2016) states, based on his experience, that outcome statements with opportunity score over 10 can be described as underserved.

The opportunity scores can be mapped into an opportunity landscape. The opportunity landscape has the desired outcome statement importance as x-axis and satisfaction on the y-axis. Based on the survey data, the desired outcome statements can be mapped into the opportunity map. The map also shows the areas for underserved, appropriately served, and overserved. Below an example from Ulwick (2016).

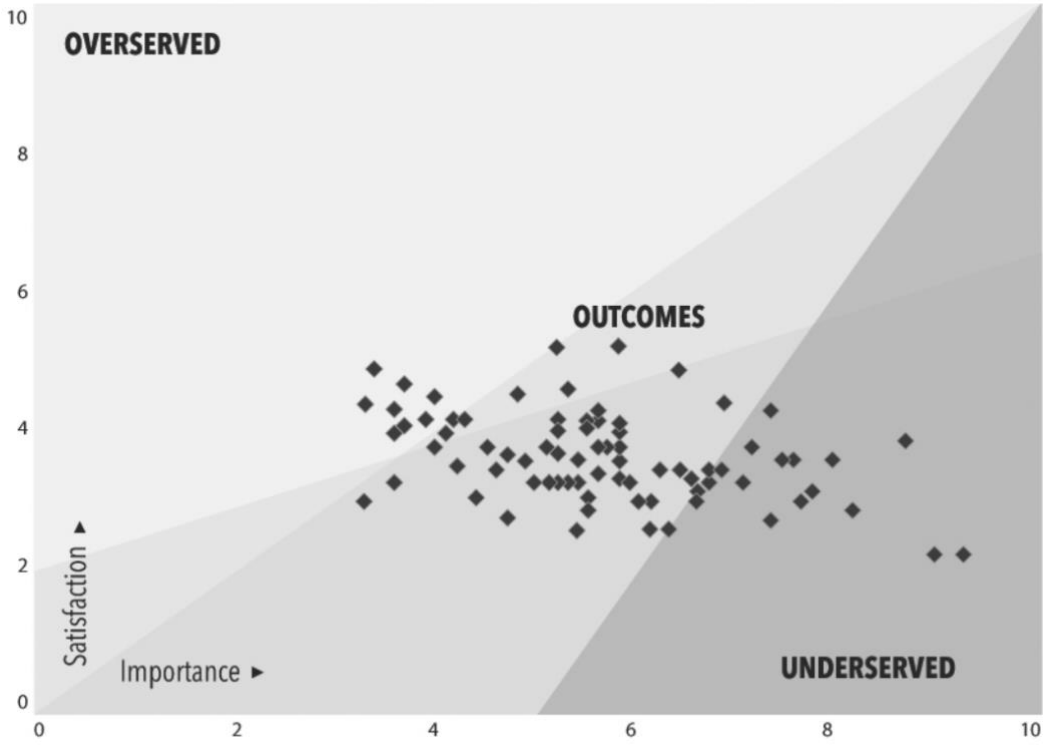

Figure 4: Opportunity landscape map (Ulwick, 2016)

By targeting the desired outcome statements in the underserved area, the companies can decrease the risk of innovation failure by 80 percent (Ulwick, 2005).

2.5.9 Formulate the market strategy

Through the earlier steps, the company is now equipped with customer-centric and data-driven insights that are the base for market strategy. According to Ulwick (2016), good

market strategy combines company's product offering with customer's unmet needs. Ulwick (2016) lists the following steps for creating a market plan:

1. Decide which offerings to target at each outcome-based segment.
2. Communicate the strengths of those offerings to customers in the target segment.
3. Include an outcome-based value proposition in communications.
4. Build a digital marketing strategy around unmet outcomes.
5. Assign leads to ODI-based segments.
6. Arm the sales team with effective sales tools.

The first step combines the company's current product offering with the outcome-based segment, by choosing the products that best fit the unmet customer need. For example, the ODI process might have discovered customer groups that that have an unmet need that can be fulfilled with existing product but have been neglected earlier by the company.

Knowing the customer group's unmet needs, the company can communicate its product's "unmessaged strengths" that were not known as interesting to a specific segment. In the communication the company should emphasize the value proposition that was created based on the outcome-based research. The company can also build its digital strategy on the same research findings. For example, the customers are likely to use similar phrasing as the desired outcome statements when searching for solutions for their needs. Similarly, the ODI-based segments can be used for lead scoring. Asking e.g., online customer to fill out a short form, the customers can easily be divided into segments based on the ODI process. Lastly, the sales team can be trained on asking customers question that will reveal their ODI-based segment. This will help in communicating correct value proposition. (Ulwick, 2016)

2.5.10 Formulate the product strategy

According to Ulwick (2016), to serve better the unmet customer needs and ultimately providing a product that can serve the customer needs throughout the job to be done, a good product portfolio strategy is a requirement. Again, once the underserved customer segments have been discovered, the company can follow 7 steps proposed by Ulwick (2016)

1. Borrow features from other company offerings.
2. Accelerate offerings in the pipeline and R&D.
3. Partner with or license from other firms.
4. Acquire another firm to fill a gap.
5. Devise a new feature set.
6. Devise new subsystems and/or ancillary services.
7. Conceptualize the ultimate solution.

These part of the process starts from borrowing features from other company offerings i.e. knowing the unmet customer needs, the company should go through its offerings and see if it already has a product that can fulfill the unmet need. There can be a situation where there is no current product or service available, but one is already in the pipeline. In these situations, the company can prioritize its pipeline and R&D to fast track the product fulfilling discovered unmet customer need. If the company does not have a current product or a product in the pipeline, it can partner or license a product or feature, or acquire another firm that has the needed product or knowledge. Based on the ODI research, the company can also devise new feature set in its current offering to better fulfill the unmet customer need, enable customer to achieve the job to be done better or help covering more job steps with one product. At times, the company's product cannot solve the unmet customer needs, but instead it needs to develop a service to meet the customer needs. Ultimately, the company's goal is to cover the entire job. In order to achieve this, the company should conceptualize the ultimate solution which can be used as a long-term vision for the product team or company. (Ulwick, 2016)

This presented Outcome-Driven Innovation process outlines how Jobs to be done theory can be operationalized following a straightforward process. Starting from understanding customer's context and job to be done, all the way to market and product strategies that are informed by outcome-based customer needs. Basing the outcome-based customer needs on both qualitative and quantitative data, gives the research and actions reliability. On the other hand, the process is quite heavily product focused. For that reason, the report will next present a needs-based service innovation framework (Bettencourt, 2010) that is more suitable for service realm.

2.6 Adapting Outcome-Driven Innovation process to Service Innovation

Approaching service innovation through a customer-dominant logic lens, placing marketing as the basis of business (Heinonen & Strandvik, 2015), it is necessary to understand if and how the service innovation differs from product innovation. While the nature of service described by IHIP characteristics is challenged (Lovelock & Gummesson, 2004) and claimed peculiarities of service innovation also are claimed to apply manufacturing (Drejer, 2004), why look further than the ODI-based framework? According to Nijssen, Hillebrand, Vermeulen & Kemp (2006), new service development and innovation requires more willingness to change than new product development. Their study, conducted in 2006, confirmed that new service development and innovation requires more willingness to cannibalize current business, openness for new or changed routines and learning of new skills compared to new product development and innovation. Kindström & Kowalkowski (2014) state that service innovation requires organizations to broaden their horizons and adjust their starting point.

Bettencourt (2010) describes service innovation as “the process of devising a new or improved service concept that satisfies the customer’s unmet need”. The key factor for successful new products and service solutions is the ability to define customer’s unmet needs and the integration of the defined unmet needs into the company’s innovation process. Without uncovered customer needs, companies are likely to develop provider-centric service improvements, service failures and poor execution of services (Bettencourt, 2010). Ultimately, innovation is less about producing something new and more about enabling something new and important for customers. (Christensen et al 2016a)

The needs-based service innovation framework from Bettencourt (2010) is very similar outcome-driven innovation approach than Ulwick’s framework (Ulwick 2005, 2016). As one of the main differences from Ulwick’s process, Bettencourt introduces four different service innovation discovery options. These will be presented later in the report. The thesis will now describe the main differences between the two frameworks and discuss their applicability in the Case company.

Bettencourt’s model (2010) breaks the innovation process into four steps. The steps are visualized below:

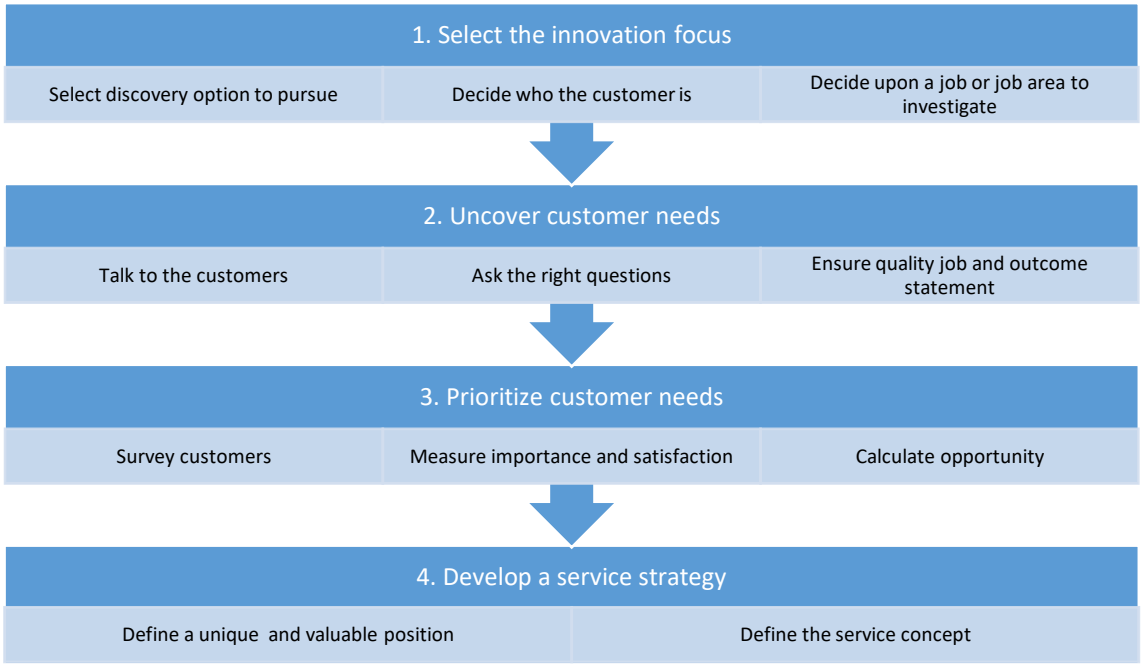

Figure 5: How a successful service strategy is developed (Bettencourt, 2010)

Bettencourt’s (2010) process derives greatly from Ulwick’s ODI-process from 2005. The main difference is the context. Bettencourt’s process concentrates solely on service innovation whereas Ulwick’s approach mainly focuses on product development and innovation. The steps

2. and 3. are the same in all models so this thesis will only present the steps 1. and 4. from the Bettencourt's service innovation model.

2.6.1 Bettencourt's four approaches to service innovation

In his book "Service innovation: How to go from customer needs to breakthrough services" Bettencourt (2010) describes four different approaches to service innovation. Four approaches i.e., innovation focuses are explained below:

New service innovation:
Objective is to discover new or related jobs that a current or new service can help the customer get done. Focus is on new or related customer jobs

Core service innovation:
Objective is to discover new ways to help customer get a core job done better with new or improved services. Focus is on outcomes on a core job for which service is hired.

Service delivery innovation:
Objective is to discover ways to improve how the benefits of the service are obtained by the customer. Focus is on outcomes on obtaining service.

Supplementary service innovation:
Objective is to discover ways to help the customer with jobs related to product ownership and/or usage. Focus is on outcomes on a specific job related to product usage or consumption.

From the company's perspective it is not necessary to choose only one. The decision to pursue multiple approaches can be at times necessary because e.g. service delivery cannot be detached from core service.

2.6.2 Selecting innovation focus for service innovation

Selecting the innovation focus includes three decisions by the company. Firstly, the company should agree on what discovery option it should pursue. Secondly, the customer needs to be defined. The group should be broadly defined, and the selection should not concentrate on demographic or firmographic attributes. Bettencourt (2010) does not use the same customer types (The core job executor, Product lifecycle support team and Purchase decision maker), but instead concentrates on customer responsibilities. Specifically for core and new service innovation, Bettencourt suggests choosing not only the customers already hiring a particular service, but also the ones who hire multiple solutions. Final decision in the first step is deciding on the scope of the innovation project – namely if the company wants to pursue core

service innovation around customer core job or concentrate on specific set of jobs for investigating new service innovation.

2.6.3 Developing a service strategy

The next differentiating factor between Ulwick (2005, 2016) model and Bettencourt (2010) model is naturally the development of **service** strategy. The last phase starts with the innovation opportunities that have highest opportunity scores. The aim of the service strategy is firstly spell out who is the service customer, what customer needs to service fulfills and what important elements the service includes. The service concept created should explain important elements of the service design from a marketing, human resources, operations, and IT perspective. Also, it should describe the service delivery system including roles of employees, equipment, procedures and the physical facility in meeting the customer needs. (Bettencourt, 2010).

While making developing the service strategy, the company should also consider how well its current capabilities, resources, culture and strategy align with the service designed to fulfill customer needs. Once the service strategy and service concept has been finalized the company should move into actual service design and development.

3 Conclusions from the literature review

As a conclusion, the literature review and key concepts explain the concept and case study of this thesis. Through service-dominant logic the business logic is rooted in customer-dominant logic (of service) where the provider's logic and customer's logic meet at the intersection of provide's service context and customer's service context i.e., in the interactive service context.

Figure 7 shows the high-level connections of the different literature. Customer's current situation and needs are discussed through Jobs-to-be-done theory and researched through outcome-driven innovation process and desired outcomes. While jobs-to-be-done theory concentrates on the current needs, the customer-dominant logic discusses the business perspective and offering, and their connections to customer logic and context. The provider and customer logics connect at the interactive service context where service is delivered, and jobs-to-be-done theory comes into play.

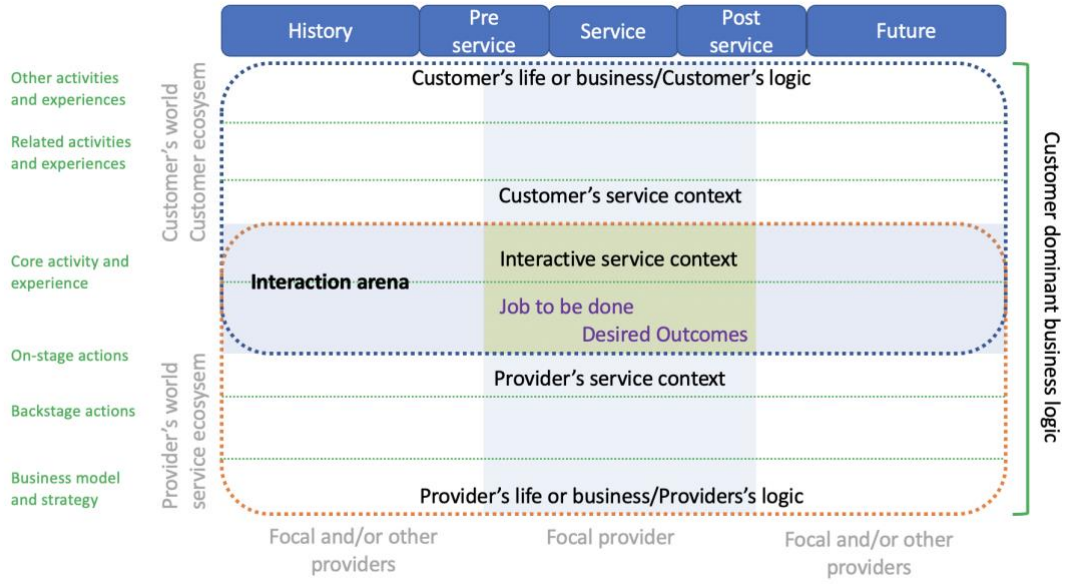

Figure 6: Visualization of theoretical framework

This interactive service context is further detailed with jobs to be done theory into customer jobs and desired outcomes. Through the literature from Christensen et al (2016a; 2016b) and Ulwick (2005; 2016), a mixed picture of jobs-to-be-done can be concluded. The common ground can be found in the language and basic principles – customers don't buy products, they hire solutions to make progress (Christensen et al., 2016a) or fulfill desired outcomes (Ulwick, 2005). Already here, the literature becomes fractured. Christensen et al. (2016a) rely on qualitative research, discard the use of data, and concentrate on social and emotional jobs, whereas Ulwick (2005) argues that data, and quantitative methods, can still be leveraged within the jobs-to-be-done theory when approaching the jobs from a more functional perspective.

Using the ODI methodology the customer's current jobs-to-be-done and desired outcomes are uncovered and evaluated by opportunity score algorithm into innovation opportunities which are a great starting point for service innovation. To further detail the innovation opportunity, the jobs-to-be-done approach from Christensen et al. (2016a) is incorporated through further investigation into social and emotional jobs, and the motivations and struggles the customers have.

4 Case study process and methods

The methodology of this case study is the constructive approach to in management accounting research (Kasanen, Lukka and Siitonen, 1993). This methodology describes a very

practical approach to solving business problems by connecting relevant literature to innovative solution ideas. The methodology also offers measures to evaluate the success of the solution while maintaining a very business-oriented and practical perspective. The case study aims at solving Case company's innovation and ideation problem by providing a process and methodology for the Case company to collect, categorize and document relevant customer needs within a common framework. The framework is grounded in jobs-to-be-done theory and offers a shared language to the Case company within the context of customer needs.

4.1 The constructive approach in management accounting research

The constructive approach aims at solving practically relevant problems through the construction of models, diagrams, plans and organizations. The constructive approach is widely used in technical sciences, mathematics, operations analysis and clinical medicine. The approach is grounded in management accounting theory and results in managerial constructions, and relevant and useful problem solving (Kasanen, Lukka and Siitonen, 1993).

Kasanen, Lukka and Siitonen (1993) describe the characteristics and process of constructive approach as follows:

1. Find a practically relevant problem which also has research potential.

2. Obtain a general and comprehensive understanding of the topic.

3. Innovate, i.e., construct a solution idea.

4. Demonstrate that the solution works.

5. Show the theoretical connections and the research contribution of the solution concept.

6. Examine the scope of applicability of the solution.

The innovation phase (phase 3) is the core of successful constructive study. The aim of the innovation phase is to produce a solution to the researched problem. According to Kasanen, Lukka and Siitonen (1993), constructive research can be viewed as applied studies, and it differs from analytic model building. On the other hand, constructive approach and research highly resembles scientific problem solving, where scientific methods are used but no new scientific knowledge is produced. The results of constructive approach are measured by market tests. A weak market test is passed if any manager with financial responsibilities is willing to apply the construction. A semi-strong market test is passed when the construction has been adopted by companies, and a strong market test is passed when company's business units applying the the construction are producing better financial results.

The structure of this case study will follow the constructive approach presented by Kasanen, Lukka & Siitonen (1993). Firstly, the thesis explains and identifies a relevant problem which also has research potential. Secondly, the topic of research and thesis i.e. identifying customer needs is explained and dissected to create a general understanding and comprehension. Thirdly, the thesis presents a solution idea (Jobs-to-be-done and Outcome-Driven Innovation) for solving the managerial challenge (identifying customer needs) and after that demonstrates how the solution is applied in the Case company. Lastly, the theoretical connections are visualized, and the research's contribution discussed. Also, the thesis ends with an examination of applicability of the solution.

The data collection and analysis process of case study's research combines the acquired knowledge of jobs-to-be-done theory, and its different approaches, with applicable parts of Outcome-Driven innovation process. Due to the nature of the Case company and the size of the studied market, phases like competitive analysis were left out.

4.2 Case study

The objective of the case study is to demonstrate the effectiveness of jobs-to-be-done theory and Outcome-Driven Innovation process as a mindset and approach to finding relevant customer needs for innovation projects. The case study combines the learnings from Christensen et al (2016a, 2016b), Ulwick (2005, 2016) and Bettencourt (2010) and has five phases:

1. Selecting which type of innovation to pursue, who is the customer and what job-to-be-done to investigate (Bettencourt, 2010)
2. Researching the-job-to-be-done and desired outcomes (Christensen et al., 2016b; Ulwick, 2005)
3. Quantifying the findings and identifying innovation opportunity areas (Ulwick, 2005)
4. Further researching the exact job-to-be-done within the opportunity area (Christensen el al. 2016b)
5. Formulating a value proposition and design brief for ideation and concept development.

The case study was organized around the company's team concentrating on oncology patients and products. In oncology area, the company has 172 targeted customers, mainly oncologists and urologists working in central hospital or university hospitals. The team consists of two Key Account Managers (KAM), one Brand Manager (BM) working with 2 oncology related products and one Medical Advisor (MAF) who's main responsibility is medical education of the customers. The team's main drivers for participating in the case study were the innovation program's local implementation and their ambition to learn more about their customer's

needs and potentially find opportunities for customer centric and collaborative projects with the customers.

The company had done a patient survey prior to the case study. The survey included 10 one-to-one interviews with cancer patients and an online survey which received 50 answers from the patients. The results of the study were presented to the researcher and the presentation acted as the starting point for the case study. From the patient survey, the company had found out that especially the development and modification of prostate cancer patient's treatment plan had received a lot of comments and suggestions. Patients reported that they felt left-alone and uninformed of their treatment options and consequences and everyday effects of different cancer treatments.

One of the Case company's main values is that the company exists foremost to serve the patients. The survey results led into a decision to pursue new and/or core service innovation with healthcare professionals. The job-to-be-done was formulated into "creating and adjusting cancer patient treatment plan".

4.3 The informants

The informants were seasoned experts in the field of treating prostate cancer patients and could be considered as excellent sources of information. The background of informants is presented in the below table in appropriate detail to keep the informants anonymous:

Interview	Specialty of informant	Informant background
Interview 1	Urology, Oncology	26 years as Doctor of Medical Science, PhD. 7 years of specialized work in cancer.
Interview 2	Oncology	5 years as Doctor of Medicinal Science, PhD. 2 years as Chief Physician in Central Hospital
Interview 3	Urology	>20 years as specialist urologist.
Interview 4	Urology	9 years as specialist urologist

Interview 5	Urology	>20 years as specialist urologist
Interview 6	Urology	8 years as specialist urologist, researcher in the field of urology.

Table 1: Interview and informant information

Participants from interviews 2 and 3 were re-interviewed in the fourth phase of the case study. None of the participants were compensated for the interviews. Each interview lasted between 60-90 minutes and the topics of the interviews followed the set interview guide.

4.4 Data collection and analysis

The data collection and analysis were conducted in three steps (Figure 7) : 1) Semi-structured interviews and analysis based on the ODI-process by Ulwick (2016) to map current jobs steps and desired outcomes, 2) ODI-based survey to evaluate the desired outcomes in order to find innovation opportunity areas and 3) Semi-structured interviews based on the jobs-to-be-done theory by Christensen et al. (2016a) to uncover current struggles and optimal solutions within a chosen innovation opportunity area.

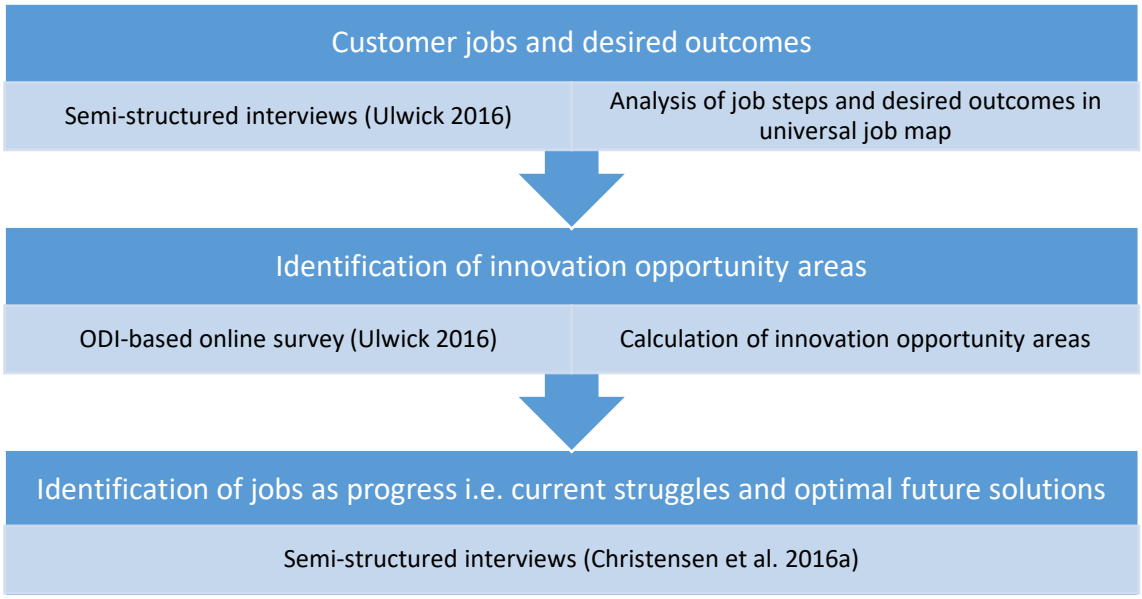

Figure 7: Data collection and analysis process

4.4.1 Researching the-job-to-be-done and desired outcomes

Data Collection

As the second phase of the case study, the qualitative research began with one-to-one semi-structured interviews. As a contrast to structured interviewing, semi-structured interviews follow the characteristics of qualitative interviewing. According to Taylor, Bogdan and DeVault (2015), qualitative interviewing is nondirective, unstructured, non-standardized, and open-ended. A semi-structured interview is a verbal interchange where one person, the interviewer, attempts to elicit information from another person by asking questions. The interview begins with a list of predetermined questions, but the semi-structured interviews are more conversational, offering the participants an opportunity to explore issues or topics, outside of the initial plan, that seem important. The tone of the interviews is informal, and questions are set in open-ended fashion (Longhurst, 2003).

All interviews were done in Microsoft Teams meetings and followed a ODI based question pattern. The company decided to hire a consultancy firm to assist the researcher, so that each interview had two interviewers, following Steve Portigal's advice in his book "Interviewing users: How to uncover compelling insights" (2013). The interviews were not recorded due to the participant request, but a memo was written during and immediately after the interview. See Appendix 2 for an example of a memo.

Using the universal job map presented by Ulwick (2016), the semi-structured question pattern was built based on the 8 steps each job includes: define, locate, prepare, confirm, execute, monitor, modify and conclude. Based on the job steps an initial question flow was created. The initial job and interview flow visualized below.

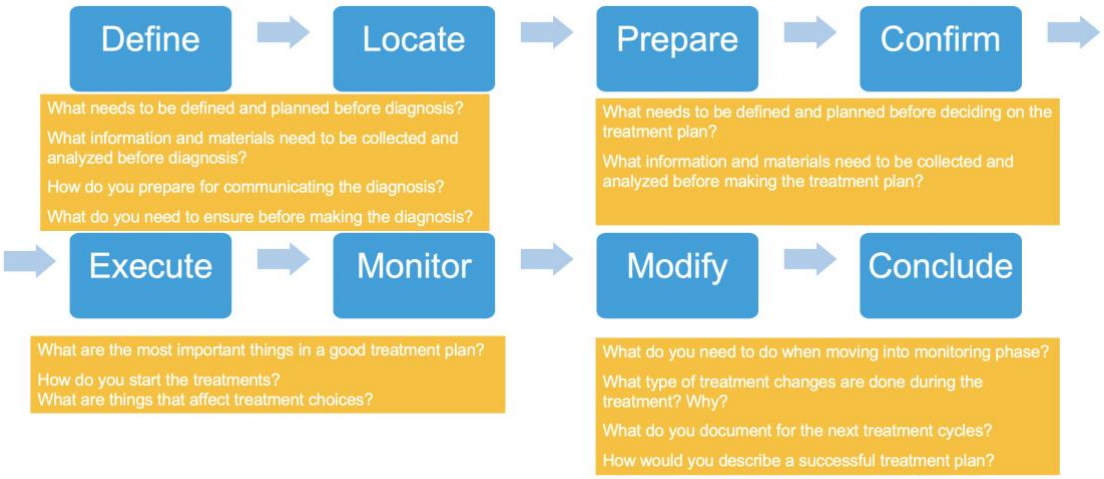

Figure 8: ODI-interview initial plan in universal job map (Ulwick, 2016)

In the more detailed interview plan (Appendix 1), there were questions added for adding the perspective of job-as-progress (Christensen et al., 2016b), such as usual workday, overall motivations in their job and ideal solutions for creating and measuring success of a treatment plan. The main part of the interview was broken into three parts: creating the treatment plan (define, locate, prepare), executing the plan (confirm, execute) and monitoring the success of the treatment plan (monitor, modify, conclude). Full list of questions can be found in the Appendix 1.

Analysis

After the interviews, the memos and the findings were analyzed between the researcher and the participating consultants. The analysis used the universal job map from Ulwick (2016) by mapping the interview findings into the eight job steps defined in the ODI framework. Following the ODI universal job map approach by Ulwick (2016), a core functional job was defined for each job step in the job map. Job definitions follow the job statement format presented by Christensen, Hall, Dillon and Duncan (2016); Ulwick (2016) and Bettencourt (2010). Below is a visualization of the universal job map with the defined job for each job step:

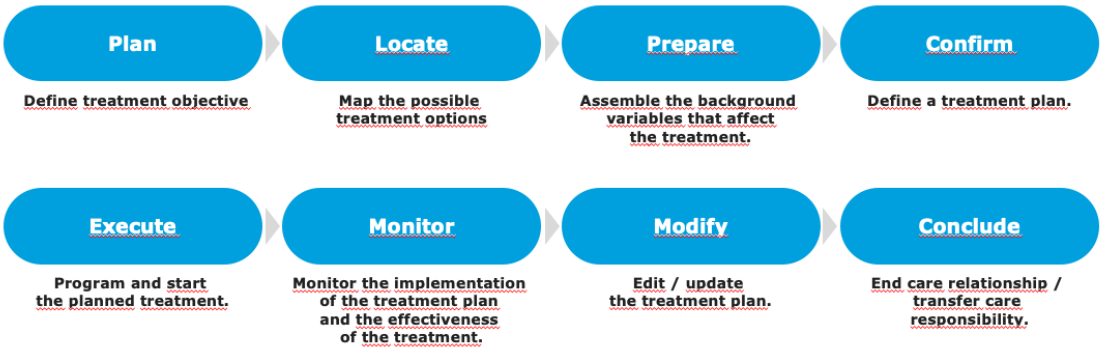

Figure 9: Universal job map with customer-defined job steps

For each job step, more details were collected about the actual functional jobs related to the job step. Each job step with additional functional jobs is presented in the Table 2 below:

Define treatment objective	Gather the information needed to determine the goal of treatment. - Prevalence of prostate cancer - Patient's age and other medical condition

	Based on the information gathered, decide if the goal of treatment is - healing (curation) - a line of treatment that slows the progression of the cancer - palliative care line.
	If the goal is defined as a palliative care line, refer the patient to a palliative care provider.
Map the possible treatment options	Map out the different treatment options that would be possible given the goal of treatment.
	Gather more information about the characteristics of the cancer and the patient's background variables to support the treatment decision.
Assemble the background variables that affect the treatment	Crystallize all relevant background information to support an independent treatment decision or for multidisciplinary validation.
	Prepare to present a preliminary treatment plan to the patient.
	Prepare a patient case for a multidisciplinary team.
Define a treatment plan	Introduce the patient case to a multidisciplinary care team or colleagues for support in making treatment decisions and developing a treatment plan.
	Introduce the initial treatment plan to the patient and ask for his or her views on the meaningfulness / preferences of the different treatment options.
	Refine the treatment plan according to the patient's preferences.
	Document the treatment plan in the patient information system.

Program and start the planned treatment	Plan and Prepare for Surgery Implementation.
	Plan and Prepare for Radiation Therapy Implementation.
	Transfer the patient to an oncology clinic if treatment requires oncology treatments (urologists).
	Program the implementation of drug treatment as well as laboratory and follow-up visits.
	Give the patient care guidance.
Monitor the implementation of the treatment plan and the effectiveness of the treatment plan	Monitor the effects of treatment on the patient in the short and long term. • patient well-being • functional capacity and activity • tolerability / side effects of treatment
	Monitor the clinical effects and efficacy of treatment. • Clinical indicators (laboratory tests, imaging)
	Leverage digital solutions to monitor treatment effectiveness and efficiency. • Digital treatment paths • PsA application • PROM meters • User-friendly treatment plan view
Edit/update the treatment plan	Relieve the patient's symptoms and experienced side effects, e.g. with supportive care.
	Adjust the dosage or frequency of medication.
	Add another drug to your medication.
	Switch to another treatment.
	Pause medication.

	Stop medication.
	Change the goal of treatment.
	Update the treatment plan for changes.
End care relationship / Transfer care responsibility	Decide on a treatment relationship when the goal of curing the cancer is achieved (the cancer has not recurred within 5 years).
	Transfer responsibility for palliative care to the person responsible for palliative care.
	Transfer responsibility for care to another specialty (eg urology to oncology or outpatient unit to palliative unit)

Table 2: Customer-defined jobs steps and functional jobs

For each customer-defined job step, a set of desired outcomes were collected. In total, there were over 40 desired outcomes that were defined for the job steps in “create a patient centric treatment plan” job. Following Bettencourt’s (2010) desired outcome statement format, it was decided that the words for direction of change in the statement is limited to minimize or maximize. Full list of capture desired outcomes for the job steps is presented in Table 3, below.

Plan	Minimize patient waiting time for studies that affect treatment goals (imaging studies, laboratory studies).
	Minimize the flood of information at the time of prostate cancer diagnosis.
	Minimize the number of patient questions and contacts at the time of diagnosis.
	Minimize the need to change the goal of treatment in the short term.
	Maximize the number of arguments that support the goal of treatment.
Locate	Maximize the availability of scientific evidence and data that support different treatment options and predict the prognosis.

	Minimize the fragmentation of data that influences treatment decisions into different data sources - strive to gather data into a single view.
	Minimize the time spent retrieving patient backgrounds and treatment history.
Prepare	Minimize the time it takes to prepare a patient case for multidisciplinary team (MDT) processing.
	Minimize the time the patient has to wait to reach a multidisciplinary care team care assessment.
Confirm	Minimize the number of surgeries performed on younger patients if other alternative therapies are widely available.
	Maximize the involvement of oncologists in the design of care for young prostate cancer patients.
	Maximize the use of a visualized / illustrative treatment path when a treatment plan is made in a multi-professional collaboration.
	Minimize the time required from other specialties to support treatment planning.
	Minimize the patient's unrealistic expectations about treatment goals and outcomes due to a lack of an overall picture.
	Maximize the use of data when making a treatment decision and developing a treatment plan.
Execute	Minimize the time it takes to instruct the rest of the care team.
	Minimize the number of patients who discontinue treatment during treatment and follow-up.
	Minimize the use of ineffective but harmful treatment options.
	Maximize the visualization of the treatment path, next steps, and options.
	Minimize the patient's experience of not feeling good in care or lacking continuity in care.

Monitor	Minimize the resources used by nursing staff in the patient follow-up protocol.
	Minimize the time the patient spends communicating with the treatment unit.
	Maximize the benefit of patient-reported adverse events / symptoms relative to the treatment plan.
	Minimize patient waiting time for follow-up and follow-up if PsA rises above reference values.
	Minimize the turnover of caregivers to ensure better understanding and symptom management.
	Maximize the collection of patient-reported impact data while the patient is being monitored.
	Maximize the use of automated quantitative measures of lifestyle and quality of life (number of steps, quality of life indicators)
	Maximize the visualization of treatment history information when the patient is being monitored.
	Minimize patient passivity with non-treatment.
	Minimize the time a patient has to wait to get answers to their questions.
	Minimize time to utilize patient-reported information in treatment decision-making.
	Minimize variation in PsA during monitoring.
	Minimize the use of generic quality of life and well-being metrics in monitoring.
	Minimize the use of non-structured information during monitoring.
	Minimize the need for technical capabilities of patients in reporting treatment effects.

Modify	Maximize the availability of scientific evidence and data to support different prognosis and predict the outcome of follow-up treatment.
	Minimize the fragmentation of data that influences follow-up decisions into different data sources - strive to gather data into a single view.
	Minimize the time spent retrieving patient backgrounds, follow-up information, and treatment history.
	Maximize time for conversation with the patient when making updates.
Conclude	Maximize the patient's understanding of what healing from the disease means in practice.
	Maximize the patient's understanding of what to look for in the event of a recurrence of the disease despite healing.
	Maximize patient understanding of the purpose and goals of palliative care.
	Maximize the continuing unit's understanding of the patient's individual characteristics and treatment history.
	Maximize the continuing unit's understanding of the patient's individual characteristics and treatment history.
	Minimize the patient's need to contact the unit after the end of treatment and switching.

Table 3: Desired outcomes for each job step

4.4.2 Quantifying the findings and identifying innovation opportunity areas Results

Data Collection

Following the ODI approach by Ulwick (2005, 2016) and Service Innovation approach Bettencourt (2010), the next step in the innovation process was to find the areas of innovation opportunities. In other words, the desired outcomes statements were surveyed with customers, who evaluated each desired outcome statement on a Likert scale, based on the statement’s importance to them and satisfaction towards the current solutions or tools that help them meet the desired outcome. The original Likert scale is a set of statements offered for a real or hypothetical situation. Participants are asked to show their level of

agreement, from strongly disagree to strongly agree, with the given statement. When combining multiple statements, the scale and results reveal inter-linked attitude towards the statements (Joshi, Kale, Chandel and Pal; 2015). The original list of over 40 desired outcome statements was reduced to 32 outcome statements by combining outcome statements that had high resemblance. This action was done to keep the survey condense and manageable for an answerer to finish in reasonable time frame.

The survey was fielded towards 172 urologists and oncologists in Finland. Out of 172 survey recipients, 26 healthcare professionals completed the survey. The survey was conducted as an online Questback-survey. Out of the total recipients:

- 80.8% were urologists and 19.2% were oncologists
- 53.8% worked in a university hospital, 34.6% worked in a central hospital and the rest in smaller or private hospital
- Worked in 11 different hospital districts

Analysis

Based on the customers' evaluation of importance and satisfaction, each desired outcome statement received scores of importance, satisfaction and calculated opportunity score (Bettencourt, 2010; Ulwick, 2005). According to Ulwick (2005) and Bettencourt (2010), the opportunity score will define the innovation opportunity and scores above 10 are considered worthy for consideration and outcomes with an opportunity score over 12 have very good innovation opportunity (Ulwick, 2005).

Through the customer survey, the 32 desired outcome statements were measured. The Opportunity scores varied between 2,8 and 16,7. In total, 19 desired outcome statements received an opportunity score higher than 12. On average, the modify-step's desired outcome statements in the universal job map received the highest opportunity score (14,9). On the other end, the plan-step's desired outcomes statements scored lowest on the opportunity scale.

The highest scoring desired outcome statement was "Maximize patient understanding of the purpose and goals of palliative care", with an opportunity score of 16.7, which presents an extreme innovation opportunity. In the modify step, all opportunity scores were higher than 14, presenting a very good innovation opportunity overall in this job step. Here are the desired outcome statements for modify-step:

- Maximize the availability of scientific evidence and data to support different prognosis and predict the outcome of follow-up treatment, opportunity score 16.

- Minimize the fragmentation of data, that influences follow-up decisions, into different data sources - strive to gather data into a single view, opportunity score 14.
- Minimize the time spent retrieving patient backgrounds, follow-up information, and treatment history, opportunity score 14,4.
- Maximize time for conversation with the patient when making updates, opportunity score 15,2.

Full list of importance, satisfaction and opportunity scores is presented in the Appendix 3.

Ulwick (2005) presents the opportunity scores in an opportunity landscape map. The map is a graph that visualizes the desired outcome statements are over-, appropriately- or underserved and pose an opportunity for disruption (high satisfaction, low importance) or innovation opportunity (low satisfaction, high importance). Below is the opportunity landscape with the desired outcome statement plotted into the opportunity landscape:

Figure 10: Opportunity landscape, based on the survey

From the opportunity landscape, the oncology team concluded that there are very few desired outcomes that have potential for disruptive innovation, but a very good share of statements that have either high or extreme innovation opportunity. From this, it can also be concluded that the urology and oncology market in Finland is quite severely under-served with tools and/or solutions that would help the physicians in achieving their desired outcomes in the context of creating a patient centric treatment plan.

4.4.3 Further researching the exact job-to-be-done within the opportunity area

Data collection

As the fourth phase of the case study, two additional semi-structured interviews were conducted with participant from interview 2 and interview 3. The interviews followed similar semi-structured interview principals as the first six interviews and the objective was to develop further understanding into customer's jobs-to-be-done in modify step and from job-as-progress perspective.

Based on the ODI process and the identified innovation opportunity results, the oncology team agreed to concentrate on the Modify job step and the desired outcome statements connected to it. At this point, it was also discussed which job step had the most connection to the team's business strategy. The agreement was done in a meeting led by the researcher and participated by the KAMs, Medical advisors and Business unit lead. The researcher presented the interview outcomes, job map, desired outcomes, opportunity scores with the opportunity landscape. After the presentation, the researcher led a discussion where the team could contemplate which job steps and outcome statements made most sense for their business perspective. Given the nature of the products the Case company markets and sells, the modify step felt like a natural choice to pursue with.

The interview themes and questions came directly from the desired outcome statements in the modify step of the ODI job map. The themes were:

- The use of scientific evidence and data when modifying a treatment plan
- The use and visualization of patient data and treatment history
- Improving the doctor-patient interaction

The interviews were conducted by the researcher and 2 Key Account Managers in each of the two interviews. Again, the interviews were conducted over Microsoft Teams and lasted 60 minutes. Each interview was documented in a memo.

Each interview started with a presentation of the research findings from the first two steps: semi-structured interviews and the ODI survey. The chosen themes were presented as grounds for the interview. Following the approach by Bettencourt (2010) and Christensen et al. (2016b), the interviews concentrated in discovering why a new service could be hired and what current solutions do the participants use. The participants were asked under each theme:

- What would an ideal service help them to accomplish?
- What tools or services do they currently use in this job step?
- What type of issues are they trying to solve or prevent at this job step?
- What type of improvements would they do in the current tools or services?

Full interview guide can be found in the Appendices (Appendix 4).

Analysis

From the interviews and analysis, the team concluded that the customers were looking for tools and services that could help them find patient's treatment history, patients' personal information, related scientific data and publications faster and in one place.

Using affinity mapping/diagramming, findings from the interviews were collected under the themes: circumstance, issues today, usage of data, ideal solutions and tools.

Circumstance: The circumstances in the patient encounter were described as hectic, usually lasting for about 30 minutes, where decisions are made "like in the assembly line". Usually, the participants were missing patient's full list of used and ongoing treatment(s). Too much time is spent on the computer for finding relevant and needed information. The short time of interaction with patient is used for updating "routine information".

Issues today: The healthcare physicians want to avoid choosing treatments that the patients are un-fit for or could even be harmful. The current tools are lacking trustworthiness, which effects the adoption. The participants also stated that the tools from pharmaceutical industry might be considered as untrust. Participants also had willingness towards using and adding data to registries, but the tools are currently old-fashioned and cumbersome. They also stated that currently they need to add data in multiple sources, which was creating frustration. On a patient-level interaction, they had challenges with locating patients' full medicine and treatment lists. Also, the patient story and data is inputted to the systems as free text which creates challenges with locating relevant information and lacks consistency.

Usage of scientific data: Current scientific data sources are international: UROL European guidelines, NCCP, ESMO, EAU Guideline. Also, original publications as "long papers" are used.

Ideal solutions: Optimal solution should visualize:

- Patients treatment history in linear visualization or "story mode" with underlying diseases, lab results.
- The visualization should include date of diagnosis, progression, imaging results, radiological response and treatments in different stages.
- Patient reported outcome measures, such as, performance in everyday life, patients overall feeling.
- Overview of patient's characteristics that can affect treatment options, such as, cognitive challenges due to illness (dementia).

4.4.4 Formulating a value proposition and design brief for ideation and concept development.

The team gained confidence, that there was need for this type of service that would help physicians prepare treatment plan modifications that are based on latest scientific knowledge and matched with the specific patient case. The time saving in the preparation and explaining their proposed treatment changes, would give the physicians more time to interact and discuss with the patient. It was also clear that the physicians were not interested in presenting the science to the patients, but instead options based on the scientific data and treatment options in a way that the patients would understand it. With the new service and time saved, the physician's felt that they would be able to be more present in the patient interaction, have a better discussion which was backed up by data and visualization of different treatment options. The participants described similar emotional job – they wanted to appear more present in the doctor-patient interaction. From a social job perspective, this would increase the patient's satisfaction and confidence in the physician's decisions.

Based on the interviews, the researcher of this study and the Case company's team (business unit lead, brand manager and key account manager) were able to create a synthesis for a how might we -question for the new service innovation workshop that was based on customer needs and insights:

"How might we help the urologists and oncologists to collect relevant scientific data about treatment options and visualize patient's treatment history in order to minimize the time used to define a modified treatment plan and to maximize the time spent discussing in the doctor-patient interaction"

As a base for the value proposition, one customer quote was considered as a guiding star: "When meeting my patient, I want to spend as little time as possible on the computer. Instead, I want to have my face towards the patient, discussing the best possible treatment options for his disease and unique characteristics".

5 Demonstrate that the solution works

Overall, the Case company felt that the ODI process was a success. The execution of the interviews and survey proved to be an effective way to measure innovation opportunity in the oncology market. Given the hectic period of the survey, in the middle of COVID-19 pandemic, the number of responses surprised the oncology team positively. Initially, the survey was considered as long and impalpable, but 26 responses, or 15% response rate was agreed to be a success. The team felt that the survey gives material for many future innovation and collaboration projects, since there were multitude of desired outcomes that received high

opportunity score. Technically the survey was easy to create and share among the customers, which will be crucial in the future if used.

The concrete results showed 19 desired outcomes that have a high innovation opportunity. The case study at hand will concentrate on the modify job step with four high innovation opportunity desired outcomes. This will leave 15 desired outcomes with high innovation opportunity for future use. The case study results have already been presented and discussed with a university hospital for starting a long-term collaboration between the Case company and the hospital. The high innovation opportunity desired outcomes for the modify job step and the "How might we" -question derived from that have been setup for further development in a design thinking workshop, following the Case company's innovation program process.

The case study had three parts that required customer participation: the interviews uncovering job steps and desired outcomes, the qualitative ODI survey and second round of interviews for validating and defining the details for modify job step. According to Ulwick (2005), the universal map can be defined with "handful of interviews". This was also discovered in the case study. Usually, six individual interviews can be seen as a very scarce sample, but when attached to an ODI survey, the Case company felt that the study had enough plausibility for new innovative customer projects leading to new services. To further increase the plausibility, the second round of interviews were conducted.

The first set of interviews were conducted by the researcher and the consultant firm. As the research and interviews were heavily based on a new theory and process (to the Case company), it was highly important that the interviewers were familiar to the theory. Uncovering the job steps was easy to document and format according to the JTBD-theory's job statement format, since the customers used similar format in their answers when asked to describe their actual work steps when creating the treatment plan. The desired outcomes statements proved to be a much harder concept for the interviewees. As said, it was not challenging for them to explain what they do, but it was more complicated to explain why each job step was done, and especially what were they trying to accomplish (desired outcome) with each step and task. The desired outcome statement format proved to be a complicated format for the interviewee, but the desired outcomes statements were possible to uncover through validation questions i.e., using the desired outcome statement format and asking precisely if that is what the interviewee is trying to accomplish by doing the steps in their job. This points the case study to the direction that the best approach for initial job mapping and desired outcome statement formation, a researcher who is familiar with the theory and methodology is necessary. The Case company could approach this fact with either hiring a consultant or consultant firm to do the interviews or train their own employees with ODI theory and processes. It is also worth to consider, how the customers interviewees are

recruited and how the company effectively gathers a good number of interviewees for research. In this case study, the KAMs were able to recruit eight customers, which can be debated to be a low sample for qualitative research. Also, as stated, the Case company's customer group i.e. the physicians are very busy. This points towards a suggestion that the interviews would be best fitted into the usual customer meetings instead of separate meetings which can be seen as "extra" meeting from the customer perspective. Lastly, in the ODI-interviews, few of the participants commented on the trustworthiness of a pharmaceutical company developing services that go beyond the medicinal products e.g. so called "beyond the pill" projects. These comments point to the direction that an interviewer outside of the usual brand team could be the best interviewer with the most rapport.

The second part of the research included the ODI survey where the customers evaluated the desired outcomes statements based on their perceived importance and satisfaction. Despite the initial fear, the survey was completed by a good number of recipients. The survey was fielded through a marketing email campaign, which explained the survey and research, and offered a link to the survey. Out of 45 customers who showed interest towards the survey i.e. clicked the link in the email, 26 also completed the survey. This counts as a nice 57% completion rate. According to this finding, it can be concluded that the ODI survey format can yield results if a good number of customers are engaged and an interest towards completing the survey can be created.

The third part of the research that had customer interaction was the second round of interviews that concentrated on the themes identified from the ODI survey. At this point, the interview was conducted by the researcher and the Key Account Managers from the Case company. Once the themes had been identified from the ODI survey and the innovation focus was agreed with the team, it was easy to conduct the interviews with the physicians. The interviews concentrated on the three theme topics – and the context and details of the actual jobs in the modify step. The ODI survey results had given good confidence to the team that they are approaching the customers with a topic of discussion that had high importance to the interviewee and was lacking tools and support. The interviews were more precise and resembled at times discussions where to parties are trying to define solutions to a challenge. The interviews gave the team a good image of what the exact challenges are, how the customers are trying to solve them today and how the team could help the customers in solving them. Also, the interviews gave nice anecdotal stories, in the context of emotional and social jobs, on how to also promote the current products but more importantly, how the potential service's value proposition could look like.

Overall, the case study offers the Case company a set of tools that can be leveraged in their innovation projects. Firstly, the Jobs to be done theory creates a common understanding and language for defining the customer needs in a consistent way. Secondly, the Outcome-Driven

innovation process provides the tools that can be used for defining the needs but also defining which needs the company should put forward as innovation opportunities. Lastly, the practical examples and materials from the case study e.g., the ODI landscape and innovation opportunity files can be used in documenting and analyzing the future ODI research.

The next part of this thesis will discuss the overall challenges with making the case study into a process in the Case company and proposes an adjusted and functionable version of the process that fits the Case company's environment.

6 Results – Defining a customer needs framework

As a result of this case study, the researcher will develop and propose a framework that combines the presented literature, namely the jobs-to-be-done theory and Outcome-Driven Innovation process, with findings from the case study. The model will present how different jobs-to-be-done approaches can be combined into a process within the Case company. The model will also elaborate on how the different types of customer needs can be documented within a framework that defines the customer needs on different levels and creates a shared language for the Case company.

As stated, the case study was considered as a success in terms of gathering customer needs, or jobs-to-be-done, and evaluating the innovation opportunity areas. The results from Outcome-Driven innovation process were considered as very functional-level insights i.e. what they exactly do, and which describe the customer's **current** pain points in their work and in routine tasks they need execute. The second round of interviews added a good amount of social and emotional jobs that explain the customer's personal ambitions and motivations. At this stage, the differences between jobs-as-process and jobs-as-progress become apparent. As Ulwick (2005) state, his jobs-as-process, concentrates on the functional jobs of the customers, whereas the approach from Christensen (2016a) defines the jobs-to-be-done as progress and concentrates on higher-level emotional and social jobs. There is an ongoing discussion in the jobs-to-be-done community about the two approaches. This thesis attempts to combine both approaches into a single process, where depending on the innovation focus, different approaches can be chosen or executed in an order that creates most value for the company.

The framework will present an approach for the empathize and define steps in Case company's innovation process' that is based on Stanford's d.school Design Thinking process (Figure 1). The process has five steps, for a Case company's project team, which combine different jobs-to-be-done approaches, presented in the earlier sections of the thesis, from Bettencourt (2010), Ulwick (2002,2016) and Christensen et al. (2016a). In the last step, the

process will present a model that can be used to mapping the customer jobs into different levels goals based on Powers' hierarchy of goals (Carver & Scheier, 2001). Visualization in Figure 11 presents the process.

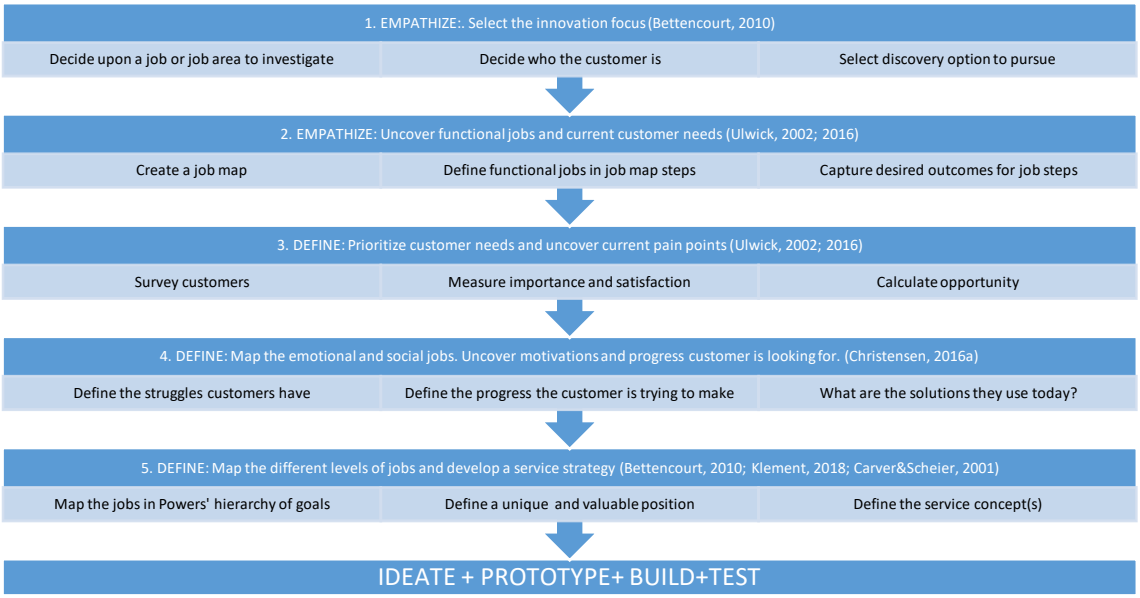

Figure 11: Jobs-to-be-done and customer need process for the Case company

6.1 Empathize: Select the innovation focus

The proposed process starts with a simple task: select the innovation focus. This step draws from Bettencourt's (2010) jobs-to-be-done for service innovation process where the innovation projects start from identifying interesting and potential job area(s) for research. In this step, the customer for identified job area is chosen and described, and after that the discovery option is selected.

As an example, in the case study, the researcher of this thesis used existing patient research to identify an area that was of interest for the Case company to further research. Once the job area was chosen, the healthcare professionals were chosen as the customer for the project and further detailed as urologists and oncologists. At this point, the Case company also decided to pursue new and/or core service innovation.

The main objective of this process step is to align the project team behind a common project goal. After this step, it should be clear to all team members why is the team pursuing this project, who is the target customer and what is the objective of the project.

6.2 Empathize: Uncover functional jobs and current customer needs

To further empathize with the customer, in the second step the process begins to uncover customer's jobs-to-be-done and customer's desired outcomes i.e. the way he defines success of the jobs-to-be-done. Ulwick (2016) approaches the jobs-to-be-done theory mainly from a functional perspective i.e. what are the job steps the customer does in a given context, how does the customer evaluate success as desired outcomes, and then maps the jobs steps and desired outcomes into the 8-step universal job map. Ulwick's (2016) approach offers a good overview of what the customers are currently performing in a broader context and how they evaluate their success. Due to the fact, that this step offers a comprehensive as-is view to customer's needs, it is a good starting point for further research.

Based on the case study research, customers are much more precise and capable of describing their current job steps and desired outcomes for creating a treatment plan for prostate cancer patient than describing their optimal solutions or tools for the lengthy process. As a result of this step, the case study had identified customers universal job map, functional jobs and desired outcomes when creating a treatment plan for prostate cancer patient.

After this step, the project team has an overview of all the steps customer goes through in the given project context and how the customer evaluates success when performing the steps.

6.3 Define: Prioritize customer needs and uncover current pain points

After identifying and mapping the functional jobs and desired outcomes into the universal job map, the proposed framework begins to define the innovation opportunity areas i.e. what are the important job areas from the customer perspective that lack satisfactory tools or services in fulfilling the customer's desired outcomes. In this step of the framework, the customers are surveyed with ODI-based survey that asks the customers to rate each desired outcome based on its importance and current satisfaction. The results are then used for calculating an innovation opportunity score for each desired outcome. The scores highlight the job areas or specific functional jobs where customers feel that important steps in their work lack satisfactory tools or services. The innovation opportunity areas provide detailed input of current situation for further research that aims to service development.

In the case study, the Case company found out that overall, their customers are unsatisfied with their current tools and services when creating a treatment plan for prostate cancer patient. When the Case company evaluated the areas against their business objectives, they could choose a job area for further research that had the most business potential.

After this step, the project team knows the job areas where customers currently struggle the most, highlighting the innovation opportunity areas for further research. The focus of the innovation project will now move from overall job to a specific job step.

6.4 Define: Map the emotional and social jobs. Uncover motivations and progress customer is looking for

After finishing the step three in the proposed framework, the research moves from Ulwick's (2016) jobs-to-be-done theory to the jobs-as-progress approach from Christensen et al (2016a). Christensen et al. (2016a) defines jobs-to-be-done as a way to make progress, rather than from a process perspective (Ulwick, 2016) which concentrates on functional jobs of the customer. In this step, the framework concentrates on current struggles and motivations of the customer in the specific jobs step that was identified in the previous framework step. The objective of the fourth step is to define emotional and social jobs of the customers i.e. what motivations do they have for doing the job, what type of struggles does the customer have currently and what would a more optimal solution or tool look like. With this information it is possible to define a future solution that would meet the customer needs at a level that would make the customer to switch from current solution to a new one.

In the case study, the Case company was able to focus on the Modify-job step where the healthcare professional modifies the treatment plan of a patient. With this specific focus, the semi-structured interview found out the current struggles of the customers e.g. lack of scientific data usage, and discuss the details for this specific topic. Also, with the given focus, the interviews could concentrate on optimal future solutions that the customers could envision. While describing the future solutions, the research gained information about solution features that would make the customer switch from the old solution to a new one.

After this step, the project team has discovered information from the customers about their motivations, struggles and ideas for future solutions. This information can be used for synthetizing a how-might-we question for an innovation project. Also, using the struggles and motivations, it is possible to formulate a strong value proposition for a future solution that is based on researched customer needs.

6.5 Define: Map the different levels of jobs and develop a service strategy

At the fifth step of the process, the framework combines the functional, social and emotional goals within a model that describes the differences between the jobs. The model is based on William Powers' hierarchy of goals (1973) which is widely accepted model of relationship between the things we do, and why we do them. This model is used as the framework for categorizing the different types of jobs-to-be-done.

To organize customer's goals i.e. jobs-to-be-done, Klemett (2018) constructs different jobs as goals into Powers' (1973) hierarchy of goals. The hierarchy describes how the organization of feedback systems have higher-order systems that behave as providers of reference values (goals) to the systems below them. Presumably, selecting a particular reference value relies at least partly on associations between classes of perceptions and classes of action that have proven to be discrepancy-reducing at the higher level in similar situations (Carver & Scheier, 2001). This version of the hierarchy omits the feedback processes, and simply shows the hierarchy of connections among goal values (Carver & Scheier, 2001).

According to Carver and Scheier (2001), the lines indicate that movement towards a particular lower-level goal contributes to attainment of a higher-level goal. This simply describes how goals on different levels exist and that attainment of a lower-level goal (do-goal) contributes towards achieving higher-level goal (be-goal). The opposite direction of reading is also possible by indicating that given higher-order goal specifies more-concrete goals at a lower level. Carver and Scheier (2001) state that such a hierarchy underlies the physical execution of actions that people engage in. The definitions for different levels of goals are:

- On the highest level, labeled system concepts, are such values that portray the global sense of idealized self. At this level, goals are very abstract. Powers' (1973) suggest that the output of system concepts consists of providing goals to the principal level "Be" goals.
- Be-goals are considered as principles which are the person's guiding principles. Carver and Scheier (2001) explain that you "be" who you want to be by using guiding principles implied by the idealized self to which you aspire. Principles begin to provide some form for behavior, but the form is still somewhat abstract. Carver and Scheier (2001) explain that principles are aspects of behavior for which there are names in everyday language, for example, "be honest" or "be responsible". Be-goals can also be explained as qualities which people apply trait labels.
- Third level goals are labeled as programs. These are the actions that a person takes as "behavior". The programs are rather concrete and easily recognized as actions, but they still are taken to attain relatively abstract goals on the principle-level. The Powers' (1973) hierarchy, programs act by specifying yet more restricted qualities as reference values to lower-level control structures.
- Lastly, the fourth level of goals is labeled sequences. To attain a program-level goal, person enacts sequences of movement. A difference between programs and sequences is that programs involve choice points where decisions must be made, whereas a sequence is executed all-at-a-piece. When an action becomes well learned that its enactment is automatic, it can be thought of as having become a sequence (Carver and Scheier, 2001).

The hierarchy depicts how the end goal of a person is to achieve the higher-level goal by performing and attaining the lower-level actions. As mentioned, the model explains the things we do, why we do them and helps understanding jobs-to-be-done (Klement, 2018).

Through the Powers' hierarchy model, the Case company understands the types of goals customers have, the priority order amongst the different types of goals, how the goal types influence each other and the dependency between goal types. In the context of jobs-to-be-done, the principles or "Be" goals construct customer's ideal self. It is the "be" goals are the motivations that drive a customer to do programs i.e. "do" goals. Lastly, the "do" goals are performed through sequences or "motor control" goals. As the hierarchy states, the "be" goals have the highest value, whereas motor goals are the lowest-level goals. Klement (2018) continues, that the core of all actions and decisions are the "be" goals. So, on the other hand, no matter how well a "do" or "motor goal" is fulfilled, it can be considered as a failure if higher "be" goal is not satisfied.

In the context of the case study, it is possible to extract goals from all levels. The interviews consisted of questions about overall motivation of the customers, the different job steps their work has in the context of creating a treatment plan, and lastly the different functional jobs were mapped. These inputs correspond to great extent to the Powers' hierarchy of goals and can be used as a framework for documenting the customer's goals and jobs-to-be-done. Figure 13 visualizes the case study's insights in the Powers' hierarchy of goals model.

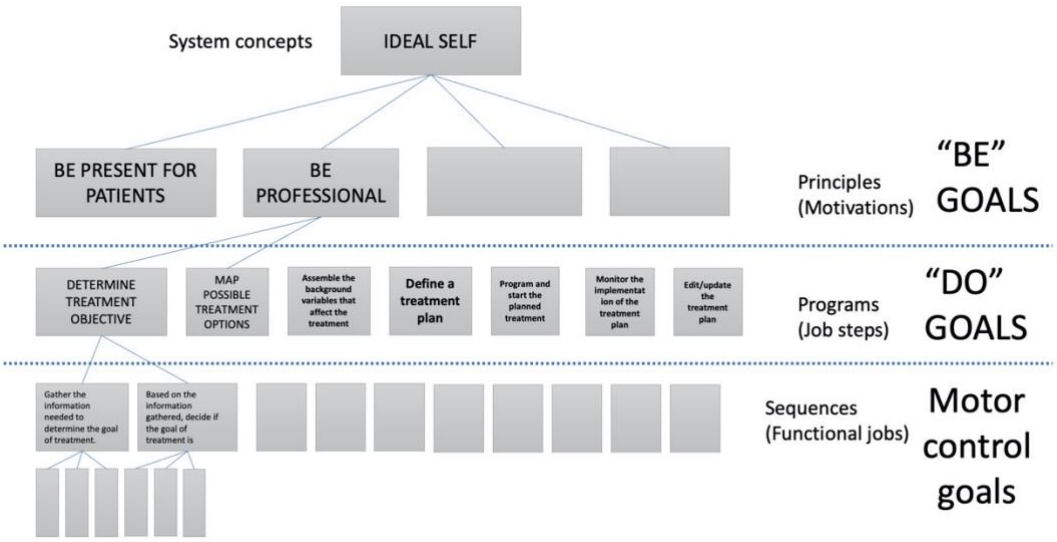

Figure 12: Example of data input to Powers' hierarchy of goals in the context of the case study

By mapping the insights from interviews, the data can be presented in a hierarchy that considers both jobs-as-progress and jobs-as-process approaches. The motor goal level's

sequences, or in other words, the functional jobs can be used, with the ODI-based desired outcomes and innovation opportunity scores, to determine where does the customer struggle the most. Once the connections to more important “be-goals” is made, the model presents a good overview how the behavioral change is done and what motivations need to considered when offering new products or services. When moving from lower-level goals upwards, it is also worth to consider if all “motor control goals” or “do” goals are necessary to fulfill the higher-level “be” goals.

Once the insights are mapped into the hierarchy, the Case company had a good overview for defining a precise how-might-we question for kicking off the ideation and a strong base for defining a value proposition for future solution, or even for updating current product’s or solution’s value proposition.

After this step, a project team has evaluated all the insights from previous steps and mapped them into a framework that can be used for current or future innovation projects. Once the insights are mapped, a project team can formulate a strong how-might-we question, that is based on customer insights. With this how-might-we question, the project team has greater confidence that the innovation projects correspond to real customer needs. Using the insights, it is also possible to start the ideation with a strong base for value proposition.

7 Conclusions

7.1 Summary

The purpose of this research was to develop a framework for identifying customer centric innovation opportunities utilizing jobs-to-be-done and outcome-driven innovation principles. The current status of the Case company was studied from the perspective of service-dominant logic (Vargo & Lusch, 2016) and the thesis discusses a mindset shift towards customer-dominant logic (Heinonen, Strandvik & Voima, 2013; Heinonen & Strandvik, 2015).

The objective was to combine jobs-to-be-done theory and outcome-driven innovation principles into an organizational framework that can be continuously used within the Case company for uncovering customer needs and innovation opportunities in unified manner. The users of this framework would be the Case company’s employees that meet the customers, or the approach can also be used continuously as a framework for projects where external vendors or researchers are used. The customer need framework was embedded to the Case company’s existing innovation process. The theoretical framework of the research explains the customer-dominant logic as a mindset for the Case company and the different approaches to jobs-to-be-done theory in literature. The outcome-driven innovation process is explored, through the case study, as a process for uncovering customer needs and identifying innovation

opportunity areas. The customer need framework is built on the theoretical framework and further developed using the findings from the case study.

To reach the objectives, this thesis answers to the following research questions:

1. How effective is the jobs-to-be-done theory in describing customer needs in pharmaceutical industry?
2. What type of innovation opportunities can be found by using outcome-driven innovation principles?
3. How can jobs-to-be-done theory be used in pharmaceutical company?

The case study was used to answer the research questions 1 and 2. As a result of the case study, using outcome-driven innovation process, eight customer-defined job steps were defined in the context of creating a treatment plan for prostate cancer patient. For each job step, the customers successfully described 31 functional jobs and 40 desired outcomes. Following the identification of customers jobs-to-be-done and desired outcomes, the desired outcomes were evaluated by the customers in an online survey based on the importance and satisfaction. The survey had a response rate of 15% and it identified 19 desired outcomes with an innovation opportunity score over 12, which proposes a very good innovation opportunity (Ulwick, 2005). Through a workshop with the Case company, four desired outcomes or innovation opportunities from the Modify-job step were chosen for further development, based on their business potential. This selection leaves 15 desired outcomes for further development at a later stage.

The four desired outcome statement with high innovation opportunity score present opportunities for service development for healthcare professionals in the context of modifying a treatment plan for prostate cancer patients. Precisely, the four outcome statements were:

- Maximize the availability of scientific evidence and data to support different prognosis and predict the outcome of follow-up treatment
- Minimize the fragmentation of data, that influences follow-up decisions, into different data sources - strive to gather data into a single view
- Minimize the time spent retrieving patient backgrounds, follow-up information, and treatment history
- Maximize time for conversation with the patient when making updates.

To build more customer empathy and understanding before moving further in the innovation process, the case study continued with round of interviews to uncover jobs-to-be-done in the light of jobs-as-progress. The results from outcome-driven innovation process were mainly functional jobs, which importance and satisfaction are measured using the desired outcomes.

Due to this, the jobs-as-progress approach was used to uncover motivations, obstacles, issues, emotional and social jobs of the healthcare professional when modifying prostate cancer patient's treatment plan. From this part of the case study, the Case company was able to describe and identify the customers' context/circumstance, issues today, usage and sources of data, and proposals for ideal solutions. Based on this knowledge a value proposition and how-might-we question was formed for the ideation phase:" "How might we help the urologists and oncologists to collect relevant scientific data about treatment options and visualize patient's treatment history in order to minimize the time used to define a modified treatment plan and to maximize the time spent discussing in the doctor-patient interaction".

The results of the case study and the outcome-driven innovation process have been discussed both internally in the Case company and externally with leading physicians in Tampere University hospital (TAYS). The results have received excellent feedback and based on them a joint project is being planned with TAYS. The process was proposed to be done in another therapeutic area by the Innovation for customer program representative in the Case company, which can be considered as a pass in the weak market test presented by Kasanen, Lukka and Siitonen (1993).

To answer the third research question, the thesis proposes a modified process that elaborates the findings from the case study. The process outlines concrete steps that leverage the different approaches to jobs-to-be-done theory and proposes Powers' (1973) hierarchy of goals as model for capturing and conceptualizing the different types of jobs-to-be-done (Carver&Scheier, 2001; Klement, 2018). The process starts from setting the scene for an innovation project based on Bettencourt (2010) approach to service innovation, maps the current functional steps and dissatisfaction using outcome-driven innovation methods (Ulwick, 2005) and builds the value proposition based on customer's motivations and struggles to make progress using Christensen et al's (2016a) approach. Lastly, the customer jobs and needs are mapped into the Powers' hierarchy of goals as "be", "do" and motor control goals, where the results from outcome-driven innovation survey highlight the "motor control" goals i.e. functional jobs that customers struggle the most. This frameworks acts a simple way to capture customer needs through interviews and survey while offering a shared language and a way to document the customer needs.

7.2 Value of the case study

The value of the case study is measured in real life. It is now discussed in three different perspectives. Firstly, this section will discuss the value of the individual project for the Case company i.e. the project to identify innovation opportunity areas for healthcare professionals that are creating a treatment plan for a prostate cancer patient. Also, the chapter will discuss the value of the case study for the Case company in broader perspective. This section

will demonstrate the value of the framework to the Case company. The chapter will end with a short discussion on the value of the case study and the report to the pharmaceutical industry. For this section, the author of this research interviewed the Case company sponsor, who acts as an Oncology Business unit lead and is part of the Case company's local leadership team (Linna 2014).

The value of the case study is two-fold. Firstly, the case study provided immediate results for the Case company's oncology team through the project that was done as part of testing the customer need framework. According to the Case company's sponsor, the immediate results help the oncology team to understand the situation of the oncologists and urologists. The customer needs that were uncovered, explain the physicians' daily challenges and where their performance is strong. The process was able to quantify and validate the needs with fairly low number of interviews by using the survey. These results also reflect the overall challenges in healthcare systems. For the oncology team, the case study has already proven to be a great discussion starter with customers. Through the results, the Case company has found a common language and understanding with the customers and has given "a mandate" to bring sensitive topics into discussions with customers. The Case company and specifically the oncology team has found great value in the unbiased data provided by the Case study.

Secondly, the case study has provided a great framework to continue and repeat the work, that was done through the project to the oncology team, with other business units in the Case company. The resources in public healthcare system are scarce and there is an unmet need to develop better tools, services and solutions to cope within the current healthcare environment. According to the sponsor, the value of the case study and the customer need framework is high since it builds a common starting point for the Case company in moving towards innovation projects and development services to healthcare professionals. The framework was found to be a structured "tool" that demonstrated how innovation opportunities can be mapped in cooperation with the customers. According to the Case company's sponsor, the results for the oncology project created trust between the Case company and the customers, which is usually difficult to create between pharmaceutical industry and the public healthcare. The framework can enable cooperation with healthcare practitioners, but also with the leaders in hospitals while creating synergies that can also bring in new types of stakeholders to the discussion that the Case company has earlier had challenges in connecting with. The framework also has potential in Case company's internal projects. There are jobs-to-be-done also in the Case company, and the framework can provide a valuable process for uncovering internal employee needs. Due to inexpensive and fast process, the framework can offer "safe" way to design and develop internal solutions to real needs as well.

When discussing the value of the case study more broadly for the pharmaceutical industry, or overall, in customer needs mapping, the Case company felt that there definitely is prominent value in the framework and process. The theory and processes are not new, but they are not, yet, very broadly used. The Case company's sponsor felt that if this type of process is adopted by large number of "consulting agencies" it might quickly lose its value for the Case company. This, in one way, demonstrates the great value of the case study for the Case company, which might get diluted if copied by competition or other practitioners.

7.3 Recommendations for the Case company

Firstly, the recommendations section will discuss the advantages and disadvantages of qualitative research conducted by semi-structured interviews and discusses how literature proposes the Case company should define their approach in achieving enough scientific rigor with the qualitative research. Secondly, using the literature as the basis, the thesis outlines a process that acknowledges the possible risks of the approach and offers solutions to mitigate these risks.

The challenges with inductive and qualitative research e.g., ethnography, observation and semi-structured interviews have been researched for decades. Already in 1979, Van Maanen described in his article "The fact of fiction in organizational ethnography" how the qualitative researcher can be misled during research by non-truthful research participants or how researchers' subjective opinions can be mixed up with research participants objective experiences and challenges. Generally, Van Maanen describes the common challenge posed upon qualitative research and especially inductive research, also described by Gioia, Corley and Hamilton (2013) – does the researcher just find the answers to fit the research questions and hypothesis building?

In their article "Seeking qualitative rigor in inductive research: Notes on the Gioia methodology", Gioia, Corley and Hamilton (2013) describe a holistic approach to inductive new concept development that seeks to meet the high standards of scientific rigor. Their approach starts from articulating a well-defined phenomenon or a research question in the form of a how-question. Gioia, Corley and Hamilton (2013) also advice to, already at the very beginning, consult existing literature to allow the discovery of new insights. At the heart of Gioia, Corley and Hamilton's (2013) approach's core are semi-structural interviews. According to their approach, once the research question has been determined the data collection should begin. The data collection is conducted by giving the participants "extraordinary voice" through the interviews, while adjusting the interview protocol based on the participant answers and new ideas that arise from the interviews. Since the focus of the approach is at new concept development, it is also encouraged to backtrack to prior interview participants for asking questions related to ideas that arose from subsequent interviews. The data analysis

is based on data coding and categorizing, where the informant/participant-centric integrity i.e. 1st-order in maintained. The 1st-order terms adhere to interview participants terms and the coding should not take an attempt to distill the number of codes or categories. The approach begins to move towards theory when the 1st-order terms are collected into a comprehensive list, categorized and organized into 2nd-order themes with labels or phrasal descriptors. At this point, the researchers start combining the informant/participant perspective to the theoretical level of themes, resulting in 2nd-order themes. According to Gioia, Corley and Hamilton (2013), 2nd-order themes are the theory-centric which start to resemble concepts that explain the phenomena or answer the research question(s). The 1st-order terms, 2nd-order themes and possible 2nd-order aggregate dimensions, a data structure can be configured. The data structure is a visual aid and offers a graphic representation of the process from raw data to terms and themes. The representation is a key component of demonstrating rigor in qualitative research (Gioia, Corley and Hamilton, 2013).

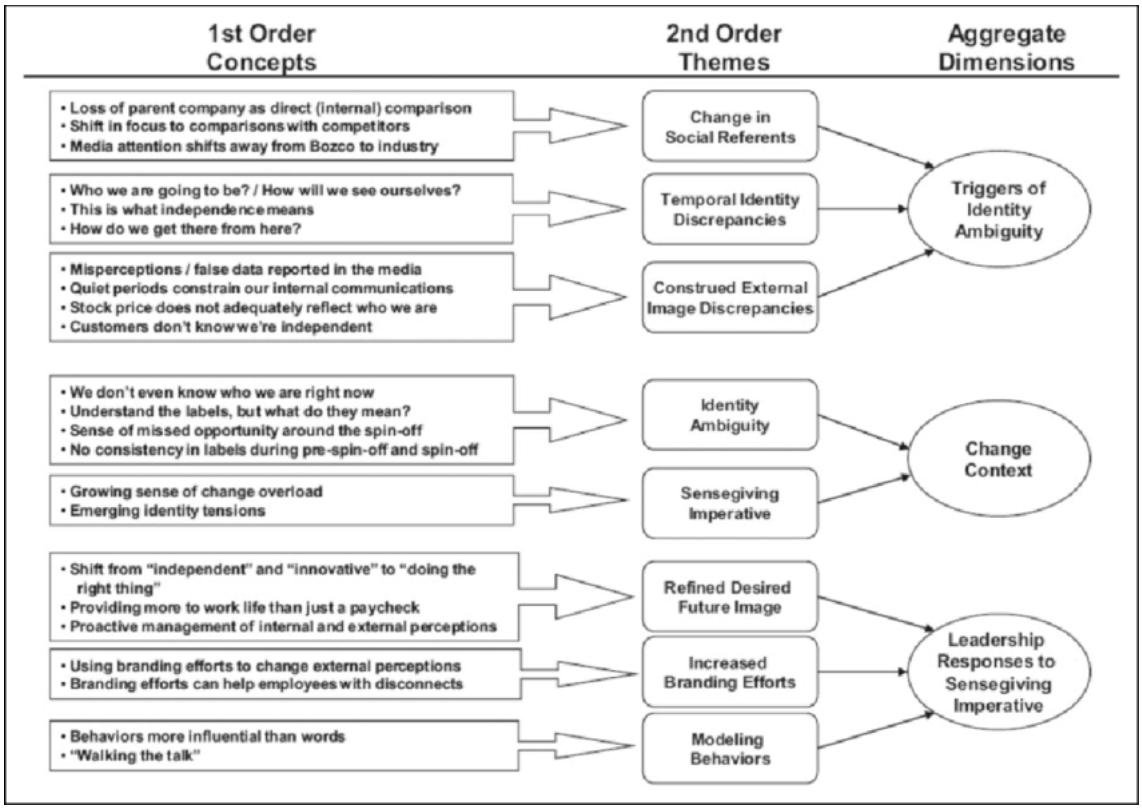

Figure 13: Data structure (Gioia, Corley & Hamilton, 2013)

Once the data structure is ready, the process starts moving the data structure towards grounded theory. In this step, the 1st-order concepts i.e. the research data, that should not have any connection to the theory, is combined to the 2nd-order themes, moving the research from inductive to abductive and starts to build a view of informant's experience in theoretical terms. The resulting grounded theory model should visualize the relationships

between emerging concepts that explain the phenomena or answer the research question. (Gioia, Corley & Hamilton, 2013)

Comparing the Gioia Methodology, the 1st-order concepts have a high resemblance on the statements collected in the ODI-interviews with customers. This potentially creates a nice connection between the two methodologies, which can be further used to create the qualitative rigor in the ODI-based qualitative research.

The proposed model for the Case company follows the outline presented by Gioia, Corley & Hamilton (2013) and the findings from the empirical part (JTBD & ODI) of the case study. As stated, the case study was run in three phases: 1) the initial mapping of job to be done steps and desired outcome statements (1st-order terms/concepts), 2) ODI-based survey to uncover areas of innovation opportunity and 3) subsequent interviews to uncover more details about the emerging concepts and innovation ideas.

Considering Gioia Methodology, and the theory and even language used in the first phase of the ODI research, the proposal is to conduct the interviews with either a consultant/research company familiar with jobs to be done theory and outcome-driven innovation process *or* train internal employee(s) in the theory and process. Another option would be to create a totally new job title/position with responsibilities in customer need mapping, qualitative customer research and analysis. The main objective in the first phase is to map job steps related to the innovation project. The scope could be, as in the case study, a core job process such as "creating a patient-centric treatment plan" or a narrower research question e.g. "how does our customer value our educational events". The latter question-based research could start by mapping how the customers perceive Case company's interactions, what job steps does it include and how does the customer define the desired outcomes for that interaction. Considering the Gioia Methodology, it would be encouraged that the interviewer or interview team does not consist members of the core brand team in the Case company. As stated by Gioia, Corley & Hamilton (2013), this would decrease the possibility of confirmation bias. In the case of core brand team interviewing the customers, prior relationship and or already-existing ideas might interfere with the research. The first phase of interviews would be followed by the ODI-based survey, conducted by the initial researcher. Also, the survey results would be analyzed by the researcher and presented to the responsible team at hand.

The presentation of the ODI-survey would present a starting point for more team-based activity or research. Through the ODI-survey, the innovation opportunities are discovered and formed into "how" question, such as in the case study. For here on, the team's customer facing employees (KAMs, Medical Advisors, Brand Managers) would oversee finding data to answer the how-question proposed by the ODI-survey. At this point, the Gioia Methodology

(Gioia, Corley & Hamilton, 2013) comes into play and the data would be structured according to the methodology to connect the customer centric view and the underlying theory.

Another clear benefit of "handing over the innovation project" to the brand team at this point, is the increase of customer activity and collaboration which were in the center of the innovation program's objectives and Case company's strategy. As stated by Ulwick (2005) the ODI-process would decrease the risk of innovation opportunities by 80% and set the brand team to a path with multiple different innovation opportunities to research and develop further. Ultimately, the brand team would have a data set structured and develop further into concepts based on the jobs to be done theory and following the Gioia Methodology example on theory model.

For the phases run by the brand team, a set of tools should be developed:

- Jobs to be done theory and Outcome-driven innovation short course to all teams.
- A guide on how to interview customers, based on Portigal (2013), Bettencourt (2010)
- How to analyze and structure data, based on Gioia Methodology

7.4 Further research

This thesis offers one way of capturing customer insights. The thesis concentrates on jobs-to-be-done theory as a framework for capturing, categorizing and organizing the customer needs: what are the customers trying to achieve, and what are their struggles and wishes. The research methods included interviews and quantitative survey. Opportunities for different approaches to customer needs exist. For example, there are multiple different ways to do qualitative research e.g. observation. These alternative methods could increase the customer understanding and identification of latent needs i.e. the needs that customers can't describe.

The case study was conducted by the author of this research, together with a consultant agency. To increase the customer understanding and ownership of innovation, the Case company should invest in research of its current innovation capabilities and use existing literature for defining a training curriculum for its employees to increase the internal capabilities. Also, embedding the customer-centric mindset broadly in the organization would benefit the continuous innovation and innovation project management.

The results of this research and customer need framework will yield in long term. It would be interesting to conduct a research, in few years, on how the identification of innovation opportunities and customer needs has increased the number of innovation projects in the Case company and how the innovation management has developed. Also, if the innovation projects, based on the case study, with TAYS or different hospitals materialize, it would

interesting to repeat the outcome-driven innovation process to see if the job steps, jobs-to-be-done or innovation opportunity scores have changed.

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Figures

Tables

Appendices

Appendix 1: Interview guide

Outcome driven innovation (JTBD)
Haastattelurunko

Kerro hieman itsestäsi alkuun

Mikä motivoi sinua ryhtymään onkologiksi/ urologiksi?

Minkälainen on tyypillinen työpäiväsi?

Mitä tavoitteita sinulla on omassa työssäsi?

Minkälaisia päätöksiä teet työpäiväsi aikana?

Hoitosuunnitelman laatiminen, toteutus ja seuranta

Mitä sinulle tarkoittaa eturauhassyöpäpotilaan hoitosuunnitelma?

Minkälainen on onnistunut hoitosuunnitelma?

Mihin sinun mielestäsi hoitosuunnitelmalla pyritään (JTBD)

Minkälaisia vaiheita hoitosuunnitelman laatimiseen liittyy?

Mitä tapahtuu ennen hoitosuunnitelman laatimista?

Mitä tapahtuu hoitosuunnitelman laatimisen jälkeen?

Minkälaisia tavoitteita vaiheisiin liittyy?

Mitä sähköisiä työkaluja/ palveluita käytät eri vaiheessa?

Onko teillä käytössä digihoitopolkua?

Minkälaista tietoa hoitosuunnitelman laatiminen vaatii?

Kuka tai ketkä osallistuvat hoitosuunnitelman tekoon (potilaan osallistuminen?)

Kuka voi päivittää hoitosuunnitelmaa? (moniammatillisesti vs. itsenäisesti ja missä tilanteissa)

Miten hoitosuunnitelma dokumentoidaan?

Missä tilanteissa hoitosuunnitelmaa tulee päivittää?

Miten päivitykset hoitosuunnitelmaan käydään lävitse moniammatillisesti ja potilaan kanssa?

Minkälaiset esteitä olet havainnut onnistuneen hoitosuunnitelman laatimiseksi?

Minkälaisia esteitä olet havainnut hoitosuunnitelman toteutumisessa?

Minkälaisia tarpeita tai toiveita sinulla on

hoitosuunnitelman laatimisen,

toteutuksen ja

seurannan kehittämiseksi?

Miten hoitosuunnitelman vaikuttavuutta tällä hetkellä mitataan?

Miten onnistut mielestäsi hoidon vaikuttavuuden seurannassa?

Miten hoitosuunnitelman vaikuttavuutta tulisi mielestäsi mitata?

Kuka määrittelee hoidon onnistumisen mittarit?

Miten hoitosuunnitelmakokonaisuus tehtäisiin, ideaalisti tulevaisuudessa?

Mikä on palkitsevinta työssäsi, joka sinua edelleen motivoi?

Appendix 2: Example of an interview memo

3.12.2020

Interview 2

Onkologi, fyysikko

Jyväskylästä kotoisin, luonnontieteet kiinnostaa. Fysiikan kautta lääketieteeseen.

Merkittävä, yleinen ja vakava sairaus, syöpä, viehättää. Onkologian tieteellisyys tärkeä.

Tyypillinen työpäivä:
suurinosa ylilääkärinä menee hallinnolliseen työhön mutta myös perustyöhön eli vastaanottoon (3h). Potilaitten hoitoon liittyviä paperiasioita (2-3h), **sairaanhoitajat pyytää neuvoa**, hoitopalautteita. Monialaisia kokouksia ja **niihin valmistautumista**. Sisäistä koulutusta. **Minimize the time used for preparing to multi-specialty meetings**

Onkologilta odotetaan kannanottoa lääkehoitoon, sädehoidosta, mutta ehkä **enemmän kokonaiskuvaa koordinoiva** rooli. Kirurgisella leikkauskeskeistä, mutta unohtuu potilas esim. nuori jolla paljon muitakin vaihtoehtoja. **Minimize the number of surgeries done to young(er) patients.**

Operatiivisella puolella luonneasia miksi hoidetaan kuten hoidetaan, eikä mietitä pitkiä potilassuhteita.

Hoitopolkua siitä näkökulmasta onko paikallinen vai levinnyt syöpämuoto. Paikallisessa hoitopolku on urologian heiniä, eikä onkologialla ole siinä osaa eikä arpaa. **Maximize the oncologist involvement in local cancer treatment pathway (young patients)**
Levinneet eturauhassyövät… Urologien/onkologien kanssa tapaaminen, jossa selvitellään ja mietitään. Tarinat usein alkuvaiheessa leikkauksen tai sädehoidon kautta urologialla seurannassa. Seuranta pitää olla sellainen, että se toteutuu. **Minimize number of ”bad” treatment and monitoring plans.** Resurssit haastaa kontrollien pitämistä. **Minimize the usage of resources in controls.** Selkeät kanavat hoitoyksikköön. **Minimize the time used when contacting treatment center.** PSA nousua tai muuta niin toivottavasti nopeasti kuvauksiin TT, luusto. **Minimize the waiting time to TT scan etc.** Toivoisi, että otettaisiin huomioon haittavaikutukset kuten luustoon tai verenpaineeseen liittyvät. **Minimize the neglectance of bone- and bloodpressure related adverse events.** Jos PSA jne vaan nousee niin mahdollisimman **vikkelästi kuvantamiseen** jotta leviäminen havaittaisiin. **Minimize the waiting time to imaging after PSA starts to rise.** Toivoisi, että potilaat ohjautuisi nopeasti moniammatillisiin kokouksiin. **Minimize the waiting time for multidisciplinary meetings.**

Optimitapauksessa onkologialla osataan käyttää oikeita hoitoja oikeaan aikaan jolloin kokonaishyöty olisi paras mahdollinen ja pystyisi viettämään mahdollisimman hyvää hoitoa. **Maximise the usage of right drugs at a right time.** Loppuvaiheessa palliatiivisen hoidon ohjaus hyvin. Jotta potilas kokisi ettei jätetä hoitamatta.

Onkologit kuvaa liiankin herkästi, joskus tuntuu että urologialla luotetaan PSA-arvoon. Joskus turhan vähän lähetetään tutkimuksiin. Toivoisi että operatiivisella puolella seuraisi aina sama lääkäri, potilaiden oireiden arviointi vaikeutuu. **Minimize the changes of treating doctor for better overview and symptom control.** Joskus kun onkologin silmin katsoo potilaiden tarinoita, niin **saattaa olla että kuvantamisia tehty liian harvoin**.

Tällä hetkellä saatavilla tietoa ensikäynnillä: **kartoitus** perussairauksista, keuhkosairauksista, yleistä toimintakykyä, lääkitystiedot, maksa-arvot, kalkkiarvot jne. Yleiskuva saadaan tätä kautta esim. hyväkuntoinen, mutta usein ollaan **mutu-tuntumalla tehty arvio**. **Jos kaikki ok niin kaikki hoitovaihtoehdot käytettävissä**.

Toivoisi tulevaisuuteen rintasyövän kaltaisia biomarkkereita, geenipaneeleita, biopsiaan perustuva analyysi. **Ennusteen tekeminen vaikeaa**. Lisää tietoa miten todennäköisesti etenee ja miten hoidot aloitetaan ja mistä on hyötyä. Ei ole käytössä markkereita. **Maximise the availability of information related to treatment options and estimates, based on data.**

Haasteita/esteitä. Muutamia vuosia sitten oli tilanne kun uudet hoidot ei ollu aikaisin käytössä korvattavuusbyrokratian takia.

Vaikuttavuuden mittaamiseen vähän työkaluja. Datan jako toisten keskusten kesken ja järjestelmä reaaliaikaisesti etsii diagnoosi ja hoitodataa. Todellisuudessa ei ole työkaluja vaikuttavuuden mittaukseen. Yksinkertainen tieto kuten kuinka monta levinneen syövän potilasta on kanta-hämeessä, syöpärekistereissä ei ole. **Moderni levinneen syövän hoidon tutkimukseen vertaaminen olisi hyödyllistä, jolloin voitaisiin todeta että tulokset vastaavat tutkimusta.** Jos ei ole, niin voidaan pohtia. OS yksinkertainen, mutta elämänlaadulliset asiat vaikeita tutkia – järjestelmät ei tuota tälläistä tietoa.

Ideaalitilanteessa potilaiden tuntemukset kuten sairauteen liittyviä kipuja, häiritseekö ne, helpottaako toimenpiteiden avulla. **Maximise the collection of patient reported symptoms, pains etc.** Onko hoidoista haittaa, joiden takia pahimmillaan hoito keskeytyy? Potilaan yleiskunnon mittaus jne.
Potilaan olotilan mukaan tiedetään pyritäänkö hoitoa jatkamaan, lopettamaan. F2F ei sanota kaikkea kun pelätään hoidon lopettamista/vaihtoehtoa. Monesti ollaan rehellisempiä esim. sairaanhoitajalle. Jos pystyisi tälläisiä signaaleja raportoimaan. esim. yleiskunnon heikkeneminen (askelmäärät jne). **Maximise the usage of automatically (non-biased) collected QoL data e.g. daily steps**

Työ on merkityksellistä, syövänhoito on aina merkityksellistä. Potilaat on lähes aina mukavia ja kiitollisia vaikka aina hoidot ei tehoakaan. Välillä tulee hyviä hoitovasteita joka luo onnistumisen tunnetta. Pitää pitkistä potilassuhteista. Näkee oman työnsä onnistumiset mutta myös epäonnistumiset. Tiede ja looginen ajattelu edellä työtä viedään eteenpäin, joka sopii hänelle.

Appendix 3: Full list of Desired outcome statements with importance, satisfaction and opportunity score

JOB MAP -STEP	DESIRED OUTCOMES	Importance score	Satisfaction score	Opportunity score
PLAN				
	Minimoi potilaan odotusaika hoidon tavoitteisiin vaikuttavien tutkimusten osalta (kuvantamistutkimukset, laboratoriotutkimukset).	6,4	1,6	**11,2**
	Minimoi potilaan tiedontulva eturauhassyövän diagnoosihetkellä.	5,4	2,4	**8,4**
	Minimoi potilaan tiedontulva eturauhassyövän diagnoosihetkellä.	5,4	3,2	**7,6**
LOCATE				
	Minimoi hoitopäätöksiin vaikuttavan datan pirstaloituminen eri tietolähteisiin – pyri keräämään tieto yhteen näkymään.	9,2	2,4	**16,0**
	Minimoi potilaan taustojen ja hoitohistorian hakemiseen käytettävä aika.	6,8	1,6	**12,0**
PREPARE				
	Minimoi aika, joka kuluu potilastapauksen valmisteluun moniammatillisen tiimin (MDT, multidisciplinary team) käsittelyä varten.	5,4	2,2	**8,6**
	Maksimoi potilastapaukseen liittyvän tiedonmäärä kollektiivisen hoitopäätöksenteon helpottamiseksi.	7,1	2,5	**11,7**
	Minimoi aika, jonka potilas joutuu odottamaan päästäkseen moniammatillisen hoitotiimin hoitoarvioon.	8,3	1,3	**15,3**
CONFIRM				
	Minimoi nuoremmille potilaille tehtävien leikkausten määrää, jos käytettävissä on laajasti myös muita vaihtoehtoisia hoitomuotoja.	5,2	4,8	**5,6**
	Maksimoi visualisoidun/havainnollisen hoitopolun käyttöä, kun hoitosuunnitelmaa tehdään moniammatillisessa yhteistyössä.	2,4	2,0	**2,8**
	Minimoi potilaan epärealistiset odotukset hoidon tavoitteista ja tuloksista, mikä johtuu kokonaiskuvan puutteesta.	9,2	3,6	**14,8**
	Maksimoi datan hyödyntäminen hoitopäätöstä tehtäessä ja hoitosuunnitelmaa laadittaessa.	8,4	2,5	**14,3**
	Maksimoi keskusteluun käytettävä aika potilaan kanssa hoitovaihtojen läpikäyntiin.	8,8	2,4	**15,2**
EXECUTE				
	Minimoi hoidon keskeyttävien potilaiden määrä hoidon ja seurannan aikana.	8,4	5,0	**11,8**
	Maksimoi potilaan tuki hoitojen aikana.	8,8	3,6	**14,0**
	Minimoi potilaan kokemukset siitä, ettei hän koe olevansa hyvässä hoidossa tai hoidossa ei ole jatkuvuutta.	9,6	4,8	**14,4**
MONITOR				
	Minimoi hoitohenkilökunnan käyttämää resurssia potilaan seurantaprotokollassa.	5,2	2,0	**8,4**
	Minimoi aika, jonka potilas käyttää saadakseen yhteyden hoitavaan yksikköön	8,8	2,4	**15,2**
	Maksimoi potilaiden raportoimien haittavaikutusten/oireiden hyödyntäminen suhteessa hoitosuunnitelmaan.	7,2	1,6	**12,8**
	Minimoi potilaiden odotusaika kontrollikäyntiin ja jatkotutkimuksiin, jos PsA-arvo kohoaa viitearvojen yläpuolelle.	7,2	3,2	**11,2**
	Minimoi hoitavan/hoidosta vastaavan henkilökunnan vaihtuvuus paremman ymmärryksen ja oireiden hallinnan varmistamiseksi.	6,8	2,8	**10,8**
	Maksimoi automatisoitujen, elämäntavoista ja elämänlaadusta kertovien kvantitatiivisten mittareiden käyttö (askelmäärät, elämänlaatumittarit)	1,6	0,4	**2,8**
MODIFY				
	Maksimoi eri hoitovaihtoehtoja tukevan ja ennusteesta kertovan tieteellisen näytön ja datan saatavuus jatkohoidosta päätettäessä.	8,8	1,6	**16,0**
	Minimoi jatkohoitopäätöksiin vaikuttavan datan pirstaloituminen eri tietolähteisiin – pyri keräämään tieto yhteen näkymään.	7,6	1,2	**14,0**
	Minimoi potilaan taustojen, seurantatietojen ja hoitohistorian hakemiseen käytettävä aika.	7,6	0,8	**14,4**
	Maksimoi aika potilaan kanssa keskustelulle päivityksiä tehdessä.	8,8	2,4	**15,2**
CONCLUDE				
	Maksimoi potilaan ymmärrys siitä, mitä sairaudesta parantuminen tarkoittaa käytännön kannalta ja mitä asioita potilaan kannattaisi parantumisesta huolimatta tarkkailla.	8,8	2,9	**14,7**
	Maksimoi potilaan ymmärrys, mitä toiseen hoitoyksikköön siirtyminen tarkoittaa käytännössä.	8,0	4,0	**12,0**
	Maksimoi potilaan ymmärrys palliatiivisen hoidon tarkoituksesta ja tavoitteista.	9,6	2,5	**16,7**
	Maksimoi hoitoa jatkavan yksikön ymmärrys potilaan yksilöllisistä ominaisuuksista ja hoitohistoriasta.	8,3	2,5	**14,1**
	Minimoi potilaan kokema ahdistus ja turvattomuuden tunne hoidon päättyessä tai siirtyessä muualle.	9,2	2,4	**16,0**
	Minimoi potilaan tarvetta ottaa yhteyttä yksikköön hoidon päättymisen ja siirtymisen jälkeen.	6,3	2,4	**10,2**

Appendix 4: Interview guide for Core service innovation interviews:

Tieteellinen näyttö ja datan käyttö:

- Hoitosuunnitelmaa muokatessa ja hoitovaihtoehtoja puntaroidessa, miten nykyisin hyödynnätte tieteellistä näyttöä ja dataa?
- Minkälaisia tietolähteitä käytätte tai suositte? Kansainväliset isot hoitosuosituksen NCCP,
- Minkälaisia käyttötarkoituksia tieteelliselle näytölle ja datalle olisi hoitosuunnitelmaa muokatessa?
- Minkälaisia ongelmia koitatte ratkaista tai välttää näytön ja/tai datan avulla?
- Mitä päätöksiä pyritte tekemään näytön tai datan avulla hoitosuunnitelmaa päivittäessä?
- Ideaalitilanteessa miten haluaisitte käyttää dataa tai tieteellistä näyttöä työkalujen muodossa? Missä muodossa datan tulisi olla, jotta se olisi helposti käytettävää?

Potilastiedot ja hoitohistoria

- Hoitosuunnitelmaa muokatessa miten ja mistä haette potilaan taustatietoja, seurantatietoja ja/tai hoitohistoriaa?
- Minkälaisia käyttötarkoituksia näille tiedoille on?
- Minkälaiset tiedot olisivat hyödyllisiä, joita ei tällä hetkellä ole saatavilla, helposti?
- Minkälaisia haasteita tässä vaiheessa kohtaatte tai olette havainneet?
- Minkälaisia parannusideoita teillä olisi tähän tehtävään?
- Ideaalitilanteessa, minkälaisista työkaluista tai palveluista näkisitte olevan hyötyä tässä tilanteessa?

Potilaan kohtaaminen

- Minkälaisia haasteita hoitosuunnitelman päivityksessä koette potilaskohtaamisen osalta?
- Minkälaisia haasteita haluaisitte välttää tai ratkaista tässä tilanteessa?
- Ideaalitilanteessa, minkälaisia työkaluja tai palveluita teillä olisi käytössä tukemaan potilaan kohtaamista hoitosuunnitelmaa päivitettäessä?