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VALUE CO-CREATION IN ITIL 4 -FRAMEWORK

UNIVERSITY OF JYVÄSKYLÄ
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ABSTRACT

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ITIL is the world's most widely used IT service management guiding framework, which the latest version was released in 2019. In the latest version, customer value and value creation were raised as important factors to guide ITSM in the framework following operations. This study examined how value creation, and in particular value co-creation, is reflected in practice, and what kind of metrics have been established to monitor customer received value. The theoretical framework is built around the current value creation in services research, and in addition the ITIL 4 framework and its key components are opened for the reader as well. The research was carried out through semi-structured interviews as a qualitative study. The value experienced by the customer was perceived as an important factor in IT service management, but it was not however the most important factor to guide IT service management. Customers were involved in value co-creation by differing ways depending on the particular service. Determining the value experienced by the customer as measurable quantity and thus constructing the measurement around it was generally considered as a difficult task.

Keywords: ITIL 4, ITSM, Value co-creation, value measurement

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ITIL on maailman käytetyin IT-palveluhallinnan viitekehys, jonka uusin versio julkaistiin vuonna 2019. Uudessa versiossa asiakasarvo ja arvon yhteisluonti nostettiin merkittäviksi IT-palveluhallintaan ohjaavaksi tekijäksi viitekehyksessä. Tässä tutkimuksessa selvitettiin miten arvonluonti, ja erityisesti arvon yhteisluonti, näkyy käytännössä ja minkälaisia asiakkaan arvoa mittaavia mittareita on otettu käyttöön tämän monitoroimiseksi. Teoreettinen viitekehys rakentuu valloilla olevien arvon yhteisluonnin tutkimusten ympärille, jonka lisäksi myös ITIL 4 -viitekehystä ja sen keskeisiä komponentteja avataan lukijalla. Tutkimus toteutettiin teemahaastatteluilla kvalitatiivisena tutkimuksena. Asiakkaan kokema arvo koettiin tärkeäksi tekijäksi IT-palveluhallinnan parissa, mutta se ei ollut kuitenkaan absoluuttisesti tärkein IT-palveluhallintaa ohjaava tekijä. Asiakkaita osallistutettiin yhteisluontiin palvelusta riippuen vaihtelevilla tavoilla. Asiakkaan kokeman arvon määrittäminen mitattavaksi suureeksi ja täten mittaamisen rakentaminen tämän ympärille koettiin yleisesti ottaen vaikeaksi.

Asiasanat: ITIL 4, ITSM, Arvon yhteisluonti, arvon mittaaminen

FIGURES

TABLES

CONTENTS

1 INTRODUCTION

In the modern and global world, the Information Technology has brought much new, but also changed services, their processes, and fundamental analysis of them. In the field of Information Systems there is rising interest towards the benefits of Information Technology, but also a need to analyze and study the methods that are conducting the thrive of Information Technology and especially its services. The current guiding paradigm presented by Vargo and Lusch (2004) is determining that all of the exchange in the modern economy is performed by services delivering and/or enabling operant and operant resources. Thus, there has also been implications that majority of the usage of IT is enabled through service interactions, and Winkler and Wulf (2019, p.640) are arguing that service orientation has evolved to dominating approach to guide IT services in organizations globally. As the interactions are required to facilitate the value co-creation, there is investigated in this study practical examples and description how the value co-creation is established in services, and how the customer value is estimated in practice.

In this master's thesis, the leading Information Technology Service Management framework ITIL (*Information Technology Infrastructure Library*), and especially its newest recently published version ITIL 4, is studied further. As in the new framework the value creation has been raised as an underlying factor of service production and delivery, the thesis is focusing to emphasize the value creation processes on Information Technology Service Management, later referred as an ITSM. The study is aiming to research and describe the practice, and the processes of how value creation is enabled in the IT services and especially in the services that are somehow utilizing the framework and guidelines of ITIL 4. As the value is seen to be facilitated through interactions between service provider and the actual customer/end-user, value co-creation is studied as well to describe the scientific theorem of value creation, which is eventually matched with the ITIL 4 framework and its core concepts. In this study the value, value co-creation, and its central phenomena and concepts are introduced first by literature, before moving to present the concept of ITSM and ITIL 4. Later there are presented

synthesis of the literature to theorize the study's subject and actual research questions as they are based on the need emerged from the previous research.

In this study, it was researched further how the value co-creation interactions are established in the actual field of business, what are key drivers to guide the value co-creation, and how the value created is eventually measured in ITSM operations following the ITIL 4 -framework. The research questions were following:

1. What kind of actions and processes organizations are taking to facilitate the value co-creation in ITIL 4 context?
2. What kind of actions are taken to facilitate the feedback loop and interactions with customers to gain insights?
3. How is the successfulness of value co-creation and value delivery measured? What are the key metrics?

Research was conducted by interviewing five experts in four organizations working directly with ITSM that is following newest version of ITIL, the ITIL 4-framework. Main themes identified from the semi-structured interviews are opened further in the results chapter before described further in the following discussion. Eventually limitations of the study and further research is covered up in the conclusion.

In this study it was noticed that value co-creation interactions are established differently depending on the service. As the customer was experienced as a very important actor in ITSM context, it was not felt as the most influential partner in the service development as the major influential party was often some major stake- or shareholder of service providing (sub)organization. Generally, the ITSM experts wanted to understand the customer and end-user as good as possible to offer the best IT-service for them as possible by the allocation of resources they were having. When the perspective regarding of value creation was seen as an important new addition to ITIL 4 -framework, the framework did not give any new easily adaptable solutions for framework following ITSM organizations. In addition, determining the value experienced by the customer as a measurable unit and thus constructing the measurement around it was generally considered to be a difficult task. As the framework update received very positive feedback from ITSM experts' side, the ITIL was seen to receive a necessary update as the older ITIL v3 was considered heavily outdated. The organizations were generally seeking already better customer understanding and they had paid attention towards customers value in IT-services before the releasement of ITIL 4 framework update.

2 VALUE

In this chapter concept of value is presented first from very general approach, but the perspective is shifted towards value generation in services. Conceptual paradigm's change from older Goods-Dominant logic to Service-Dominant Logic is also covered. Eventually value co-creation theory is covered, as it can be seen aligning well with ITIL's continual improvement model to generate better value for the customer. Systemic approach considering value co-creation is also presented to layout foundation for study's empirical section. Value generation in instances associating heavily on the research topic is also covered, considering for example perspectives from multi-vendor service delivery environment.

2.1 General implications of value in the field of Information Systems

Generally, value has been seen as a realized benefit which can be applied both in the organizational business, but also in the individual consumer level. The correct definitions are varying a lot depending on a field of the science as the Melville, Kraemer and Gurbaxani (2004) are suggesting. Value's realization can be seen to be very consumer specific, as the value cannot be determined any other than the one who is perceiving the value. For example, Zeithaml (1988) describes value from customers' view as a trade-off, where they benefit in giving up something in return, but in addition, Grönroos and Voima (2013) are also defining value to be something that can be realized only through the usage of the value serving artifact (product or service) by the end-user. It's generally understood that value is realized through personal context by personal judgement, what for example Hilton, Hughes and Chalcraft (2012) are claiming. The economical perspective of the value can be described through Vargo, Maglio, and Akaka's (2008) definition as they are stating that value creation is a core process in economic exchange. In the new ITIL 4 framework, the value creation and enablement are seen as a customer produced outcome of working in service facilitated ecosystem.

Therefore, there is investigated theory behind that particular phenomenon in the following literature review. Simplified: how the value creation is behaving especially in service environment.

A major new theoretical paradigm Service Dominant logic was presented in 2004 by Vargo and Lusch (2004) to theorize service ecosystem from marketing perspective, and to change off from the older perspectives of previously dominated Goods-Centered logic. Previously the idea behind the Goods-Dominant logic (later G-D logic) has been goods orientated. The goods are seen to be operand resource and end products, compared to S-D logics perspective to keep goods as transmitters of operant resources (Vargo & Lusch, 2004). In Service-Dominant logic, there are existing operant resources such as knowledge and skills, which eventually can create value for the service user, but also operand resources which can transmit the value potential of operant resources (Vargo & Lusch, 2004). Simplified, goods in exchange are only instruments in transmitting resources (Vargo et al., 2008). Previously in the G-D logic the customer has been seen as an operand resource and is considered to be only a recipient of the goods. The perspective is changed a bit upside down as Vargo and Lusch (2004) are arguing that the value is always determined by the consumer through value-in-use, and they specified it later on their next study that value is determined by the one who benefits from the realization of the value (Vargo & Lusch, 2008). This proposition is having major difference compared to the older G-D logic as previously the value has been existing only inside of the product. Previously presented theorem is widened up later by Grönroos and Voima (2013) as they are arguing that the customer is the main value creator, as the value is realised in the use of product or service. Therefore, they are presenting organizations position is to be facilitator of the value creation process by providing potential value for the customer through value propositions. However, this is opening room for two-way value realization as the organization offering the service may gain knowledge from the end-user as well.

According to the S-D logic, the main factor to facilitate the value is not the good itself, but the knowledge and skills associating to the service or products which eventually may benefit the end-user through its interactions by enabling value creation in the usage of the product, good, or service. Thus, as the enablement of the value and its benefits are determined by the user of the service through value-in-use, the service providers can only make value propositions for the end-user (Vargo & Lusch, 2008). Regarding the value propositions, Sandström, Edvardsson, Kristensson, and Magnusson (2008) are suggesting that value propositions are emerging from physical and technical enablers which are eventually thriving into functional and emotional value propositions of the customer. Thus, the services' value propositions may help the companies to position themselves in the markets by offering functional or emotional conditions to be realized as a value. However, it should be noticed that the eventual usage and the value generated through value-in-use may be different as intended by the organization making the value proposition at first stage (Grönroos & Voima, 2013).

After Vargo's and Lusch publications (2004; 2008), Cronholm, Göbel, and Åkesson (2020) are claiming the S-D logic's major benefits have encouraged organizations to adapt S-D logic perspective to their operations in great numbers. According to previous authors, S-D logic is applied also in great amounts in IT-services. As findings of Cronholm, Göbel, and Åkesson (2020) are proposing, ITIL, which is a major ITSM framework, is in most of its parts compliance with S-D logic, so creation of value inside of ITIL can discussed further from service dominant side of view.

2.2 Value in Services

As mentioned above, in the 2004 Vargo and Lusch published Service-Dominant logic to illustrate the value creation in services. The Service-Dominant logic was then evolved in the 2008 by Vargo and Lusch (2008) to be more like a mindset to explain the phenomena behind value creation in the services. In service systems, engaging service exchange relationships can be mutually beneficial for both service provider and the consumer (Vargo et al, 2008), thus the consumer is always playing a co-creation role of the value in services. As mentioned above in the previous chapter, value propositions are made for the customer, but the customer always defines the value what the one is able to realize from the usage of the service and it is heavily phenomenologically determined (Vargo & Lusch, 2008). In addition, it is noteworthy to understand especially in service ecosystems, that value can be realized for multiple agents, rather than only one. These can be conjunct relations, or provider-consumer specific, if the value is created mutually through value co-creation process for example. Thus, the value from outcome can then be different for different operators of service ecosystem, and then defined by different conditions as the beneficiary of the value is defining it. However, all the members in the value stream can be beneficiaries such the service consumer, but also its provider.

In terms of the value generation, the value generation process can be existing without being a service-related relationship. For example, Vargo, Maglia, and Akaka (2008) are arguing that value can be generated without any exchange processes in system where the goods to acquire value are obtained naturally. Simplified, one example is breathing air. However, if the air is needed to be breathed underwater via oxygen tank, the relationships are formed and unit holding potential value is then enchanted through value-in-exchange process (Vargo et al., 2008). According to Vargo and Lusch (2008), the organization can only make value propositions rather than deliver value, but they can also create value as an offeror of the service, but then the creation process happens in joint value creation sphere where also the customer accesses to co-producer role to enable value co-creation (Grönroos & Voima, 2013).

In service dominant logic, people are exchanging to obtain benefits from knowledge, skills, or services, which are generally seen as an operant resource like described above. Therefore, goods are seen as a transmitter of potential value,

and can be realized in value-creation process and customer is seen as a coproducer in services (Vargo & Lusch, 2004). Lusch and Nambisan (2015) are simplifying this a bit to conclude that services are involving appliance of resources to benefit an actor – the actor can be oneself to offer the service, or another external actor, like customer. Perspective is widely accepted by the literature (Vargo & Lusch, 2004; Grönroos & Voima, 2014; Lusch & Nambisan, 2015) as it is claimed that the customer is also a value creator in services – as eventually the value is always realized by the customer actions. Additionally, as the organizations are not able to deliver the value, they can only make up value propositions that are eventually useful or beneficiary for the customer (Lusch & Nambisan, 2015).

Grönroos and Voima (2013) are defining value in service to be realized as value-in-use, when the customer creates the value during usage of the particles of the service. These can be for example resources or processes of the service offering (Grönroos & Voima, 2013). Vargo and Lusch (2004) are admitting the same, as the value in the service is seen to be defined and created with the customer instead being an embedded output. Sandström et al. (2008) have conceptualized service experience and value realisation on their study for a framework, which is visualized in the figure 1.

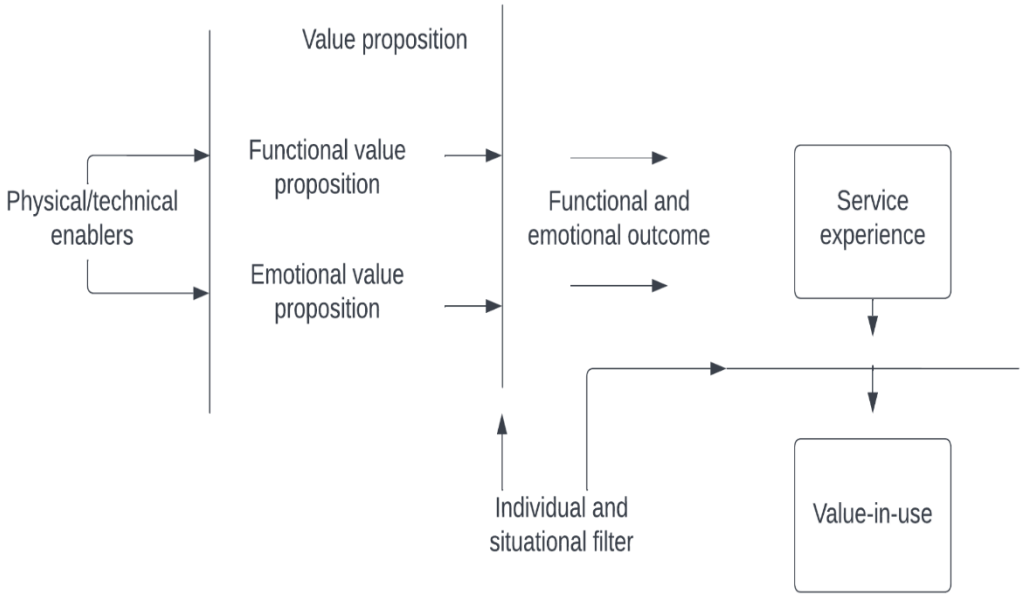

Figure 1 A framework for how the service experience is liked to value in use. (Sandström et al., 2008, p.121)

Value can then be seen as an outcome of a service and a service experience which is obtained through value-in-use -process (Sandström et al., 2008; Grönroos & Voima, 2013). Service is enabling value propositions for the end-user of the service which can be either emotional or functional proposition. The offered proposition is however always felt individually through the end-user's context, where ones individual and situational filters are affecting to realizable outcome which is eventually converted as service experience. The felt experience is eventually

converted to the value through value-in-use. Enabled value propositions are eventually matched to the current and individual context before to be realized at value-in-use. However, the framework is not including value co-creation, thus following literature for example Vargo and Lusch (2008) and Grönroos and Voima (2013) are describing the co-creation in service ecosystem more deeply from cooperative perspective of actors in the service ecosystem. Therefore, this model can be considered as an individual's framework to define the functions belonging to value creation process. As the value is emerging from operant resource such as a knowledge or skill of individual, the service is needed to be enabled the value for the end-user. It can be an operand resource such as a good to storing the value (physical artefact for example), or a facilitation to enable the usage of one's skills, such as a barber shop or cloud environment for development purposes. When the enablement for service transition is enabled, the service can offer value propositions.

Value propositions are normally divided to functional and emotional propositions depending how the end-user thinks the value is realized. For example, emotional proposition could be a thought to become more attractive by having new haircut in the barber shop, and functional proposition would be an exception to have a configured cloud instance delivered by external cloud consultant. Enablers can then be seen as a foundation of service's value propositions which are contextually evaluated and filtered to eventually became an experience of the service. The expectations are not always one hundred percentage matched with the value propositions, as the end-users context, individual, and situational filters may affect the result how the service is experienced.

Outcomes of the service may result to service experience (mostly through matching the expectations), but also the way how the service is delivered is affecting to felt experience. For example, an unpleasant facilitation for service delivery such as a dirty barber shop or difficult communication channels with cloud consultant may result to negative experience of service delivery. Eventually, the outcome of the service is transferred into the value through the usage of the service. Value can be gained from a date where counterpart thinks the individual's hairstyle is attractive and compliments it. So, the outcome is desirable. On the other hand, in the cloud consultant example, the done configuration may not fulfill all the expectations, or the end-user's skill to use the configured cloud platform is limited so the potential value is not realized.

2.3 Value co-creation

When talking about services and its consumer, it is important to notice that user according to service dominant logic is always considered to be value co-creator of the service (Vargo & Lusch, 2008; Grönroos & Voima, 2013). Payne, Storbacka and Frow (2008) are suggesting value co-creation to be a desired interaction between service provider and its consumer. Consumers are engaging to dialog between the service provider and the interaction between operators of service

ecosystem is always established. Grönroos and Voima (2013) are defining value co-creation system as a process, where service provider is able to access customers value creation sphere, to form a joint value creation sphere making co-operated processes in value creation available. Thus, this can be considered to be an interaction Payne et al. (2008) are defining. Regarding the theoretical foundation of the previous, Vargo et al. (2008) are arguing that service systems co-create value, and rely on the resources of others to stay afloat, and the service-for-service exchange and resource integration are fuelled by this interdependence. In figure 2 there is presented value co-creation in service systems to frame the relationships in value co creation processes.

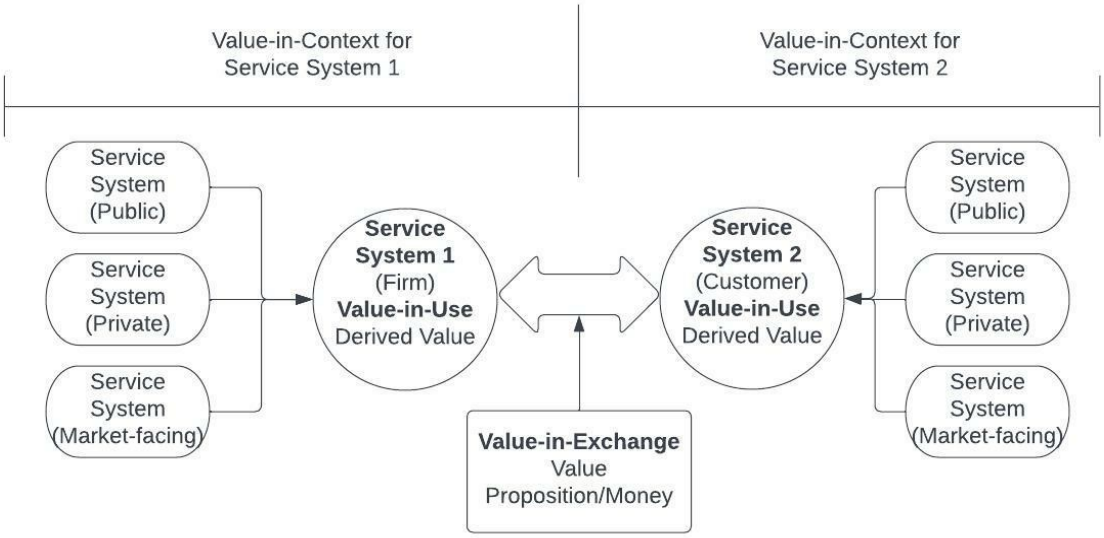

Figure 2 Value co-creation among service systems (Vargo, Maglio & Akaka, 2008, p. 149)

Value is proposed for the market by the service provider and provided via an operant or operand resource for the customer to be consumed in value-in-use (Vargo et al., 2008). Value co-creation is not limited to the activities of a single exchange or a pair of service systems. It happens when existing resources are combined with those from varying service systems, that are contributing to system's well-being, as determined by the system's environmental context. Therefore, another service systems affecting the other service systems are also playing a part in value creation process by fundamentally making value proposition available for example by allowing service to be delivered. Thus, through exchange, each service system has access to resources from other service system, and in that exchange process knowledge is transmitted between service systems and operators to enable co-creation of value (Vargo et al., 2008). When the co-creation is two side process with different counterparts and operators in the ecosystem, Payne et al. (2008) are splitting the co-creation of value in to three differing processes.

1. Customer value-creating process: business-to-consumer relationship, the processes, resources, and practices which customers use to

manage their activities. In a business-to-business relationship, the processes are ones which the customer organization uses to manage its business and its relationships with suppliers.

2. Supplier value-creating processes: the processes, resources, and practices which the supplier uses to manage its business and its relationships with customer and other relevant stakeholders.

3. Encounter processes—the processes and practices of interaction and exchange that take place within customer and supplier relationships and which need to be managed to develop successful co-creation opportunities

Payne et al. (2008, p.85)

In terms of benefits, for example Tax, McCutcheon and Wilkinson (2013) are claiming that cocreation has a potential to have significant benefits for the parties of service ecosystem. In addition, customer's perspective is important to encounter, as the service encounter is portrayed then more realistic. The importance of co-creation is highlighted in the literature as well, as for example Lusch and Vargo (2014) are proposing major benefits for organizations when they could identify customers' needs and perspectives. Co-creational approach could be applied to seek strategic and competitive advantage by offering better services for markets. However, value co-creation is not always successful and mutual for both parties of co-creation process. Grönroos and Voima (2013), and Winkler and Wulf (2019) are pointing out that for example mismanagement can lead to destruction of value, knowing as value co-destruction, if interactions are not correct.

Vargo's, Maglio's and Akaka's (2008) presented framework regarding service value co-creation system is theoretically validated by Grönroos and Voima (2013), as they are proposing, that service providers can interact with customers in customers' value creation process if customers' value sphere is defined and interacted successfully. In figure 3 there is presented value creation spheres, presented by previous authors. Generally, it is interesting to notice the similarities between the models of value co-creation among services systems (Vargo et al., 2008) and Value creation spheres (Grönroos & Voima, 2013), as the service system is seemingly staying in the same, but only perspective is changed from describing the value processes to describe their relationships and accessibility of the exchange process – which is described further by Grönroos and Voima (2013).

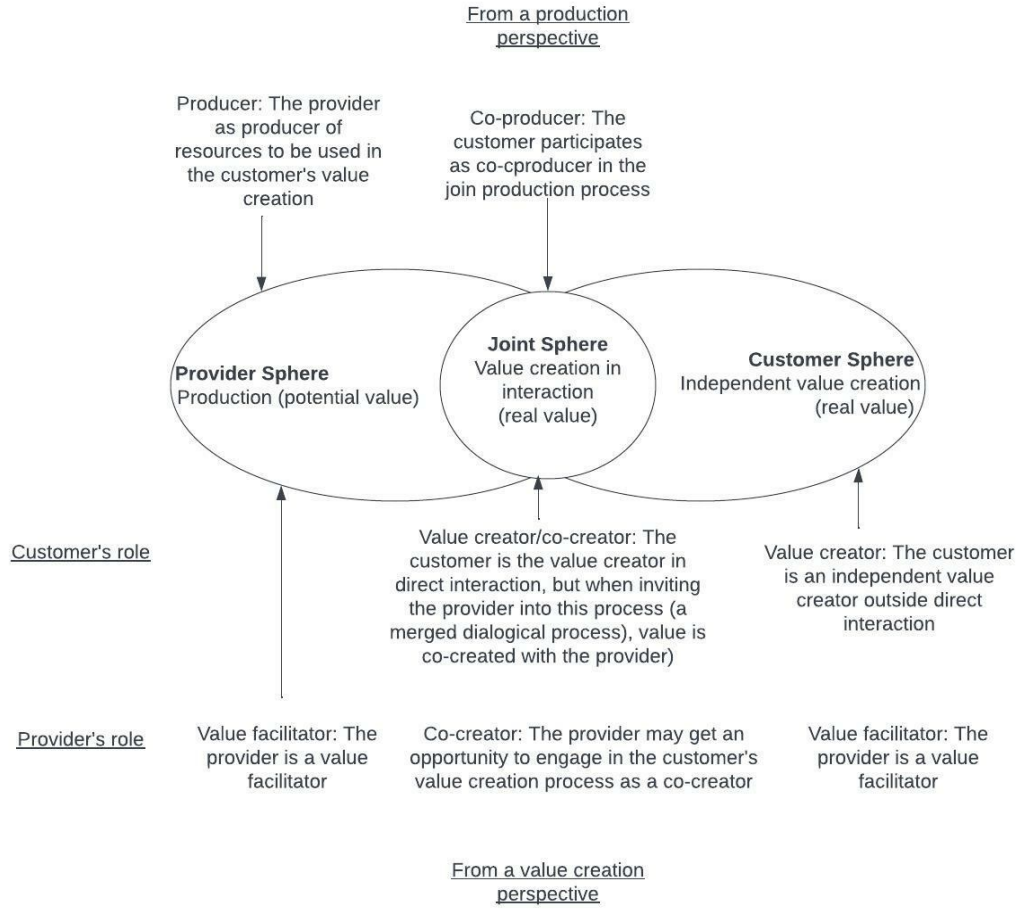

Figure 3 Value creation spheres (Grönroos & Voima, 2013, p. 9)

In illustration regarding value creation spheres, Grönroos and Voima (2013) are describing how roles between organization and customer are changing in terms of moving between spheres. Organization is in charge of production process where potential value is created originally. In provider sphere the customer interaction is made possible and there is need to enable service transfer processes for the customer. Eventually customer's value creation is facilitated to enable value-in-use by the customer (Grönroos & Voima, 2013). As the provider sphere generates the potential value, it is worthy to notice that activities performed in this sphere do not create value, rather only facilitate the potential value in terms of outputs of the providers processes (Grönroos & Voima, 2013). This could be understood as facilitating the foundations to generate or deliver operant or operand resources. For a practical example, in the barber shop the barber is having all the necessary equipment available, and through the valid facilities the barber is having ability to deliver the service for the customer. Organization is in full charge of these processes rather are they physical or virtual. Value is eventually co-created in joint sphere where the value creation is facilitated through suitable environment for interactions between the provider and the customer (Grönroos & Voima, 2013).

Grönroos (2011), and Grönroos and Voima (2013) are claiming that the value-co-creation can exists only through direct interactions, and that the customer is in charge of value creation in joint sphere, but the service provider can take a part in that process and influence it as a co-creator of the value. Grönroos (2011) for example points out that through interactions the provider can influence the value creational process and become the value co-creator. Regarding the previous barber example, in joint sphere the interaction between the customer and barber are making co-creation process possible. The customer may give wishes what kind of haircut customer wants to have, and the barber can share opinions regarding is it possible to carry out, for example. However, as a Grönroos and Voima (2013), but also Tax et al. (2013), are claiming that during the co-creation process the organizations interactions may have positive, but also negative effects. Sharing an opinion regarding hair type may result to desirable outcome of the service from customers side, but if the feedback or commenting is not made politely the service experience may decrease.

Grönroos and Voima (2013) are presenting that the spheres are dynamic, as the spheres can move by the processes and interactions in the boundaries the service facilitates them. For example, service provider can participate customer as a co-producer in production process, like in the previous barber example, which extends the joint sphere. The customer can also cross existing boundaries of spheres for example interacting with high-lever manager, but organization can also widen up the sphere by setting up more interaction points with the customer – for example asking feedback after the service delivery. Grönroos and Voima (2013) are admitting that the joint sphere may even be dominant in value creation if interactions are enabled early in service design or development. Eventually the customer sphere contains independent value creation environment for the customer, where the value is created through customers activities with the resources obtained on earlier stage (Grönroos & Voima, 2013), which can be evaluated for example through Sandström et al. (2008) framework covering propositions and individual context.

2.3.1 Value co-creation in multi actor service environment

Nowadays when the societies and organizations are networked by complex manners, Pinho, Beirao and Patricio (2014) are suggesting that the services are especially in the IT environment became somehow complex and networked together. Supplier networks and interacts with customers' networks. However, the value streams can still be noted and discovered. Especially when considered services from IT perspective the utilization of cloud services has placed roots for more complex and networked service architectures in terms of value creation and especially in terms of value co-creation. This opens up possibility to 3rd party operators to offer added value for the customer by utilizations of the original vendors' services in the processes which are aimed to increase the value for the customer by the actions of 3rd party provider. As for example we can consider situation where external consultant company sells their expertise in the cloud platform operations where the cloud platform provider is another company. By that the

external consultant company enters the value creation process as an additional actor. Thus, this opens an additional value stream from 3rd vendor side to the original customer. The value can be in operant or in operand format, the latter to be delivered through an additional completely new service provided mostly by the 3rd party side only using the original platform in delivering or hosting the service. It is noteworthy to also realize the relationships between the 3rd party vendor and the original supplier. When using the original service, the value proposition and value stream is established from original vendors side to 3rd party vendor side. Relationship can be more traditional vendor-customer -style of relationship, but there can also be existing competition in the markets between the actors, if the supplier is potentially offering same kind of service also that the 3rd actor is offering. Despite of the potential competition in the markets, they can still share value co-creation relationship together if the original vendor participates the 3rd party operator in co-creation role.

Kohtamäki and Rajala (2016) are emphazing this multi actor-affiliated perspective and phenomenon on the figure 4. In terms of co-creation especially when the environment and system which hosts the value creation is networked, the collaboration processes, customers, user communities, and other stakeholders are having relationships towards each other's (Kohtamäki & Rajala, 2016). Therefore, it is noteworthy to understand the effects of one actor's activities to the network, as the effect may influence not only the particular relationship where the activity takes place, but also co-creation, coproduction, and value propositions in the other actor-to-actor relationships on the network. This may eventually lead to changed co-creation and coproducing offers from 3rd party actor. As argued by authors (Kohtamäki & Rantala, 2016), the value creation is networked phenomenon rather than specified by boundaries of single organization. Lusch and Nambisan (2015) are proposing something similar, as they are suggesting increasing focus towards phenomena and relations happening in the actor-to-actor networks is needed.

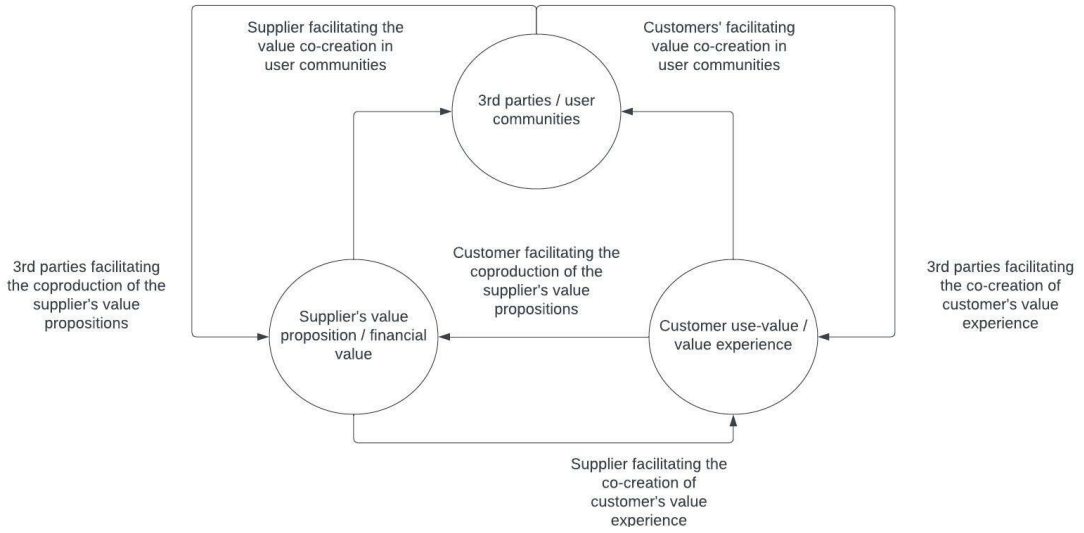

Figure 4 Actors' role in value co-creation and coproduction (Kohtamäki & Rantala, 2016, p.7)

Simplified, the actors are networked together and the actors' activities in the network are having impact to each other's. However, because of the networked services are not always just generating value together between the actors rather they may be also co-producing service proposals for the end-user (where the value is eventually consumed through value-in-use) there have risen a need to categorize actions in the multi-actor network. Kohtamäki and Rantala (2016) are arguing that in the previous literature there is not clear clarity of different concepts of value co-creation and coproduction. Thus, they are claiming there is a need for discover practices for value co-creation and coproduction. They are clarifying the concepts regarding co-creation and co-creation in the figure 5. Coproduction can be seen as an activity where customers participates to build up vendors' value proposition, and value co-creation is activity where customer experience is generated jointly (Kohtamäki & Rantala, 2016). Collaboration is seemed to be covering both of these activities.

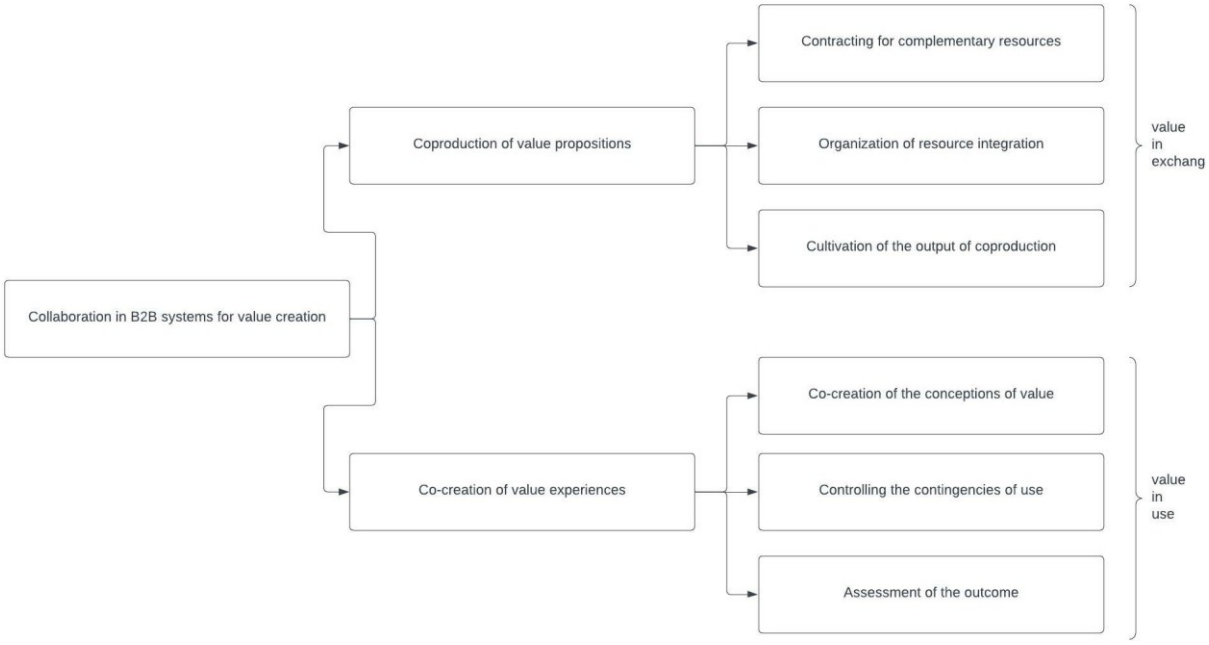

Figure 5 Practices of collaboration in B-to-B systems for value creation (Kohtamäki & Rajala, 2016, p.10)

As the Kohtamäki and Rantala (2016) are suggesting, activities in value creation between the firms can be splitted into the two difering categories: value co-creation and value coproduction. However, as the networks of service providers ar increasing and turning into the more complex systems, the dimensionality and relations between different actors in the system are expanded a lot. Thus, there may then rise cases where the one provider has a comprehensive control of the complex service and its architecture, which are eventually grouped under one comprehensive service ecosystem to deliver more comprehensive service. The approach to managing this is called Service Integration and Management.

2.3.2 Significance of Service Integration and Management Regarding the Study's Subject

Holland (2015) describes Service Integration and Management (SIAM) as a set of practices and framework to manage, govern, co-ordinate, and deliver services provided by multiple vendors which can be both internal and external. Author is claiming that SIAM cannot been see as a process, instead it should be considered as a capability. Holland (2015) is also suggesting that SIAM can elaborate and complement every of part of ITIL activities as the key idea is to provide consistent governance, assurance, and management of combination of multi-vendor services. In the figure 6 is presented high level model of SIAM where the structure of multi-vendor service provider structure is emphasized. Services can be provided by completely internally, joint venture with external partner, or totally outsourced by 3rd party vendor/partner The customer of the service can be both internal and/or external depending of business case and particular service

(Holland, 2015). When considering SIAM in ITIL context it is important to notice that the combined service cannot be produced in better SLA times as the service lying down in the foundation.

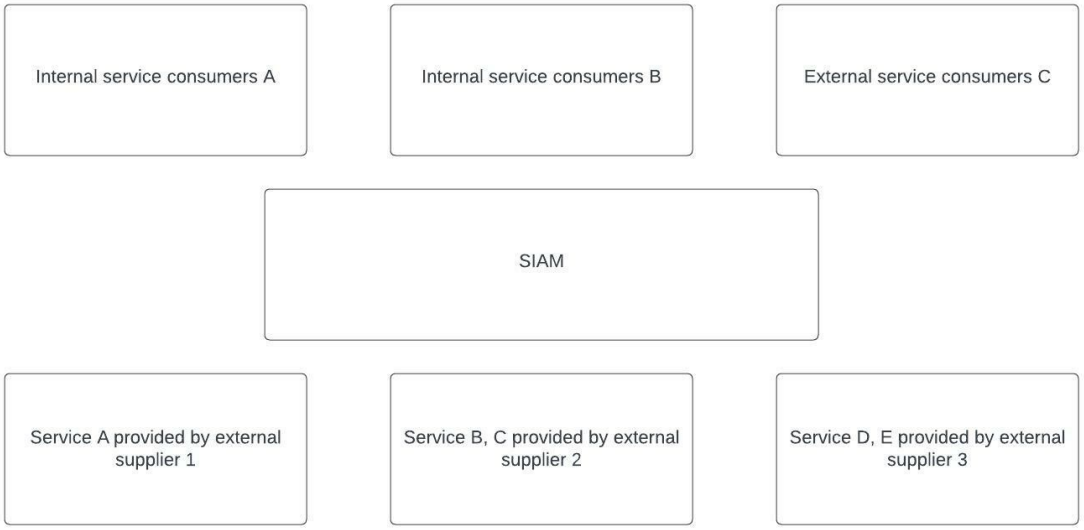

Figure 6 High-level SIAM model (Holland, 2015, p.7)

Holland (2015) presents that SIAM is solving main issues of business that are using siloed service management or siloed supplier management. In these cases, there usually is no consistency or sharing of skills between the departments resulting to decreased potential performance. When considering siloed service management, the processes regarding incidents are not clear in terms of the right contact point, there is no clear ownership of multiservice problems, there is lacking optimization for resources, and differing capability and maturity of same processes. On the instance of siloed supplier management suppliers are generally not governed consistent leading to increased risk in corporate governance. There is also generally dissatisfaction emerging from lack of service integration (how services or service components are working together), and conflicting requirements from the same corporates different departments leading to increased risk of delivery failures. (Holland, 2015)

2.4 Systematic Principles of Value co-creation

Pinho, Beirao and Patricio (2014) are defining systemic approach for the service system to be a set of configurations of resources that are interacting with other systems to eventually co-create value. As the systems are having a need to facilitate value co-creation Meynhardt, Chandler, and Strathoff (2016) are presenting nine systemic principles to clarify the systemic perspective of value co-creation. The authors arguing that a synergetic interplay between the components (such

as customer and service provider) of a service ecosystem should always be defined as value co-creation, which is somewhat similar outcome what other literature presented previously in this study is arguing as well. As with little bit more practical approach, the authors are especially underlying the importance of feedback loops to gain better understanding to facilitate value co-creation in self-organizing environment. By that, there is need to facilitate the foundations for co-creation actions in service systems. Therefore, they presented systematic principles of value co-creation, to extend the understanding of service system and facilitate the foundation for value co-creation in it (Meyanhardt et al., 2016). The principles are presented in the following table 1, where Meyanhardt et al. (2016) have used system theory foundation based on Ebeling and Feistel (1994) findings.

Table 1 Systemic principles of value co-creation (Meyanhardt et al., 2016, pp. 5)

Systemic principle	**Systems theory foundation (based on Ebeling & Feistel, 1994: 40)**	**Relevance for value co-creation in service ecosystems**
Systemic principle 1: Critical distance	Self-organization only occurs if a system is beyond its equilibrium; only under conditions of uncertainty and/or arousal can stable values be challenged	A stable service ecosystem (in equilibrium) has its own propensity to continue on its unique trajectory into the future. Only when a service ecosystem is in disequilibrium can value propositions elicit new logics or orders of engagement. Based on the systemic principle of critical distance, value can be co-created by participating according to the existing logic of the service ecosystem
Systemic principle 2: Stability	System stability depends on the intensity of perturbations; relative stability against small perturbations. In stable environments, a system is relatively reluctant to change.	Established service ecosystems in stable environments adhere to the established logic. Based on the systemic principle of stability, value can be co-created by ensuring continuity of the service ecosystem
Systemic principle 3: Amplification	In transition periods, there may be fluctuations among subsystems within a system; amplifications influence emergences	In service ecosystems, fluctuations can arise from new evaluations, trial-and-error, creative search processes, and new amplified modes. Based on the systemic principle of amplification, value can be co-created by catalyzing emergences and making the optimal emergences

		more salient in the service ecosystem
Systemic principle 4: Internal determination	Emergences heavily depend on existing internal parameters; they can never be solely injected into a system by an external force. Further, it is impossible to predict systemic reaction to external forces because of the internal stability	Service ecosystems have a stable logic that largely determines systemic emergences. Owing to this, the effects of external efforts to inject new parameters to an existing service ecosystem are generally unpredictable. Based on the systemic principle of internal determination, value can be co-created by allowing for emergences.
Systemic principle 5: Nonlinearity and feedback	Self-organization requires nonlinear dynamics, basically caused by feedback loops	Service ecosystems facilitate (social) psychological internalization (i.e. the establishment of new subjective evaluations and preferences). Based on the systemic principle of nonlinearity and feedback, value can be co-created by seeking and understanding nonlinear dynamics in a service ecosystem.
Systemic principle 6: Phase transitions	Processes of self-organization are analogous to phase transitions in equilibrium. A change in values (individually and collectively) is experienced as a transition from one stable state to another stable state	Service ecosystems are dynamic, continuous, and ever-changing. Based on the systemic principle of phase transitions, value can be co-created by enhancing changes in a service ecosystem
Systemic principle 7: Symmetry-breaking	New orders are realized only after an emergence has become established as an order parameter	While emergences are at first unpredictable, over time, they become more established and can catalyze new order parameters for service systems. Based on the systemic principle of symmetry-breaking, value can be co-created by emphasizing a new order or logic in a service ecosystem.
Systemic principle 8: Limited predictability	The result of irregular (chaotic) processes is not predictable beyond the short term	The individual or social process of changing values cannot be predicted. Based on the systemic principle of limited predictability, value can be co-created by expecting changes in the long-term viability of a service ecosystem

Systemic principle 9: Historical dependence	A system can only be understood on the basis of insight into its developmental history.	To understand a certain system of subjective evaluations, one needs to know its history. A single connection or link between actors can seldom be understood by itself. Based on the systemic principle of historical dependence, value can be co-created by viewing the service ecosystem holistically and historically.

Meyanhardt et al. (2016) presented framework seeks to deepen dynamic mechanisms of service ecosystem. Authors are claiming that the goal is to clarify value co-creations complexity from service ecosystems perspective. However, Meyanhardt et al. (2016) are pointing out that the systems are always unique, the context for nine principles are also changing regarding integration between provider and customer. Also, the attributes and factors affecting externally to service system can change during service systems lifetime to affect the principles. These systemic principles can be understood as different phases of the service facilitation, which are or is needed to host co-creational activities in the service ecosystem.

3 ITIL 4

In this chapter it is presented and described concept of Information Technology Infrastructure Library, which is a common framework to guide Information Technology and Service Management process. According to Iden and Eikebrokk (2013) Information Technology Service Management (ITSM) is an approach to IT service operations where IT service and its components are emphasized, and where the IT is managed as a service function. ITIL on the other hand, is set of best-defined practices to arrange IT processes, which the organization may adopt in the organization to achieve IT service management (Iden & Eidebrokk, 2013). Generally, ITSM can considered to be a larger concept for managing information technology services, and ITIL can considered to be an approach to perform this in the practice. On this chapter, ITIL 4 is first presented from holistic perspective, proceeding to more specific description of main factors of ITIL 4 service system. Later the core of the new concept Service Value System, and especially the key internal framework to facilitate the value streams, service value chain, is analysed and described deeper. At the end of this chapter there is some background regarding the measurement of processes in older ITIL framework as the ITIL 4 did not introduce new methods for it.

3.1 General background

Since the foundation of ITIL in 1989 by United Kingdom's Central Computer and Telecommunications Agency (CCTA) to match the need of standardized IT government wide IT practices, the ITIL has become the major ITSM framework which is the world's most widely accepted ITSM approach (Dabade, 2012; Iden & Eikebrokk, 2013; Obwegeser, Nielsen, & Spandet, 2019). 17 years later since its publishment, updated version ITIL v2 was published to be evolved one year after to newer ITIL v3 -framework in 2007, which presented concept of Service lifecycle (Dabade, 2012). On 2019 new ITIL 4 was released to add perspective of value co-creation in service relationship through Service Value System (Axelos, 2019).

In ITIL 4, service value perspective is aimed especially for the key stakeholders. As the older ITIL v3 framework offered practices and applications to be taken into the actual use in organizations that are offering IT services, ITIL 4 emphasizes and expands the perspective towards ITSM by adding concept of value to be taken into the account in its processes. ITIL 4 does not override the methodological approach or practices of older ITIL v3 -framework rather evolves it with new perspectives. The additional key perspectives and components of ITIL 4 to evolve older framework presented by Axelos (2019) are Service Value System and four-dimensional service management model.

3.2 Service Value System

In the updated ITIL 4 framework Axelos foundation presented ITIL Service Value System later referred as SVS. SVS is aimed to visualize and describe how organizations' activities and different assemblies are related to facilitate creation of value in Information Technology services. Components and processes can potentially be combined together in various ways. By Axelos (2019) that emerges need for integrations and coordination activities in organizations to have consistency among IT services processes. Thus, the SVS can be seen as a framework of IT-service facilitation, to describe the service ecosystem. Service is answering always for a demand, which eventually transfers into the value through usage. SVS is hosting all the necessary processes for example to design, build, and deliver the current service. Meanwhile related factors such as guiding principles, governance, selected practices, and continual improvement is affecting to the way how service value chain behaves under SVS. SVS is constructed of five core components which are described further on list below. The structure of ITIL's SVS and its components relation in Service value systems field are shown in figure 7.

- The ITIL service value chain
    - Operating model including processes and activities in organization that are involved in product or service delivering. Service value chain facilitates value realization of product and services in Service Value System.
    - Activities in service value chain are connected to each other as activities outputs are working as triggers to further one eventually leading to value creation.
- The ITIL practices
    - Resources focused on work and goal reaching activities.
    - Four dimensions of service management are serving as groups for practices. In Service Value System practices are under general management, service management and technical management.
    - Practice is a set of organizational resource for performing work or achieving an objective.
- The ITIL guiding principles

  - Change free recommendations to guide and adjust work done in organization in different circumstances.
  - Guiding principles are working as a core message of ITIL -framework. They also support actions and decisions done at all levels.
  - Guiding principles presented in ITIL are shared among other major Information Technology related frameworks as Agile, DevOps, Lean and COBIT.
- Governance
  - Controlling and directing ways in organization. Realized through directing, evaluating, and monitoring.
  - SVS and the alignment of service value chain and organizations activates must be oversighted. Additionally, Axelos (2019) points out need of maintaining alignment between objectives and principles.
- Continual improvement
  - Process for incremental activity which tries continuously ensure that stakeholders expectations are met.
  - Continual improvement is existing in all levels of organization and in SVS. Also services and products reviewed under improvement activities to achieve better end product.
  - Continual Improvement can be pursued by ITIL continual improvement model.

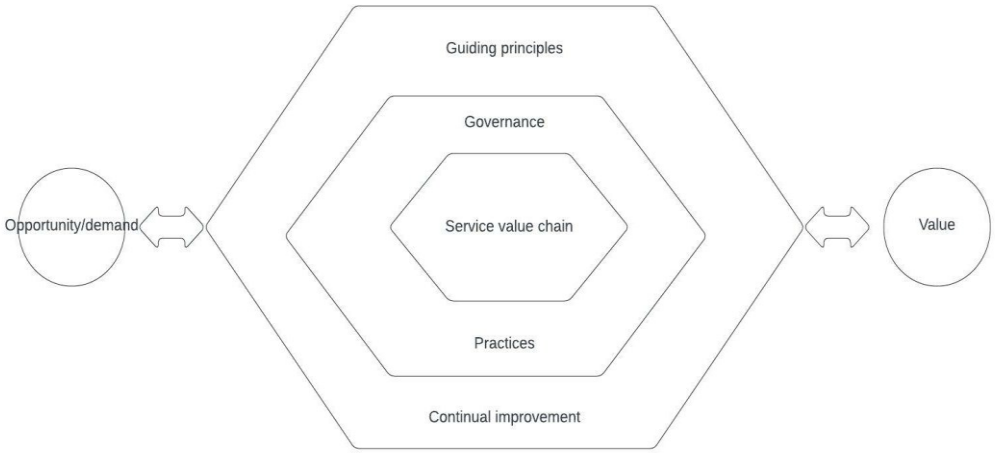

Figure 7 Service Value System. (Axelos, 2019, p.55)

Axelos (2019) claims that service value system's purpose is to ensure organizational capability to continually co-create value with stakeholders through products and services. External and internal opportunity but also demand is fed

into service value system and is eventually converted to created value for organizations stakeholders, like customers. SVS aims to describe the system of how components and activities are related and working together to enable the value creation. ITIL SVS discourages forming of siloes rather it enables flexibility in organisation and its processes. SVS practices and activities done in the service value chain do not construct inflexible structures rather they can be used to generate multiple value streams for different scenarios to gain flexibility in organisation. But one should notice that ITIL does not offer strictly predefined service value streams, as the organizations should define their own value streams in. Simplified, organizations are doing market and opportunity research by themselves to find potential new offerings that they can bring available, is the end user then internal or external stakeholder. ITIL tries to facilitate this approach by offering framework to satisfy the core components and functionalities required to offer the baseline. The framework focuses especially to organization wide continual improvement, which is aimed to eventually lead to organizations to utilize ITIL guiding principles. (Axelos, 2019)

By that, SVS supports multiple different approaches like for example Agile methods, DevOps, or Lean. As the organization should be successful in terms of work done in organization, the organizational agility to support changes should be obtained. Gehrmann (2012) is also sharing a view of general IT management frameworks capability to be combined together. As for the goals IT management tries to achieve effectiveness or competitive advantage, but in generally it can be difficult. Thus, it is claimed that using combination of these major frameworks can be greatly effective in terms of achieving set business goals (Gehrmann, 2012). ITIL Service value system enables organizations to achieve organizational agility and resilience, as well as the adoption of a strong, unified direction that is focused on value and understood by all employees. It also allows for continuous improvement throughout the company to match the ITIL guiding principles (Axelos, 2019).

3.2.1 Guiding principles

In ITIL 4 the guiding principles are recommendations to guide organization in different circumstances. Guiding principles are generic across the holistic field of ITIL. Axelos (2019) is presenting seven guiding principles which can be found on the table 2. Core message of ITIL and service management are embodied by these guiding principles, as the guidance can be adapted to organization specific needs especially to drive organization wide continual improvement. Axelos (2019) claims guiding principles to be reflecting many other major frameworks to allow integration of multiple methods in service management and its processes.

Table 2 Overview of the guiding principles (Axelos, 2019, pp. 58-59)

Guiding principle	Description

Focus on value	Everything that the organization does needs to map, directly or indirectly, to value for the stakeholders. The focus on value principle encompasses many perspectives, including the experience of customers and users.
Start where you are	Do not start from scratch and build something new without considering what is already available to be leveraged. There is likely to be a great deal in the current services, processes, programmes, project s, and people that can be used to create the desired outcome. The current state should be investigated and observed directly to make sure it is fully understood.
Progress iteratively with feedback	Do not attempt to do everything at once. Even huge initiatives must be accomplished iteratively. By organizing work into smaller, manageable sections that can be executed and completed in a timely manner, it is easier to maintain a sharper focus on each effort. Using feedback before, throughout, and after each iteration will ensure that actions are focused and appropriate, even if circumstances change.
Collaborate and promote visibility	Working together across boundaries produces results that have greater buy-in, more relevance to objectives, and increased likelihood of long-term success. Achieving objectives requires information, understanding, and trust. Work and consequences should be made visible, hidden agendas avoided, and information shared to the greatest degree possible
Think and work holistically	No service, or element used to provide a service, stands alone. The outcomes achieved by the service provider and service consumer will suffer unless the organization works on the service as a whole, not just on its parts. Results are delivered to internal and external customers through the effective and efficient management and dynamic integration of information, technology, organization, people, practices, partners, and agreements, which should all be coordinated to provide a defined value.
Keep it simple and practical	If a process, service, action or metric fails to provide value or produce a useful outcome, eliminate it. In a process or procedure, use the minimum number of steps necessary to accomplish the objective(s). Always use outcome-based thinking to produce practical solutions that deliver results.
Optimize and automate	Resources of all types, particularly HR, should be used to their best effect. Eliminate anything that is truly wasteful and use technology to achieve whatever it is capable of. Human intervention should only happen where it really contributes value.

Axelos (2019) presents that all guiding principles should be considered in different circumstances. However, every principle's relevance and its appliance should be evaluated as all principles are not playing an important role in every instance, but their appropriation should be evaluated.

3.2.2 Continual improvement

The continual improvement is applied to the entire ITIL Service Value System, but also to the organizations other services, components, and relationships in all levels from operational to strategic (Axelos, 2019). ITIL SVS facilitates and supports continual improvement by offering 1) ITIL continual improvement model to implement improvements, 2) improved service value chain activity guidelines to embed continual improvement inside the value chain activities, and 3) continual improvement practices to support organizations in improvement exertions.

The continual improvement model presented in figure 8, increases Information Technology Service Management improvement activity successfulness by also adding focus towards value creation, and aligns improvement actions with organizations strategy (Axelos, 2019). Improvement actions can be iterative, and the continual improvement model supports incrementally achievable individual targets. The stream looks for to guarantee that improvements are connected to the organization's objectives and are appropriately prioritized, and that enhancement activities deliver maintainable results. Axelos (2019) is however highlighting the use of logic in continual improvement model, as all steps are not needed to be done in linear order rather re-evaluate and returning to previous phases of the flow are eligible approaches also in improvement efforts.

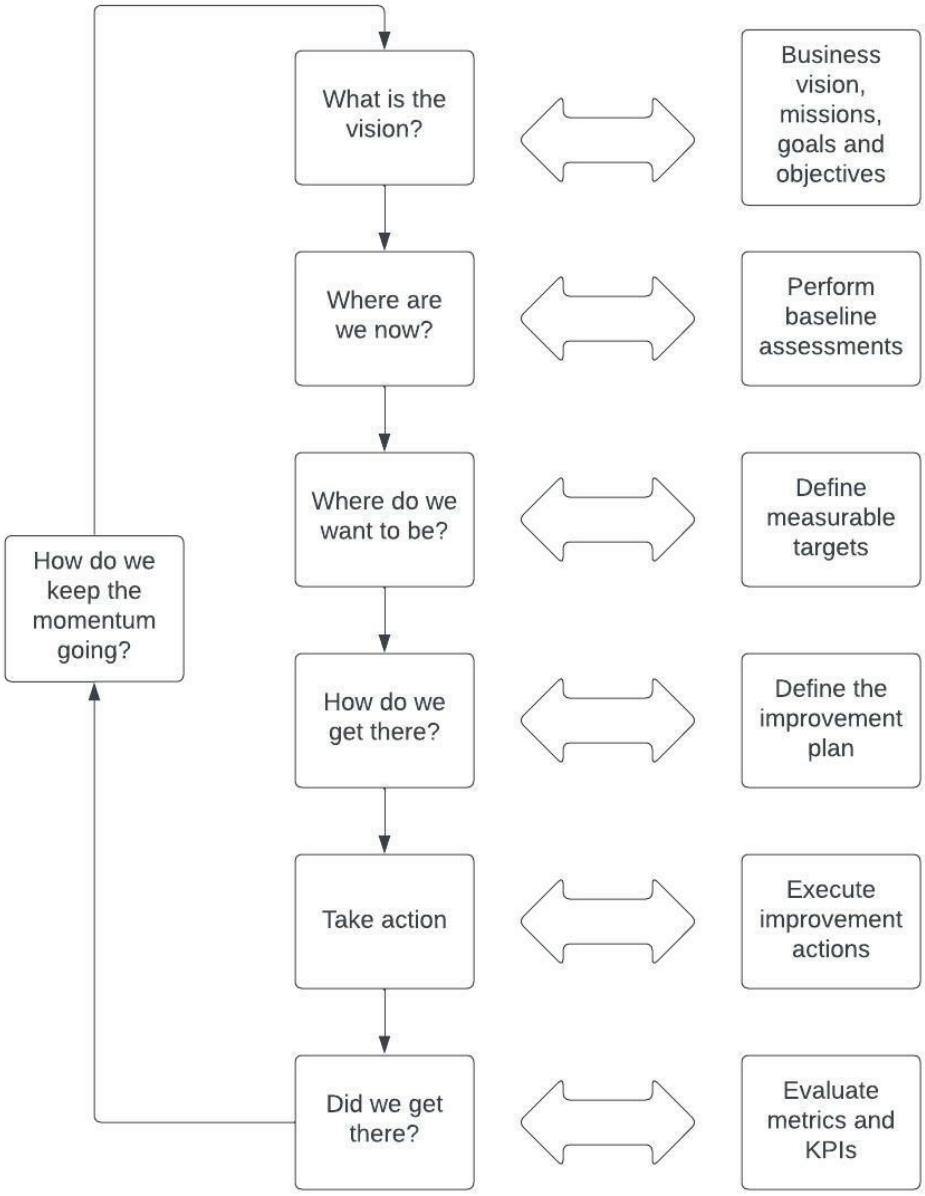

Figure 8 The Continual Improvement Model (Axelos, 2019, p.93)

According to Axelos (2019) applying ITIL guiding principles can significantly benefit improvement actions. In improvements planning, Axelos (2019) suggest giving the most focus to service value chains weakest link as by theory of constraints the weakest links determines output of the system. As the other major frameworks are holding continual improvement in their processes there should not be major conflicts between the frameworks what comes improving existing situation. On the other hand, Axelos (2019) even suggest that what comes service management, using other frameworks to discover and solve issues can be hugely beneficial. For instance, Lean practices can be used to identify the weakest link in

service value chain. If the information systems development might lie down as a weakest link, agile methods could be applied to increase the speed and quality of system development. Eventually DevOps technics could be used in improving deployment parts of the service system.

3.3 Dimensions of Service Management

Axelos (2019) is suggesting, to ensure required approach towards service management, each component of Service Value System is needed to be considered from four different dimensions of service management. Service Value System can therefore be ensured to be balanced and effective if appropriate focus is given to all four dimensions. As the objective in organizations is to give value to its stakeholders, the value creation is achieved by consumption of services (Axelos, 2019). ITIL SVS facilitates the framework for service value creation as it presents relations between different processes. However, Axelos (2019) claims that four dimensions of service management are having impact to all the elements in SVS. The consideration should be done especially when desired outcomes are tried to be achieved as effectively as possible: it is also important to notice that considering only one dimension is insufficient, thus all four dimensions are requiring consideration to achieve success in facilitating value through services (Axelos, 2019).

In ITIL 4, there are four dimensions of service management which all are influenced outside of Service Value System. These external factors cannot be generally controlled by SVS. Axelos (2019) claims that failing in consideration of all dimensions can lead service to become unavailable, undeliverable, inefficient, or low quality. Four dimensions of service management and key factors affecting to them are presented in Figure 9. It is noteworthy to understand that factors can affect together to dimensions. Dimensions are also adaptive, and they may overlap with one another.

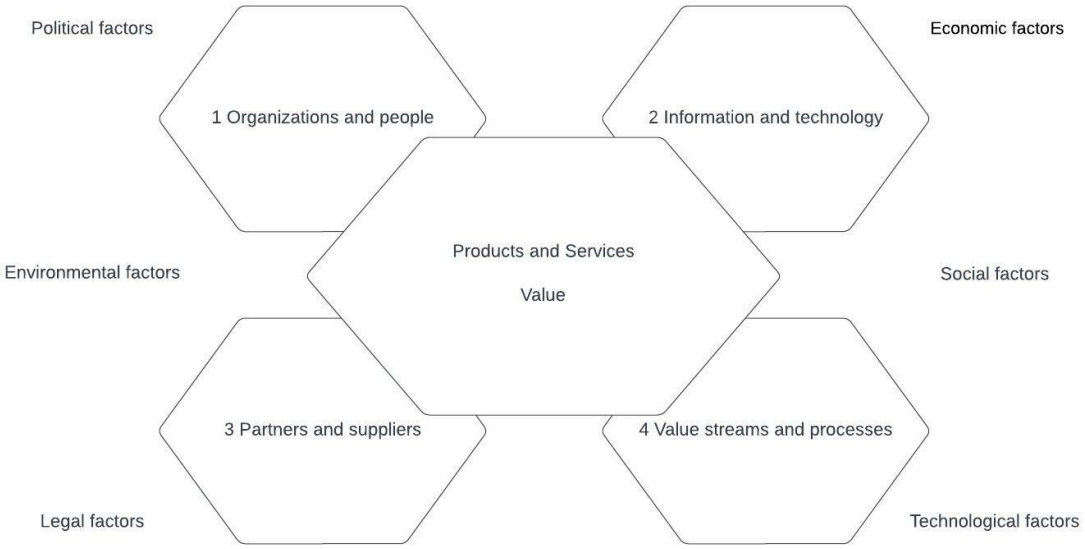

Figure 9 Four dimensions of Service Management. Axelos (2019, p. 39)

The first of four dimensions is Organizations and People. According to Axelos (2019) an organization's effectiveness cannot be guaranteed just by a formally constituted structure or system of authority. The company also requires a culture that supports its goals, as well as the appropriate level of capability and expertise among its employees. Therefore, the goal is to achieve assurance in management and organizational structures where roles, duties, and communication systems are properly aligned with strategy and operating model. For example, Axelos (2019) presents that promoting culture of trust and transparency can lead to encouragement in raising and escalating issues which can be solved before issues are impacting customers or service production. People are also playing key role in this dimension, as they are enabling value and performing process towards that. Not only should the skills and capabilities be considered, but also management and leadership styles, as well as abilities in communication and collaborating skills. It is also important to notice that people need to understand their specialization and roles in organization as well as interfaces to other specializations to assure valid collaboration. Ahmad, Amer, Qutaifan, and Alhiali (2013) are pointing also out the importance of skilful people, as a critical success factor of ITIL implementation. Understanding of critical and non-critical processes is also important as organizations should be able to distinguish them (Ahmad et al., 2013).

The second dimension is information and technology which can influence both to service management and more directly to services being managed. According to Axelos (2019), knowledge and information can be seen critical in management of services where it includes components of Service Value System together. Information technology also supports service management highly. Technology offers increased performance utilizing use of information systems, but also use of AI or machine learning algorithms in optimization. Especially in IT services, this dimension also takes part in information management to use it in

provision of service, and in most cases eventually enabling the service. In terms of differentiation in markets, being an early adopter of new technology can lead to favourable market positions. Information also plays a key role, what comes to enabling value, as multiple service systems are built around facilitation of information sharing. Information is in most cases the key output of IT service when enabled to business users. Information exchange architecture of services must be also understood to enable management in services and processes between service components. Availability, reliability, accessibility, accuracy, and relevance of information must be taken into the account when considering service management though this dimension. Use of technology also raises constraints and challenges in service production what comes for example towards compatibility of service components in service value chain. Axelos (2019) points out it is noteworthy to understand cloud computing benefits and changes it has brought to field of information technology service management. Cloud computing enables rapid deployment, service-delivery, scaling of service and many other features, but also new challenges what comes towards security and service configuration.

The third dimension is partners and suppliers, which covers service providers dependency of another organizations. Relationships between organizations can cover design, development, deployment, delivery, support, and continuous improvement activities among services. Integrations can be varying between organizations as some separated responsibilities can be agreed by formal contracts, but very flexible partnership models can also be achieved where companies are sharing mutual targets and are trying to achieve them by together. Axelos (2019) are presenting that cooperation can for instance be related to goods supplying, service delivery, or to service partnership where value is co-created with service provider and customer. Regarding dimension of partners and suppliers, Axelos (2019) raised meaningfulness of service integrator in terms to achieve coordinated service relationship.

The fourth dimension of service management is value streams and processes. According to Axelos (2019), perspective of value streams and processes can be applied both to the Service Value System and to more specific dimensions, like products and services. In both instances, this dimension defines procedures to obtain the agreed goal. This can concern for example activities, cooperation, and overall organization processes in value creation enablement. Axelos (2019) presents that ITIL and especially its service value chain is giving organizations a good tool kit and framework to manage effective operating model to provide services. Axelos (2019) is defining value stream as a combination of activities done in service value chain, and according to author, predefined value streams should be opened up for continuous improvement analysis and eventually for change management processes. Processes in ITIL by Axelos (2019), are set of activities that are transforming inputs to outputs. It is important to discover process and methods that are generating barriers as also identify non-value-adding activities which can be considered as a waste. Eventually the wasteful activities could be terminated from value stream to increase profitability.

Axelos (2019) is presenting statement regarding external factors, as service providers are not operating in isolation rather in complex environment. Therefore, dynamic external factors are affecting to them and defining constraints for service providers process and work. These constraining factors could be from PESTLE -framework, which is an acronym of political, economic, social, technological, legal and environmental factors (Axelos, 2019). In practical example there could be mentioned GDPR which has changed how organizations must acquire, process, access, and manage customer data, as well as how they collaborate with partners and suppliers in terms of data processing. As they evolve, all four dimensions, as well as the external factors that influence them, should be addressed, taking into account evolving trends and possibilities in the field. It's vital to evaluate an organization's SVS from all four dimensions, because failing to appropriately address or account for one dimension, or an external issue, might result in sub-optimal products and services (Axelos, 2019). Axelos (2019) is claiming as all four dimensions are advocating approach towards service management, the focus should be found between the dimensions to balance them.

3.4 Management practices

According to ITIL 4 presented by Axelos (2019), the ITIL Service Value System is consisting of 14 general management practices, 17 service management practices and three technical management practices. The four dimensions of service management should be applied for all of these practices. General management practices are adopted and can be adapted to general business management operations. Service management practices are focused especially on service management and information technology service management business fields. Technical management practices are adapted from field of technology management, but their focus has been adjusted from technology solutions to IT services. ITIL management practices are presented in the following table 3.

Table 3 ITIL management practices (Axelos, 2019, Table 5., p.105-106)

General management practices	**Service management practices**	**Technical management practices**
Architecture management	Availability management	Deployment management
Continual improvement	Business analysis	Infrastructure and platform management
Information security management	Capacity and performance management	Software development and management
Knowledge management	Change control	
Measurement and reporting	Incident management	
Organizational change management	IT asset management	
Portfolio management	Monitoring and event management	

Project management	Problem management
Relationship management	Release management
Risk management	Service catalogue management
Service financial management	Service configuration management
Strategy management	Service continuity management
Supplier management	Service design
Workforce and talent management	Service desk
	Service level management
	Service request management
	Service validation and testing

Axelos (2019) claims that in the modern world there is need for high-velocity delivery of services as in market differentiation speed is playing a role as key success factor. This leads to situation where IT services are ned to be provided in short period of time. Service delivery with a great speed influences service providers all management practices as it can be considered as necessity to improve management practices to match the demand. Axelos (2019) presents challenges to be tackled with the usage of new IT management practices, like DevOps for example, but to organizations which are aiming to improve service providing faster than others should also consider agile methods also.

3.5 Service-Value-Chain

Service value chain plays central role in Service Value System as it facilitates services' value creation. In the ITIL, service value chain is constructed from six main activities that are leading towards value. Service value chain and its component relations are shown in figure 10.

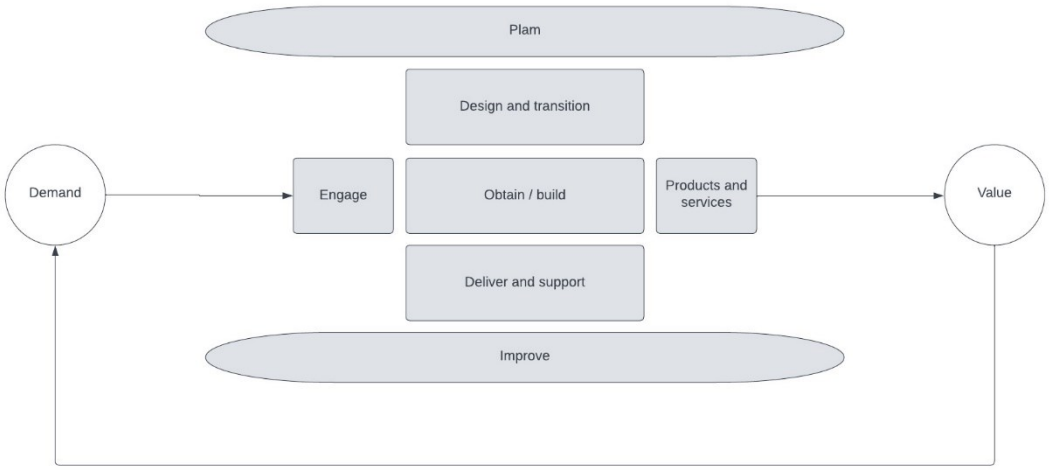

Figure 10 Service Value Chain (Axelos, 2019, p.81)

Service Value Chain presented by Axelos (2019) is constructed from six value chain activities which are presenting marks organization and its processes are taking in value creation. As the activities are interconnected, all activities are providing outputs for further activities. Activities in service value chain are using combinations of ITIL practices, internal and external resources, and required competencies to answer demands set for them. As the organizations in modern world must be open for changes in their business environment and ecosystem, Axelos (2019) is proposing that all activities must be open for changes and iterative improvements to gain agile information technology service management. Axelos (2019) is claiming that successfully applied Agile methods are enabling responsiveness for stakeholder needs.

First of Service Value chains activities is Plan where the purpose is to ensure understanding of all dimensions of service management in organization. This can be achieved by giving right inputs as instructions and policies from governing side of organization, but also gaining inputs from another activities as for example demands and knowledge from *engage* as also internal information from changed service from *design and transition* or from *obtain/built.* Also reports and information from *improve* can be used to plan specific or more holistic changes for single activity or more comprehensive value streams of service value chain. Main outputs from Plan activity are operational plans, portfolio decisions, architectures and policies but also agreement requirements.

The second activity in Service Value chain is Improve which is aimed to ensure continuous improvement of products or services, but also activities through all service value chain. Key inputs are various performance information and knowledge and information from direct and third-party stakeholders. Outputs of Improve are designed toward improving all activities in Service value chain, but also provide information to support another activities.

The third activity is Engage, where stakeholder needs, and continual engagement are provided. Key inputs are service portfolio, demand from internal and external stakeholders, requests, feedback from another activities and stakeholders, and various information from different activities to drive better cooperation through the service lifecycle. Key outputs are working as consolidation of demands and opportunities towards plan, Service requirements and tasks towards design and delivery, but also support knowledge from third-party components for all value chains activities.

The fourth activity is seen as Design and transition where the purpose is to ensure stakeholder expectations what comes to products and services quality, costs, and delivery time. Key inputs are related to portfolio composition, service requirements, and information related to stakeholder needs, performance, and knowledge from partners. Purpose is to create triggers for *obtain/build to* generate a deliverable product which can eventually be converted to value. However, design and transition activity are also providing much information for another components of service value chain. For example, contract requirements are provided for *engage*, knowledge from changed product for other activities, and improvement triggers like performance information for *improve*.

The fifth activity is Obtain and build where to purpose is make sure that components of service are aligned with agreed specifications. Inputs are related to attributes, specifications, and agreements to answer questions what/how/when must provide. Outputs of this activity are mainly service components to be delivered and supported, but also information and knowledge sharing to enable improvement in all value chains activities.

The sixth and the last activity is delivered and support where the final product or service is transferred to the user. The need is to match stakeholder expectations and agreements. Key inputs are related to the improvements and service composition. Output on the other hand is considering deliverable service, but also improvement opportunities, various requirements, and information for other activities in service value chain. Together these activities are forming a core of ITIL service value system, where the service can be transitioned for the end user and eventually realized to value.

3.6 Measurement

Generally, in the business, it is important to monitor the made activities and current processes. The measurement of different measurable units to be presented as metrics or Key Performance Indicators (KPIs) are opening room to monitor the

actions performed. When the current is known, it is possible to perform necessary adjustments to fulfil required strategical or operational goals. Metrics can be open ended to monitor wider outcome such as sales or revenue, but they can also be aligned with the performed low level operations such as actions done in the Service Desks.

In the field of different businesses Lindberg, Tan, Yan, and Starfelt (2015, p. 1) are suggesting that there is existing large amount of equipment and processes which are challenging to control and maintain when trying to achieve their highest performance. Lindberg et al. (2015) are suggesting using Key Performance Indicators and different metrics to monitor and measure processes' performance and their progress to increase the performance of business operations to gain advantage. Agutter and Crawley (2013, p.344) are suggesting KPIs in ITIL context to be something that helps to manage an IT service, process, plan, project, or other activity – which is aiming either to increase the performance or effectiveness of the service. However, depending on the particular business field, founding the appropriate metrics can be challenging, and their validation can be considered as a challenging task (Lindberg et al., 2015). If the correct metrics and KPIs are implemented appropriately there may be positive outcomes for the business operations. Morgan and Reko (2006) are for example claiming that the organizations which are monitoring for example customer feedback are able to predict organization's business performance and perform generally better than the ones who do not.

In the older ITIL's version, Agutter and Crawley (2013) are claiming various metrics are existing according to the framework. These can be divided generally under different management perspectives such as technical or application management but are generally measuring various range of different business operations (Agutter & Crawley, 2013). They can be established to ground level of the service operations, but also management and top level metrics are existing which can help the company to identify pitfalls of operations.

Agutter and Crawley (2013) are dividing the metrics under five different categories. The first is measurement of agreed outputs such as transactions. The second is measurement of processes such as response times or incident resolutions times. The third is measurement of technology performance such as hardware utilization by used processors or memory reserve. The fourth is measurement of maintenance activities such as downtimes of the service. The fifth is measurement of training and skills such as measuring the existing competencies of employees. (Agutter & Crawley, 2013, p.321)

When these metrics are evaluated, they are associated heavily with the idea of Continual Service Improvement. Generally, when the activities are improved, the metrics to start the improvement process may considered to be related either to offer service, process, or technology measurement. These dimensions serve as a foundation for identified improvement. (Agutter & Crawley, 2013) When for example ticket numbers are increasing and resolution times are prolonged while Service Desk is working as effectively as before, the change may be related to improve the process to handle the tickets faster for example by adopting

automation. On the other hand if there is a large volume increase in processor usage the improvement may then be related to the technical dimension where processor is updated to faster one, clustering is enabled, or there is allocated more memory to compute unit.

4 SYNTHESIS OF LITERATURE

As Cronholm, Göbel, and Åkesson (2020) have claimed, the ITIL is mostly compliance with the service dominant logic, thus compliance also with the value creation paradigm in service dominant environment. However, the previous authors are stating there is some shortcomings in ITIL that are not matching the service dominant logic, as the definition of value is missing, there is no emphasizing of value co-creation, and language is matching conservative goods-dominant logic (Cronholm et al., 2020). However, as their study was started before the new ITIL 4 framework was published in the 2019, the found shortcomings can be somehow ignored, as Axelos (2019) is defining the value, raised value co-creation as the central factor of service delivery, and changed the language to more appropriate in terms of S-D logic.

Iden and Eikebrokk (2014) are arguing that ITIL is popular framework in IT governance, but the there has not been conducted much academic research about ITIL. Especially academic research related to ITIL 4 framework has not been published much. Thus, these can be explained by the newness of the framework. Cronholm et al. (2020) are also claiming that there is not much empirical grounding of theories in IT sector generally, which is underlying the need to investigation of practice even more. Cronholm, Göbel, and Åkesson (2020) are proposing a need to study application of S-D logic in real IT-projects, especially having a need to add prescriptive knowledge to the IT sector.

> A study of this nature should not take the FPs in S-D logic for granted. Rather, it should investigate whether prescriptive knowledge could be added to make S-D logic more available to the IT-sector. (Cronholm, Göbel, and Åkesson, 2020, p. 95)

Obwegeser, Nielsen, and Spandet (2019) are aligning with the previous, as they argue there is lack of guidance of implementation of ITIL among both practice and research. Additionally, Vargo, Maglia and Akaka (2008) are claiming that in the context of value co-creation exploration there is lying questions which need to be answered to generate better understanding in various research fields. As for the questions, Vargo et al (2008) are raising the following:

> What exactly are the processes involved in value co-creation? How can we measure co-created value and value-in-use? How does information technology influence the ways in which value can be created effectively? What approaches do we need to understand the sociotechnical context of value creation? What are the research methods appropriate for understanding value as an emergent quality? (Vargo et al., 2008, p. 151)

In addition, Kohtamäki and Rantala (2016) are still arguing the same, as they are claiming there is room to apply theoretical perspective to study practices utilizing the value co-creation and coproduction in the field. Generally, these questions can be seen as practical ones: How the value is really generated in use? To emphasize the previous, there is a research gap what comes to practices and actions of value (co-)creation on the field of IT services.

In terms of the actions related to ITIL 4 continual improvement model emerging from value co-creation activities, the customers are needed to let be participated in different components (and by those activities done inside of the component) of service value chain. As claimed by Grönroos and Voima (2013) the corporate facilitating the value proposition of the service is controlling the boundaries how the customer is given the ability to participate into the value co-creation activities. Therefore, the organization facilitating the service is having a full control to determine how the service is facilitated in terms of actions the customer can perform, or the customer can interact with.

Thus, in terms of ITIL 4 framework, the service is delivered via the activities taken place in the service value chain. If the service provider lets the customer to participate in the process, then the provider facilitates the place for the value co-creation. Service Value Chain and its core activities can be opened for the customer participation leading to engagement through whole service value chain via the relations of activities presented by Axelos (2019). Therefore, co-creation activities which have taken place in one activity can be emitted to another activities of service value chain resulting influence the behaviour of other activities as well.

When considering also the appliance of service integration in terms of SIAM model, the value chain activities of one service can potentially be influenced by value co-creation process which have took a place in another service's value chain. As a practical example feedback received from one customer can be taken into the account and it can influence way of arranging service components not only in the specific service, but also in the services that are sharing the same processes or the component (for example a centralized service desk), but also another services governed and delivered by the same integrated governance.

As the Axelos (2019) is presenting that ITIL framework needs to be governed, it does not define the specific actions or methods, rather opens up the alignment capability of ITIL and another frameworks of ITSM as a supplementary approach. Holland (2015) admits ITIL to be able to be governed as with SIAM model, as they are complementary methods with each other, as SIAM can be seen as an adaption of ITIL where multivendor services as managed.

In this study it is aimed to discover practical manners in the business field to layout foundations for further study to validate the potentially well

performing practices empirically. As then, there is considered overall methods what organizations are taking to facilitate their IT service management, but we are not laying down restrictions to specific IT-services as long as they are operated under ITIL framework. As there is relatively low number of practical studies considering usage of ITIL 4 framework the first research question is aimed to answer the need to find out practical methods how co-creation is facilitated.

1. What kind of actions and processes organizations are taking to facilitate the value co-creation in ITIL 4 context?

According to the literature, value can be co-created jointly when there are existing interactions between the service provider and the customers, but especially the importance of feedback loops was risen up (Meyanhardt et al., 2016). Therefore, with the second research question we want to answer a demand of actions that are taken to gain understanding from the customer to boost up continual improvement. As the feedback loop was considered to be important process to gain customer knowledge, it is researched in this study what methods and applications organizations are taking to facilitate these.

2. What kind of actions are taken to facilitate the feedback loop and interactions with customers to gain insights?

In the ITIL, and generally in the business as well, it is important to measure the existence. Measuring may lead to further development of the processes to increase the performance on ITSM processes what is one of core agendas in ITIL 4 in terms of continuous improvement. In addition, in the different business fields there is lacking appropriate guidelines to establish the correct metrics (Lindberg et al., 2015), so identifying the current ones may open room for their validation. As the measurement in ITIL is generally decent holistic and relates to the different processes (Aguetter & Crawley, 2013), we are adjusting the scope of the third research question to cover only the measurement practices to value co-creation activities to gain knowledge how organisations are monitoring co-creation, which was also demanded by previous literature (Vargo et al., 2008). As presented by Aguetter and Crawley (2013) that in the older ITIL framework there did not exist any value measuring metrics, and Axelos (2019) did not introduce any in the updated ITIL 4 framework, there can be argued to exist underlying need to investigate what metrics and KPIs are established in the actual practice on the field to monitor the value creation and realization.

3. How is the successfulness of value co-creation and value delivery measured? What are the key metrics?

In this chapter we brought perspectives and knowledge from previous literature together to make some practical implications to layout foundation for the research topics. We defined research questions based on the previous literature and

studies, and in the following chapters we are conducting study based on these research questions.

5 RESEARCH METHOD

In this chapter selected research method, conduct of the study, and method of analysis is described further. This study was performed by using qualitative research methods and particularly semi-structured interview. The study was conducted by interviewing experienced people working closely with the ITIL 4 topics in IT service management. According to Myers and Newman (2007) the qualitative interview is an excellent way to gather a data, and it is the most common as well as one of the most important data gathering method applied in qualitative research. Generally, Myers and Newman (2007) are splitting qualitative interview under three main types, yet they are claiming based on Fontanas and Freys (2000) findings that more various types can exist. However, the main three types are generally structured interview (strictly scripted interview such as a survey), unstructured or semi-structured interview (potentially some questions prepared, room for further questions and improvisations to gain better knowledge about subject), and group interview (structured or unstructured where multiple people are interviewed by same time). Generally, in the field of Information Systems the semi-structured interview is the most used one (Myers & Newman, 2007). For this study it was selected semi-structured interview as main research method.

5.1 Semi-structured interview

According to Baumbusch (2010) when in the unstructured interview there generally is the topic to discuss rather no set of questions, on semi-structured interview the interview is forehand scripted to be conducted by the member of research group, and the interviewer is needed to make sure all questions will be covered through interview process (Myers & Newman, 2007). However, on semi-structured interview there is also place and room for improvisation (Myers & Newman, 2007), thus the questions can be relatively open-ended and additional more focused questions may be asked to gain more in-depth responses

(Baumbusch, 2010). According to Myers and Avison (2002) qualitative research methods were developed to study social and cultural phenomenon, thus in this study we will focus phenomenon where social interactions are taking place, which is building support towards selected research method. Regarding semi-structured interview, Galletta (2013) is suggesting that the one key purpose in semi-structured interviews is to gain widespread clarification and understanding of researched phenomena, which was also tried to discover during this study.

As in this study there are discovered ways to arrange interactions between two or more actors in service orientated environment, semi-structured interview supports the process to gain better understanding of topics and practices used on the field. As there are also asked subjective perspectives and feelings from the interviewees, semi-structured interview supports mirroring and better social encountering by minimizing dissonance, and potentially makes the interviewee feeling more comfortable in the situation (Myers & Newman, 2007). By utilizing semi-structured interview, we may gain deepen knowledge about topics and how they are felt generally – by also having the ability to ask deeper information about the processes for the data analysis. As in the data analysis results can be potentially grouped better as people and organization may have different naming practices for same actions – so identifying the correct topic can be seen important. Additionally, the selected research method is also widely accepted in the field of Information System.

5.1.1 Benefits of semi-structured interview

According by Galletta (2013) one key benefit in semi-structured interview is the interviewer's ability to clarify subjects presented by the interviewee. Interviewer may and should ask additional questions to gain better understanding of the interviewed subject, as some phenomena are suggested to be so complex as the predeterminate question may not facilitate the information to be immediately accessible (Galletta, 2013). Myers and Newman (2007) are also suggesting adding flexibility to the interviews as a guideline as the interviewer should explore interesting new directions in conversation for research as in addition Adams (2015) claims the semi-structured interview to be superb in instances where questions should and could be extended with following questions to gain wider knowledge from the field. Therefore, considering this study, the semi-structured interview is supporting the desired practice-oriented outcome of the study, as partly argued above. In performed interviews there were then a possibility to gain better understanding of the practices used in real life organizations and can ask how the processes are arranged if necessary.

5.1.2 Disadvantages of semi-structured interview

As a drawback of select research method, semi-structured interview, Adams (2015) is presenting the challenge to gain large enough audience and sample for the needed precision of the study especially if there is a demand to seek

percentual change or existent of the researchable topic. Additionally, Adams (2015, p.493) is presenting the challenging attributes for the interviewer as first, the interviewer should be "--smart, sensitive, poised, and nimble, as well as knowledgeable about the relevant substantive issues." Therefore, it's very important the researcher to have relevant competence in the field of study to be successful in the research and collection process of data.

5.2 Conduct of the study

The questions in the interviews were based on the need previously presented literature has risen up. Background questions are designed to describe the current baseline of the organization and the interviewees maturity with the ITSM and ITIL 4. The actual questions are designed by the comments of literature to match the need to study the practice in the Information System Sciences field of study. They were straightforwardly aligned with the research questions to get directly answered the topics and phenomena taking place in the field.

The following background questions were presented for the interviewees:

1. What is your education and professional age within Information Technology Service Management?
2. How familiar you are with the concept of value co-creation?
3. Is the service delivery centralized or is there differing practices inside of the organization?
4. How long ITIL -framework has been in use in organization?
5. Has organization previously paid attention to value creation?
6. What major ITSM frameworks there is existing in your organization?

The following questions were presented for the interviewees:

1. What are your key stakeholders in terms of ITSM?
2. What are the key drivers to cause improvement or changes in ITSM processes?
3. What kind of actions the organization takes to facilitate the continual improvement based on the feedback from stakeholders?
4. What kind of interactions you are facilitating with the customers through service production?
5. How is organization facilitating the feedback loops and communication with customers?
6. Do you feel that the IT services are produced customer-orientated?
7. Are you measuring perceived value?
    i. If yes: What are the metrics or KPIs you are using?
    ii. If no: Are you planned to start measure customer perceived value?

8. What new practices adopting of ITIL 4 -framework has bring in your organization?
9. How do you feel about ITIL 4 -framework?
10. How do you feel the ITSM in your organization is performing overall?

For this study there was interviewed five experts who were working directly with ITIL 4 framework and adapting it in ITSM on daily basis. Interviewees were acquired by existing network of the researcher or contacting them directly via LinkedIn networking application. The restrictions regarding the selection of the interviewees were following: they should work directly with the service management that is adapting ITIL 4 -framework in its processes.

Generally, there was existing challenges to find out suitable people to be interviewed as the ITIL 4 was relatively new framework and the experts who were made some certification of ITIL 4 and were managed to be contacted, were not anymore directly working with the service management or their time was not on their side to be able to participate in the interview process.

There were five interviewees interviewed who were working in four different organizations offering different kind of IT-services for different stakeholders, both internal and external. Additionally couple of organizations were working directly with the Finnish healthcare services where there was both public and private organization. Actual interviews were taken place in March, April, and May of 2022. Interviews took one hour to one and half hour and they were conducted by semi-structured interview method, which opened room for additional questions and comments regarding the phenomenon of value co-creation and ITIL 4 in ITSM generally. The interviewees are presented in the following table with the background information of them and their organizations.

Interviewee	**Company**	**Company industry**	**Interviewee's title**	**Interviewee's professional age in ITSM and education**
Interviewee 1	Company A	Basic Social Security	Service Manager	11 years with ITSM, MSc in Computer Science
Interviewee 2	Company B	Telecommunications	Service Design Manager	4 years with ITSM, MSc in Telecommunication Technologies

Interviewee 3	Company C	Healthcare technology	Service Manager	30 years with ITSM, MSc in Economics
Interviewee 4	Company D	Energy Industry	Service Manager	3 years with ITSM, BBA in IT Business
Interviewee 5	Company D	Energy Industry	IT Department Manager	25 years with ITSM, BSc in Telecommunications

Interviews took generally time from one hour to one-and-half hour averaging 78 minutes. However, some dialogue was irrelevant in terms of this research. Before moving to the questions, the ITIL 4 service value chain and value co-creation as a paradigm were presented for the interviewees. Generally, all of the interviewees were remembering the concepts well from ITIL 4 certification courses, but Interviewee 4 admitted that iterating the ITIL 4 material would have not done any harm for her. During the interviews, the answers started to look the same regarding ITIL 4's impact. Additionally, value measurement was considered as a challenging subject, and the used metrics were emerging directly from the older ITIL v3 version, or they were coming more from the business side than emerging from the ITIL 4 -framework compliance service management.

5.3 Data analysis

The recorded interviews were transcribed almost totally. Talk of all parties, both the interviewer and interviewee, was opened – but dialogue considering subjects that were totally irrelevant regarding this study were not transcribed. Recording was paused and slowed down when transcribing if writing couldn't match the speed of talk and conversation.

After transcriptions the material was analyzed and grouped under the themes emerging from the results by utilizing direct content analysis presented by Hsieh and Shannon (2005). Direct content analysis was selected for this study as the empire section was based heavily on the previous literature and theorems regarding value co-creation. Additionally, direct content analysis supports the prior research by extending it explicating the reality (Hsieh & Shannon, 2005). Hsieh and Shannon (2005) are arguing that in the direct content analysis some coding schemes can be identified beforehand by the previous research, which was utilized in this study even in the research questions and interview questionnaire, considering for example feedback loops. However, as an one drawback

regarding selected data analysis method, Hsieh and Shannon (2005, p.1283) are presenting the "--researchers might be more likely to find evidence that is supportive rather than nonsupportive of a theory."

There were discovered couple coding categories beforehand based on the literature, but as Hsieh and Shannon (2005) are suggesting some coding can be determined after the interviews during data analysis if the answers are not falling into the existing codes the new is created then. Grouping was performed by coding the answers covering the same topics together and themes considering this study's subject are discussed further in the next chapter. As the answers for the questions and topics discussed are not one hundred percentage matched, researcher used its own understanding of discussed context and dialogue to group the similar topics together accordingly which were not determined beforehand by utilizing the existing research. As the goal of the research is answer to research questions, the theming was conducted by having underlying direction to group answers especially to match the topics of research questions. Thus, this can be seen supporting a theory-based categorizing, direct content analysis -method, where the findings of previous literature and research guide the categorization of data, but the researcher can still identify its own relevant themes from the data.

5.4 Reliability of the study

In this research it was tried to follow research guidelines presented by method literature as good as possible. For example, suggestion from Barriball and While (1993) regarding conveying equivalence of meaning was followed. When words for example in the different interviews may differed, it was tried to make sure that the topic was understood by similar ways in each interview. All steps regarding performing the study are documented down to increase transparency in the research and the interpretation was tried to perform according to guidelines presented by methodological literature. Regarding study's creditability, validity, and reliability Adams (2015) for example argues that the interviewer should have a great knowledge of the subject of the study when performing semi-structured interview. Therefore, as the interviewer had a quite young professional age compared to especially to the interviewees there may be risk that some key perspectives were missing during the interviews which the interviewer was incompetent to notice. However, no clear misunderstandings existed, and interviewees felt they also gained some positive information from younger counterpart regarding different subject covered during interviews.

In addition, as there were difficulties to acquire larger audience for the research, the relatively small population might not describe the current situation on the level that it could be generalizable to the larger field of ITSM, although the coded results were similar. However, as there existed similar topics raised from different ITSM organizations these challenges and topics presented in this study could be easily existing in the larger numbers on the field as well. As the identified themes were emerged from wide range of different business fields there

could be an assumption that the results are also repeatable on some level. However, interviewed people and their organizations existed in Finland, and interviews were conducted during spring 2022 when the ITIL 4 was quite young framework and still on some level waited to be adopted in greater numbers. Therefore, the repeatability of the study may be depending on the context and the timing as well.

Regarding study's reliability, there might exist space to criticize the sample, as there were difficulties to acquire no more than five interviewees from four organizations. However, the validity on the other hand could seen to be on the excellent level as all the interviewees were certified experts working directly with ITIL 4. In addition like mentioned previously, the findings were very similar between interviews.

6 RESULTS

In this chapter results are presented that are risen up from the interviews. As this study's purpose was to discover practical examples how the value co creation is established in the ITIL 4 framework, but also how it is measured, the results from semi-structured interviews are categorized into the two themes, which both are categorized further under couple more specified classes.

6.1 ITIL 4 value co-creation

In this sub chapter answers for research questions 1 and 2 are mainly answered.

1. WHAT KIND OF ACTIONS AND PROCESSES ORGANIZATIONS ARE TAKING TO FACILITATE THE VALUE CO-CREATION IN ITIL 4 CONTEXT?

2. WHAT KIND OF ACTIONS ARE TAKEN TO FACILITATE THE FEEDBACK LOOP AND INTERACTIONS WITH CUSTOMERS TO GAIN INSIGHTS?

There is presented themed groups risen from data analysis through which the results are presented how ITIL 4 is appearing on the actual field of business. The research questions one and two are covered up together as in the study it was noticed that they are aligned very closely together and the co-creation facilitation is related heavily to interactions, and iterative development based on the customer feedback.

6.1.1 Guiding the Service Design

Generally, the idea behind ITSM is to offer eventually establish the facilitation of value for the customer. Thus, the customer is easily considered as the ultimate singularity of the focus given towards service design. As the service design is guiding majorly the processes established, practices taken from ITIL library, and overall ways to deliver the service via operand or operant resources, the actors triggering Service Design processes are described in this theme. However, as the

end user or end customer is easily seen as the most influential actor, the most influential party and actor in terms of service design varied a lot within different businesses domains and organizations.

> When I am thinking this, the most important triggering factor behind service design and change [processes] is the legislation. So if the legislation is demanding something and Ministry of Social Affairs and Health, and Institute for Health and Welfare are giving requirements [according to their interpretation of legislation] how some service or its part is needed to be delivered its then often triggering service design and change in our side. So, changes in legislation are often triggering needs in service delivery, thus, often also change in the actual IT-system as well. Another major factor we are listening is the actual customer and its needs. But in the public organizations and institutes it often goes in this order [first comes legislation and later the actual customer need]. Sometimes changes are emerging from the customer need, but the legislation is more driving factor – but in some instances major customer needs are needed to align with the legislation. And when I am talking about our customers, I am referring to citizens, some healthcare software vendors, and health care organizations. (Interviewee 1)

> The business is the one and most influential factor to affect service design. In the Organization B the service management and delivery is very siloed [as there is existing so many services and business segments]. In our organization the ITIL framework and service management is aiming to keep the services and its processes steady, and the business organization is something that is answering for the customer demand and how our IT-services and actual customer needs are aligned. We are having new service design and delivery department that was just moved under business organization where its purpose is to implement development projects further. Another major stakeholder nowadays is the HR as we are having some struggles to find enough skilled employees to work with the services and their delivery. (Interviewee 2)

Regarding the service and its type, the customer was partly excluded from triggering the actual process change, as even when the customers importance was noticed generally, it was not raised as an important factor in terms of change. This might however relate heavily to the actual business field, organization, and individual service that which institute or actor is working in a key role. The key role may vary between the legislation, business organizations, guiding institute, or even in some services by vendor [as they were generating sales for the mutual customer thus triggering need to service processes.]

> Of course, customer needs are affecting very much. IT vendors and customer are very important. Especially the vendors are also worth of mentioning as they are doing sales for our customers, thus, their activities are emitting to our organization very much and are having a great influence in our work. – Organization C is an integration firm, so we are not developing or having any softwares but just integrations these thousands of systems together. There is some very big and, well, weird solutions and contraptions [badly documented legacy systems]. So the customer is having an influence but also the software vendors. Additionally, I could mention the legislation as I'm working with the healthcare solutions the changes in legislation and especially the patient safety legislation and its changes is triggering the service design, developing of integrations, and change management. (Interviewee 3)

> We are doing much cooperation within internal clients [IT Department is only serving the corporates needs internally] were they part of financial management or Human Resource management and the Acquisition Department is very close stakeholder also. But I think these are emerging a lot from our organization as we are delivering everything internally and trying to maximize the value for our organization and its core business. Every customer are internal organization or their employees. (Interviewee 4)

The customer was not always the most important stakeholder in terms of triggering service development and further design, thus, depending on the usage some another organizations or factors were having greater influence. There was however built-in perspective that every service is arranged for the end-user and the end-user or end customer, the individual service consumer, was seen very important. Services were generally arranged to be delivered for the end-user easily, but the end-user was not the guiding audience generally if considering how the ITSM is arranged. Everybody was collecting feedback from the end-users of the service, and reasonably the feedback is analyzed to offer better experience or service delivery. Its however important to notice and understand that customer may be having multiple end-users (for e.g., internal/external customer organizations with its employees) or customer is having its own customers and end-users (for e.g., healthcare district and the citizens can be seen as end-users). From interviews emerged an original agenda behind every organization to perform well in terms of business or its guiding principles. For example, in the Organization B were existing difficulties emerging from these fundamental basis "Publicly listed organizations challenge is to have an ability to perform much with 'small' expenses – we are eventually trying to thrive revenue for the shareholders." Same kind of challenges were also existing in the public institutes or public owned organizations as their most major guidance was seen to be emerging from legislation: there is base services government must offer.

Regarding service design and its delivery, the ITSM was considered to be bending on the customers' needs in some instances. Some reasons for this were argued by the size of the customer, as with the multi million deal you are generally wanting to have that customer in the future as well, thus, the big customer was having quite much influence for towards service provider. "For example, large customer with large volume requires you to adapt and optimize your ITSM." Regarding the organization B following can be seen to be affecting so majorly on the business side and the ultimate goal of providing profit for shareholders as the individual customer organization can influence in great power to actual ITSM.

> But if the customer is ready to pay from something then we are of course ready to deliver it. These monetary figures are kind of just so big compared to the total cost of some new service component as if the big client is asking to have some smaller services, we are not risking the customer relationship only because some small service in the big deal is not productized yet. (Interviewee 2)

However, the service design and further development was not always emerging from the customer side by direct or non-direct manners as it was seen important

also to guide customer into the right directions in terms to generate the most value for them.

> Henry Ford for example described in the past that people wanted to have a faster horse instead of the car as they did not know its benefits. This is a good example how we must try to change sometimes also the market and the world. Sometimes instead of rushing behind the customers' needs is better to guide the customer into the actual and right direction. (Interviewee 2)

As mentioned above some requirements were on the other hand emerging from the legislation, especially regarding public or public owned organizations and institutes, but as in the private companies as well, the mutual cooperation between stakeholders were appreciated. Regarding the legislation and its development, the interviewee 1 experienced that IT service provider had influence towards legislation, if not direct, at least consultative "Yeah, regarding the matter of subject we are not having so major influence towards the law, but regarding the arrangement and the adoption of legislation we are consulting the legislator how this should be written down."

6.1.2 Understanding

The one theme emerged from the ITIL 4 -framework guiding ITSM was the will to understand the customer and the end-user. In many cases the people tried to perform as well as possible in their jobs, thus arrange the service by that way it increases customer value and offers generally good service for the customer in terms of the directions and wishes emerging from their guiding organizations. "Yeah, generally we are trying to deliver actual value and actions that are aligned with our strategy to deliver additional value for our core business. "The framework was seen to also facilitate the founding's to move from process centric thinking to customer value centric thinking. Overall, the understanding of customer was seen very vital, as the service is often produced for the customer. This is aligned well with the overall idea of value co-creation, as the end-user is determining the value thus organizations are seemingly establishing as good facilitations for value creations as possible by their understanding.

> ITIIL4 is very good framework. It moves from process centric perspective to customer value centric perspective. The foundation is not changed much, but the approach is now right, or at least more right than it was before. We are determining the need of processes by utilizing customer perspective and by thinking what is relevant for the customer. I am thinking that because of this the ITSM has shifted to right direction. And it's very important from the customers perspective as well that the way how this is thought through is moved to customer value perspective instead of process perspective. (Interviewee 1)

> I am personally educated myself with service design studies and for example there was pointed down that value co-creation is established well if all stakeholders and users are getting around same table. Then its easily to see where the bending point of the service delivery is, and which is done well. I am thinking that the overall

> service design is very important process and its vital to understand the customer and its needs and perspectives as good as possible. (Interviewee 3)

Customer is having also impact to the actual service design on some parts. As when the service catalogue and generally needed services - or at least the bigger picture regarding these – is coming from the major stakeholder side, which was claimed to normally be a business organization or some another major influential party such as institute, the end-users were having capabilities to affect to the actual processes of how services are performed.

> Service design is kickstarted also from the architectural work as now in the architecture we are focusing also for the customer value and its value creation processes. All the service cards are made from customer perspective, and we are thinking it very closely through what the customer really needs and wants. So every time we are trying to focus to the customers value what the customer is gaining by consuming services from our portfolio. I mean we are also creating the service with the customer instead of internally thinking and guessing what the customer might want – we want to discover what the customer wants. And this is also adapted directly into the services process as well meaning that we are consulting customers how they are seeing the current service delivery. Also same kind of logic is applying in our IT department to both service design but also for the all digitalization projects. (Interviewee 5)

> We are having ”one door” -principle that everything comes centralized and there the customer feedback and customer satisfaction is very guiding principle. Every feedback is went through and analyzed further as we are trying to always offer better and better service. On the other hand, we are also listening vendors as they have gave also sometimes very good ideas of how some process should be changed to potentially development services further. And this is two-way road as we are also giving feedback and ideas back to our vendors. So there is very cooperative approach as we are trying to serve the customers as good as possible. (Interviewee 4)

As the customer was having impact towards service provider and it was heard carefully, the vendors and service providers of the service provider were also consulted. Mindset was generally quite open for the improvements in service delivery if they were argued. Customer feedback was appreciated, but the software vendors were also having competence from their products and the process that should be built around it.

6.1.3 Interactions

As stated previously, value co-creation is always requiring interactions between the operators on the value creation system, as they can considered to be producer but also customer. Generally, in the interviews stood up comments regarding the facilitation of the interaction between the operators. Every interviewed organizations were having Service Desks to facilitate feedback with their customers which worked as an main contact point mostly in the daily service delivery. Services were on some parts established as a self-service; thus, organizations were given

possibility for the end customer to use and control the service on the "zero level" as a self-service and if some incident is happening or some additional service is required then the SD worked as an main contact point. The communication, thus major part of interactions was established either through service desks for bigger audience, or through service managers for more individual customers, " —if we are talking about the citizens then they can connect us through service desk."

> This is drawn by the ITIL [shows process and organization charts], every request should become through service delivery and management system or directly through service desk. There are some zero-level possibilities that the customer can act with the service by themselves but if the self-service is not working the customer can use the same gate than everybody else [refers to service desk]. (Interviewee 5)

Some interactions with the customer were facilitated directly with the customer organizations or stakeholder's representative. This was referred as a Service Management model, where the customer was tried to serve as good as possible by having a representative " —Service Manager can be seen as a customer's employee in our organization. The service manager tries to manage and proceed the customers' needs and wishes in our organization." Service Manager was seen as more direct contact point for customer, thus especially the biggest clients had usually contact point similar like this. Its noteworthy to also understand the varying naming practices in the field of IT, as Service Manager can been seen as an actor who is in charge of service and can be understood as an "owner" of service. On the other hand, the Service Manager can also be customer's endpoint towards organization's service offerings so context should be understood when thinking more about the roles of Service Manager in every particular instance.

> We are having a continuous dialogue with the shareholders [refers to Ministry of Social Affairs and Health, and Institute for Health and Welfare] that what kind of solution we are building and how it is delivered, partly we can through as deep as database table level to describe and talk the IT-service functionalities. And it goes partly very technical – So that what I am seeing there is continuous conversations between our Service Office and the customer organizations core stakeholder institutes how we can for example deliver the requirements emerging from legislation technologically. And on the other hand, we are giving the contribution as well especially for the Ministry of Social Affairs and Health, and Institute for Health and Welfare for the lawmaking process that is this demand technologically possible to develop and deliver for citizens. We are trying to exclude the most impossible requirements but sometimes there is always something lost further as well… (Interviewee 1)

> Yeah, we are having some systematic structures, for example with the vendors we are having mutual meetings, but with the bigger development projects there is often systematic triangular meeting where the are representatives from our side, from vendors side, and from the customer's side. And in some cases, we are having some additional meetings but generally the systematic structures are seen as monthly meetings that are held with vendors and customers. (Interviewee 3)

Feedback and giving it was agreed by everybody to been seen as an important interaction point. If the customer was part of bigger population, as the service provider was providing service for bigger audience such as national wide healthcare IT-service, telecommunication/network subscriptions and connections management services, or IT-services for large industrial organization, the process to receive feedback changed compared to more individual service or the more individual core actor of service design. Where with the more individual stakeholder the feedback and interactions were covered through mutual meetings, the bigger customer base seemingly forced the IT service providers to use methods that are more manageable and cost-effective to establish additional customer interactions and receive feedback.

> Citizens are participated for example by that how their visit worked out in the system, and this is performed by different forms that how the citizen thinks the service is delivered, good or poor. And we are constantly going through that feedback and citizens are having trust to this as they are thinking that the feedback will be taken into the account. And all the relevant development ideas are analyzed very carefully, and we are gaining generally quite good feedback especially about the challenges the citizens are encountering by using the system. So as a conclusion we are having constantly questionnaires and we are going them through constantly. (Interviewee 1)

> So, the Service Manager is playing key role in the value co-creation as the service Manager is the one who takes the things [feedback from customer] forward in terms of development. I think we should do this way or more structure this a bit but it is heading definitely to the right direction and all of this is sharpening to service delivery manager and the ones competence to participate another's [persons, organizations, business]. Sometimes I am feeling that these people should have more wide shoulders to really get things forward and it could be a good direction of development. (Interviewee 2)

However, if the organization was having customer orientated service managers to facilitate the interactions, it was noticed that they are having a great impact to first facilitate the interactions (such as common meetings, daily's, weekly's, or monthly's), but the second also to make the things meaningful in terms of new requirements and feedback. The Service Managers competence was seen important in terms of success. If Service Manger were having competence towards both technical architecture of customer instance, but towards also for their business the Service Manager could get more partner-like orientated approach to offer and consult the customer.

> Yes, and the thing what supports the one in this is the factor that the Service Manager would need more power to do decisions and get things forward. Service Managers wishes and state of mind is not all the time resonating into the actual service production and its level. Like mentioned before if service Manager is having technical competence, then he can support the customer in some cases then non-technical can't – thus the support would require first support and help for the service manager before he could actually support the customer. – and generally, when the Service Managers responsibility is to support the customer and bring the customers wishes and needs further and work as a gatekeeper for also to the customers

> side. And sometimes some ideas and further development offerings can be emerging from Organization B towards the customer so in this case the service managers task is to talk these through also with the customer. (Interviewee 2)

If the service and cooperative relationships between vendors took place in multiactor service environment and it was seen to be on more deeper strategical level in terms of the service production, the communication and interactions were continuous. There existed "--continuous communication between different stakeholder organizations" and especially if service providers were working jointly to offer the service "—the vendors are very close partners, and we are having constant communication with them. Different stakeholders in the lawmaking side are also the ones we are communicating continuous as well."

On some instances, especially if something in the feedback was seen unclear, but still meaningful and important, the more direct and comprehensive interactions such as direct phone call or meeting could be arranged with the service provider and the customer "—in some cases we can ask directly [more information of feedback] for example by having a phone call. But this is not so common."

It was also mentioned that measuring the service and the customer experience worked also as an interaction point thus, they were giving possibility for the service provider to adjust the service and gain service experience from the customer "From resolved tickets we are sending always a feedback form, and NPS questionnaire to gain the feedback especially from the larger audience."

> In our case feedback can be given anonymously and sadly in some cases there is no reference to ticket number as then the feedback must go through on overall level instead of identifying the pain points. And if the specific ticket number is given and we can contact the customer then we are in person discussing the things through which often are eventually discovered to be just misunderstanding or something similar. (Interviewee 4)

6.1.4 Updating the attitude and the framework

Generally, the ITIL 4 was considered to be very positive update compared to older ITIL v3. On some parts this is totally making also arguably sense as there was more than the decade between the ITIL v3 and ITIL 4 versions. The ITIL 4 is definitely clarifying the current, but the new changes are not required and there were no new practices presented for the audience. Regarding customer value and its importance, it was felt important but "—ITIL 4 hasn't bring that when it was adopted. We were previously made changed regarding this. Sessions and user feedback is important, and we are following it, but not because of ITIL 4." Generally, the importance of customer value and realization that services should be produced for the customer and its perspective should be evaluated constantly, was understood before the ITIL 4. As the ITIL 4 was seen to be positive update, the framework was more updating itself to match the current, rather than updating the actual business or its processes in the field. However, it was pointed that

when there is coming certified people working with the particular subject, it may change unawares the processes to work and attitude to work as ITIL 4 has underlined.

> I don't see that ITIL 4 would have any special effect in our daily work. We have done much development work generally like to simplify and automate, but I wouldn't say that these would be emerging directly from ITIL 4. It has maybe confirmed in fact the things what we are already doing and what we have seen and identified by ourselves. And the things what have been developing over ITIL v3 [changed the service perspective to customer value] was quite much similar that the ITIL 4 updated. So it has clarified a bit the way of work also from the frameworks side and maybe more updated the framework to the current as well… --v3 was definitely out of date from its approach and perspective towards daily work. ITIL 4 hasn't bring anything new but maybe it unconsciousness clarifies and affects to daily work and development when people are now doing the courses as it guides the daily work and ITSM quite much. (Interviewee 2)

On the other hand when ITIL 4 certificates have come up and people have been briefed into the new framework, it was felt that it has changed the daily attitude of work. Especially the attitude of software developers as when service managers are underlying the customer value, its also cognitively transferring to the work the actual software developers are doing. The framework clarifies the purpose behind of different practices for the ones also that are not educated ITSM experts, or for the ones that have not understood the importance of the customers value creation before.

Generally, if the ITIL 4 has changed or brought something in the organization, it has been attitude. The attitude change is considering especially to bring among the perspective to understand the customer and its value creation. Customer is seen very important, and now it was felt that the ITIL 4 framework is also establishing all the services eventually for the customer, as the customers are the ones for the service is eventually produced.

> I would say that the ITIL 4 has brought a small attitude update for the makers [refers to developers and people associated in SD or service delivery]. The service organization has before understood right the core idea behind ITIL v3 and its processes that they are established eventually for the customer, but now in the ITIL 4 the customer value perspective is definitely clarifying things a lot. Considering ITIL 4 I think most of the things and subjects it presents are something that have been doing and understanding before and its mostly just updating itself. Practices are aligned between ITIL 4 and ITIL v3 but in the newest version they argued and explained a bit better why they are what they are. (Interviewee 1)

> I would say that first time when we talked about the service design the solution and service design have been in very important role as it is planned very closely with the customer. But, is it ITIL 4 for or is it something else I can't describe as we however did this way before the ITIL 4 was even published. Now the newest framework is raised up to bird perspective and gives a more holistic picture of the field of customer value and why we are doing this compared to ITIL v3. The coursing was also very positive. Definitely one the best learning packages I have went through recently. (Interviewee 3)

However, after the adoption of the new framework and its attitude change, it has may radiated to actual change of the processes by starting self-organizing processes inside the organization when they started to for example understand the customer value. For example, customers' feedback was now seen more important than before, and it was started to look through more carefully. Additionally, some resonance were coming to daily work as well as greater participation and cooperation actions with the vendors was started when the importance of the mutual value creation for the end user was understood.

> Yeah, this ITIL 4 has deepen up the way how we are thinking these through especially regarding the customer-orientated approach and the customer's value creation. And on the other hand, now different components and their relationships are also now described better than they were before. Also their importance in terms of value creation is better argued and explained. I am personally felt this very good and especially the further development based on the feedback is very important directly emerging from the ITIL 4 course. In addition, other producers and actors in this service production are being supported here, which is quite multifaceted, but we are just trying to maximize the value for the customer. Maybe the ITIL 4 has just explained and drove the perspective a little bit further than before considering the value for the customer and the previous version [ITIL v3] then made the whole ITSM better than it was before. (Interviewee 5)

The was considered ITIL 4 not to bring anything new with its adoption that must have been taken into adaption on business and its processes. However, it was seen to be very positive change by clarifying the relations between different processes, but by also explaining baseline and idea behind the ITIL 4 and overall service management. As it did not bring anything, adapting new things and changes were seen a bit tricky – but it was not understood either as an intrinsic value to guide the work and development in the organization. Therefore, when the ITIL 4 raised up potentially new perspective in IT service offering organization, it eventually resonated to some change, generally considered as an improvement, as well in the work and processes performed. If the organization had not implemented enough customer orientation approaches before, the new framework set in motion this process as it motivated the need to be more customer value orientated. On the other hand, in the organizations that had realized the customer importance and value before, the framework did not resonate to any actual change, but it was considered to be updating itself. ITIL v3 was seen to be very out-of-date compared to the current situation as the customer importance was recognized by other manners before. In these cases, the newest ITIL version was more an update, than a ground shaking new framework to guide IT service provider into the success.

6.2 Measuring the value

In this subchapter value measurement is covered through as an existing phenomenon in the field to answer the research question 3.

3. HOW IS THE SUCCESSFULNESS OF VALUE CO-CREATION AND VALUE DELIVERY MEASURED? WHAT ARE THE KEY METRICS?

There is presented themes risen from the interviews and data analysis regarding measurement of value in ITSM and ITIL 4 context.

6.2.1 Difficulties

Value measurement was seen as quite difficult task. Two main factors regarding difficulties raised from the interviews were considered to be related either on the definition of value as a measurable object, or to the lack of relevant metrics how the value can be measured. Thus, there were difficulties to understand how it really can be measured as there was no directly specified endpoint that could be monitored and measured, and not any established metrics for this either. This is aligned also with the overall theorem that the end-user is the one who eventually determinates the value the one is receiving from consumption of the service.

> Well, hmmm, there is a challenge to determinate what the value really is as its the customer responsibility [as its hard to measure then]. If the productization is not done correctly we are then just delivering the items and service what the customer wants to so how the value is measured, then. Nobody has told me that. Behind the idea of productization is that we should gain understanding and signals what the value that we are delivering for the customer really is thus it can be tested that does the customer see the value similar than we are seeing it. Maybe now the best meter for that is the NPS questionnaire but in sales I think we should do more discovery on the customers actual business environment thus seeing what we are really potentially delivering in terms of value and not just selling the box. (Interviewee 2)

As the measurement of value was seen as a challenging task, there emerged idea of building up competence to measure it more efficient than in the current situation. From service side perspective, this can considered to be understandable that ITIL 4 is not strictly offering any metrics, as when the value is eventually determined by the end-user of service and it is related heavily with the usage of the service, a measurable variable that could be generalized among IT services could be hard to establish and identify. On the other hand, in the ITSM the performance of service may still be somehow tracked by for example following the usage of it, or by adapting NPS questionnaires. If there would be developed competence in the ITSM, determining appropriate metrics could be easier for service providers.

> We are trying to gain and build some maturity towards value measuring as we could start it. At the moment its very Service Level Agreement based, so we are not really measuring the customer value anyhow at the moment as we haven't had the time nor competence for that. (Interviewee 3)

There was seen also a small frustration towards the value measurement, or missing of it from the framework's side, especially in the organizations that are

measuring their activities already. As in the ITIL v3 there was introduced metrics to track – which most of then were related to process performance – the ITIL 4 did not introduce any which was felt a bit negatively as then when the importance of customer value was underlined, the organizations were left quite alone in terms of measuring it.

> There in the ITIL 4 there was not presented any new metrics or measures right? So I think it really did not give any tools for that how the actual value really could be measured accordingly. (Interviewee 5)

Overally the difficulties related to value measurement were either based on the identifying of measurable unit, or to unknowledge what metrics should be established. As there was not offered any guidance towards value measurement, the organizations were feeling the were left little alone regarding this.

6.2.2 Relying to the old – and not measuring the value

As the value measurement was seen to be very challenging the actual metrics were often based on the suggestions ITIL v3 gave in the past. Nearly in every case there was some sort of measurements and metrics adapted like "—from solved tickets we are always sending a feedback form and NPS is additionally a constant measure we are following." The metrics in use were adapted to the companies from another reasons and sources that ITIL 4, and they were usually related to customer happiness and service experience. However, they may still emit some value-based experiences as if the customer is happy with the service they are using their answers to questionnaires may be affected by that service experience as well.

> We are measuring the usage and the value through user experience [how the users are navigating in the service's site] and through feedback they are giving. Normally there is a questionnaire that contains four options to ask how we performed – logically similar that what is existing in multiple stores and restaurants and its maybe the most concrete one. Its asked very often. And sometimes we are having more in depth and specified questionnaires with free feedback and comments, but they are established time to time, not always. But I think the current is fine enough as we are having so much users in terms of volume. So in the current situation I am happy how we are doing this. (Interviewee 1)

On some instances the customer value measurement was tried to achieve by relaying to measurement of user experience of the service usage and through feedback to identify how the customer base is achieving the goal – the valuated outcome – they wish to achieve. A fast easy achievable questionnaire was seen easy to use by the end-user of the service, thus, the one can give fast overall feedback and opinion regarding the service. However, this was not directly measuring the value, but an opinion may radiate the overall feelings and general happiness of the particular service thus it is not still one hundred percentage reliable. More holistic feedback forms were seen also as an one source of metrics as it gives more detailed information of service and consumption process, but on the other hand

it also requires quite good amount of structured analysis to get most out of it, and therefore especially in the services where the audience was having a larger volume, the simpler immediately measurable metrics, such as NPS, were seen more useful.

> Yeah, in the helpdesk there is existing the most traditional ones and of course we are measuring NPS for example – but measures considering the actual value are not existing as in the current situation we are focused more towards measuring customer happiness instead. And the development of value-based metrics are left a bit back but its definitely something we should development at some point. So some metrics are existing but their relevance considering the actual value is questionable. (Interviewee 3)

Regarding service production there was generally other metrics established, that not directly monitored customer value but aspects relating to it, such as answer rates and solution times of the tickets. On some parts the requirements were emerging from another agreements such as from SLAs, but these are measuring topics that can indirectly affect the actual value the customer is gaining for example by how fast the customer is getting incidents solver. However, this cannot be considered as a value orientated metrics.

> We are measuring the answer and solution times of tickets, percentual goals for example 80/20 [how many percentages of tickets are solved in each step of service support tiers], and then some service experience with one to four -level questionnaire that the one is the best and the four is the poorest performance. And in the support services we are sending also additional service happiness questionnaire and feedback forms for our customer organizations but unfortunately, we have discovered that the answers are on quite poor status generally. So the best data we are gaining is definitely coming from the service experience metrics. But maybe there is room for improvement when considering these service happiness questionnaires as if we could develop these somehow further so maybe the overall answers percentage would increase as well then. (Interviewee 4)

Generally, the metrics established for the customer were considering customer happiness and not the actual value the customer is gaining from the service. These metrics were for example Net Promoter Score or some another type "Are you happy to this service experience?"-survey, which are in fact asking the service experience from the customer but are not actually asking how the service was establishing actual value for the one. On the other hand, these are working as simply understandable metrics that are generally giving perspective towards how the service is performing overall. They are also easy and fast to use, so answer volume was felt "—relatively high and quite good percentage of customers are answering for this." As the general idea is to produce the service for the customer, measuring more wholesome customer experience rather than customer value was seen more important.

7 DISCUSSION

Generally, ITIL 4 was felt to be very positive update, and the ITIL framework itself was seen to be very useful in ITSM. However, it was seen that the ITIL 4 has not bring much direct new practices or processes to field of IT service management, but it is seen to be updated the older ITIL v3 -framework to describe the current service production environment better than before. This is aligning well with the idea Axelos (2019) foundation has presented regarding ITIL 4's total alignment with the ITIL v3 as well. However, there stood up idea of obsolescence of the previous framework, as it was felt that it did not describe the current anymore and especially the background idea behind operations was not explained on the correct level the Axelos Foundation was felt to be "forced" to update the framework as the idea of value orientated approaches were enabled to organizations from other sources.

Value co-creation and customer value-based orientation towards ITSM was seen very important, as the services are eventually produced for the customer and end-user. However, the guiding directions in the services varied a lot as customer, key-stakeholder, and end-user -relationships very complicated and networked together, the end-user and the ultimate consumer of the service was not in many instances the key actor to thrive the further development. Instead, the biggest authority over service processes was held by the ones the service providing organization responded to. On public organizations, or public owned companies, this was often governmental institute such as Ministry, or governmental district, which are on their side establishing and implementing legislation into the use. On private sector the most influential party was often the core business that was thriving the IT services inside the organization. This worked often from its premises which varied between corporates from generating the actual profit for shareholders to support the corporates core business as beneficially as possible.

Value co-creation was not overseen however, as it was still playing a central role to make the ITSM succeed in its guided direction. Additionally, the analysis of customer value was felt important as the customers eventually are the ones who are consuming the service and ITSM is provided to. Thus, the overall

understanding of the customer was important in terms of making the service suitable for the end-user. This is aligned well with the idea presented by Winkler and Wulf (2019) where ITSM core capability is to orchestrate the correct interactions between provider and consumer to establish the value co-creation. As the value creation is always enabled through value-in-use (Vargo et al., 2008) and determined by the customer, the understanding of the customers value creation process is important to make the service successful and to provide maximal value for the customer. Therefore, the IT service providers listened carefully the customers especially regarding the service consumption and delivery to gain knowledge of how they are performing from the customer point of view. The will to understand the customer could be seen as a key factor to establish the value co-creation in the service environment as it facilitated a room for two-direction impact and conversations.

Value is co-created jointly through interactions thus the interactions are needed to be established to make value co-creation possible. In the field this was changing in quite good numbers depending the actual use case and business of the service provider. When in some instances the value was created directly for the end-user, and the end-user was participated also directly in the co-creation process by giving feedback, in some cases there was existing also another value co-creation processes parallel with the vendors or other key stakeholders. If the customer bias was larger and there was considerable amount of service consumers, then the interactions were taking place as cost-effective manners which were often established through centralized service desks or self-service portals. If the service relationship was more individual – thus therefore often more impactful in terms of the financials or in terms of strategical perspectives of the service provider – there was established Service Management process to cooperate and coordinate the service with the customer. Similar processes were established also with the key stakeholders in some cases and the value co-creation took place there as well when for example vendors gave feedback regarding service delivery for the service provider and vice versa, but this could be also considered as one another service relationship where the provider is instead in customers role. This is somewhat similar what Kohtamäki and Rantala (2016) presented regarding actors' role in value co-creation.

Value co-creation is arguable taking place in many ITSM processes following ITIL 4 -framework as there was in every researched instance established interactions that supported value co-creation. Interactions were mostly considered to be human-to-human connections and they generally took place in the SD's or in meetings arranged by service managers. However, there was no larger portions of mentions of self-service materials by interviewees even when there was couple of services where the audience was a larger public thus, they are using it as a self-service approach in couple of instances. Feedback was also seen as one interaction point, where giving it often resolved it to be analyzed and discussed further. Thus, making it one major factor to thrive the customer orientation in the services and establish actual co-creation as the service provider could then by given feedback make the relevant adjustments to the offered service. This

practical finding is aligned correctly with topics Meyanhardt et al., 2016 highlighted on their study as the value co-creation is established in some instances through feedback, which also in some instances helps the companies improve their process, which aligns with the ITIL's continual improvement model presented by Axelos Foundation (2019). In the study it was also discovered through research questions that interactions and feedback loops performed in the value co-creational context are existing parallel and mutually, as the answers and categories risen up in the interviews were considering similar topics. Also, regarding the different services, the feedback loops were established differently between different stakeholders. If there were existing service managers to monitor the customer relationship more in-depth, or if the customer was a major strategical partner as well in terms of service provision, then the communication was already iterative and constant. If the service was provided for to larger volume of end-users, the feedback loops with the end-user and service consumers were established more judiciously and they were considered to be shorter and one-time instances – and often related to cover incident or negative feedback.

When the value co-creation and the customer value were seen as an important topic, their measurement was however lacking behind in the field. Generally, the business operations were measured and there was established multiple different KPIs and metrics, but they were established from another sources than ITIL 4. Some were emerging from previous ITIL v3 and some were guided from business organizations such as the metrics like Net Promoter Score or service happiness surveys which are tracking service experience and its success, but not the direct value the customer is gaining. However, feedback was seen very important as it opened perspective for further customer point of view inspection, thus partly also perspective for customer value creation process. Unfortunately, feedback was not always gained in large numbers thus they described relative small portion of service end-users. Especially in the services with larger customer numbers, the continual review of freeform feedback could be demanding and time-consuming process thus the organizations with larger number of customers relied more on the shorter and more easily measured surveys. The good experience and recommending the service for others, can be seen as an excelling in the service. When they are not having strict causality, the positively experience value outcome may radiate also to the positive feedback. The general challenge in terms of value measurement was it difficultness to establish the value into the measurable format. It was also seen difficult to establish any value measuring metrics as ITIL 4, or its previous version, did not recommend any. Therefore, the lack of implementable metrics, overall difficulties to identify the measurable unit, and difficulties in determining the key factors in value creation process have led to situation where the organizations are forced to utilize the more simple process or experience related metrics instead of value measuring ones. However, the general phenomena might not be so dark as it seems, as every organization and service provider were having a will to understand the customer and offer good service as possible. By analyzing and understanding the end-users value creation process more deeply it may help to discover the key factors in each service and

their existence which could help to notify measurable factors and variables in the service delivery process.

8 CONCLUSION

In this research it was discovered by qualitative methods how ITIL 4 has made influence towards value co-creation in ITSM. Generally, the value co-creation was facilitated by various ways depending on the service context, but its purpose was often to increase the customer understanding and develop the IT service to be more customer orientated in terms of restrictions given by development guiding parties. However, in some instances there was very closely vendor-provider-customer -cooperation, but in these cases almost all of the actors were managing some part of the service which was eventually produced for larger audiences such as citizens, so conceptual framework and relations presented by Kohtamäki and Rantala (2016) could argued to be existing, but regarding SIAM presented by Holland (2015) there was not discovered larger service integration operations overlapping multiple organization and service providers, or at least SIAM model was not strictly followed then in the best understanding of interviewed ITSM experts. Generally, the interactions to establish the value co-creation and feedback loops varied depending on the context, but it was generally arranged by two options in larger volume, either through Service Managers, or through Service Desks – the level and direction of establishment of these was also varying where in some cases all of the actions performed in IT-services went through SDs, and in some instances it worked only with incident management. Actual value measurement was seen difficult and general actual value measurable metrics were not established, however there still existed measures and KPIs which tracked customer satisfaction and service experience. However, as the service experience metrics were considered to be positive by the field, Morgan and Reko (2006) are arguing that there is no distinguished correlation between NPS measurement and business performance prediction.

For future research from services guidance directions there could be evaluated the impact of customer orientated service guidance. As now the services are often guided based on the key shareholder needs and they are produced under their guidance, even when it is claimed that services are customer-orientated, the end-user was not influencing its process that much. Therefore, it should be tested that can services even be produced effectively by totally customer-oriented

perspective. Additionally, regarding value measurement, it would be good to study further is there existing larger correlation or influence between measuring service experience, and actual value gained through end-users' own value-in-use process. This would ease the challenge encountered by many organizations to give guidance how to potentially also measure end-user value more efficiently to boost the customer orientation even more from current point. The interactions were also established differently according to the actual business case of service provider. Therefore, in the future scientifical testing and evaluation regarding their potentially differing impact between the services would be on place as it could open up room to discover the best practices from "the best practices".

In this study the current situation regarding the ITIL 4 adaption and its impression regarding customer value orientated approach towards IT-service production and value co-creation was studied further. As claimed by the field, ITIL 4 was considered to be decently outdated, and the update of the framework was considered more to match ITIL to current situation and topics in IT-service environment rather than change the field by bringing something new into the use. However, it was delightful to see that the service providers were orientated by themselves into the customer value and customer-orientated service production. The customer may not had the most influence towards the components of service production (see service value chain p.37), but service providers wanted to provide still good service for them. Customers were not the ultimate force to guide service design, but there existed true will from the service providers to understand the customer to make the service more suitable for them. Eventually we all want to be understood by somebody, don't we? Was it then someone else, or the IT-service provider.

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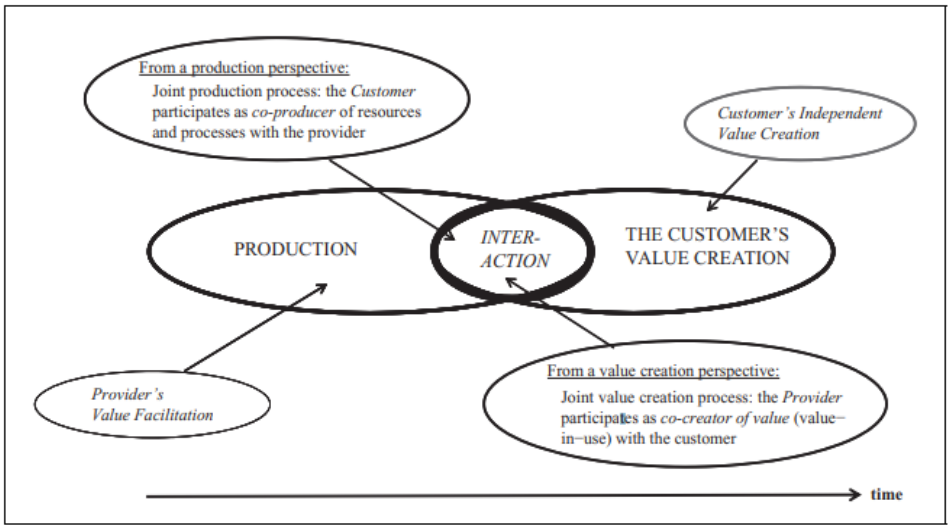
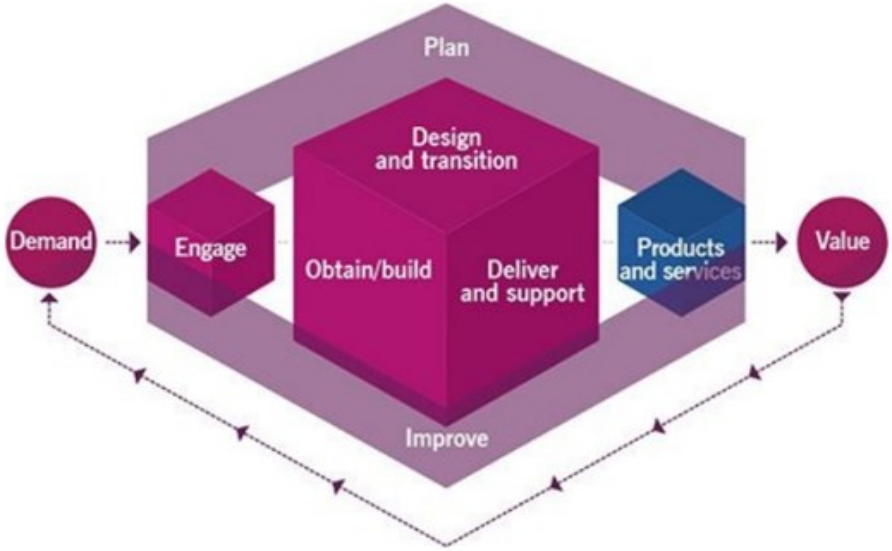
APPENDIX 1 INTERVIEW QUESTIONNAIRE

Participating research regarding value co-creation in ITIL 4 -framework

Value co-creation can be described as an activity where customer and service provider are interacting with each other's. From production perspective, customer is co-producer by participating services providers value facilitated resources. From perspective of value creation of the customer, the service provider is the co-creator of the value when value is enabled through usage of the service.



Information Technology Service Management is referred as an ITSM. ITIL is seen as a framework of ITSM. ITIL 4 core component Service Value Chain hosts key activities needed to facilitate value realization through services. Each activity furthers creation of service value through transforming inputs to further outputs in service value chain.



I. Background questions:

1. What is your education and professional age within Information Technology Service Management?
2. What IT services your organization if offering?
3. Is the service delivery centralized or is there differing practices inside of the organization?
4. How long ITIL -framework has been in use in organization?
5. What major ITSM frameworks there is existing in your organization?
6. Has organization previously paid attention to value co-creation?
7. How familiar you are with the concept of value co-creation?

II. The most influential external factors:

1. What are your key stakeholders in terms of ITSM?
2. What are the key drivers or stakeholders to cause improvement or changes in IT-services and products?
3. What are the key drivers or stakeholders to cause improvement or changes in ITSM processes?

III. Actions, processes, and methods to establish co-creational interaction

1. What kind of actions the organization takes to facilitate the continual improvement based on the feedback from stakeholders?
2. What kind of interactions you are facilitating with the customers through service production?
3. How is organization facilitating the feedback loops and communication with customers?

IV. Customer orientation

1. Do you feel that the IT services are produced customer-orientated?
2. Are you measuring customer perceived value?
    i. If yes: What are the metrics or KPIs you are using? Are you feeling the metrics are supporting value co-creation?
    ii. If no: Are you planned to start measure customer perceived value?

V. Benefits of adopting ITIL 4- framework

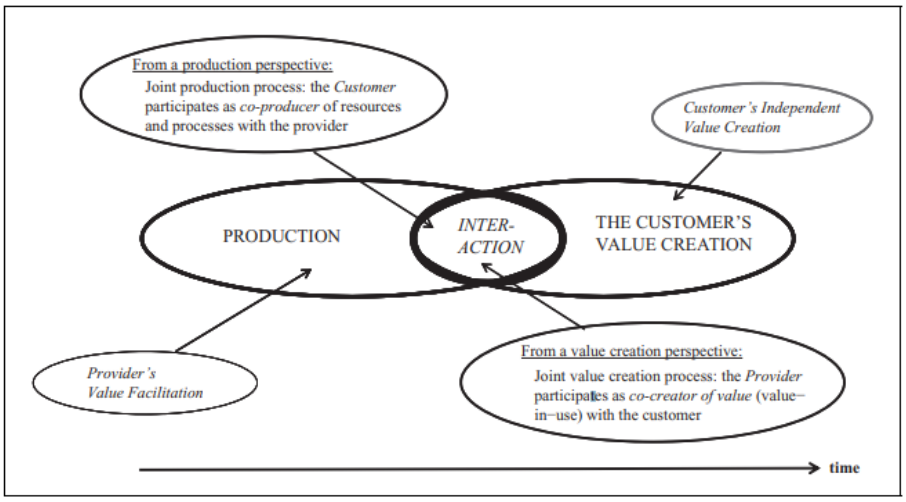
1. What new practices adopting of ITIL 4 -framework has bring in your organization?
2. How do you feel about ITIL 4 -framework?
3. Are new practices affected to service value co-creation by positive or negative manners?
4. How do you feel the ITSM in your organization is performing overall?

Additional: What future plans you have regarding ITSM, ITIL or value co-creation in services?

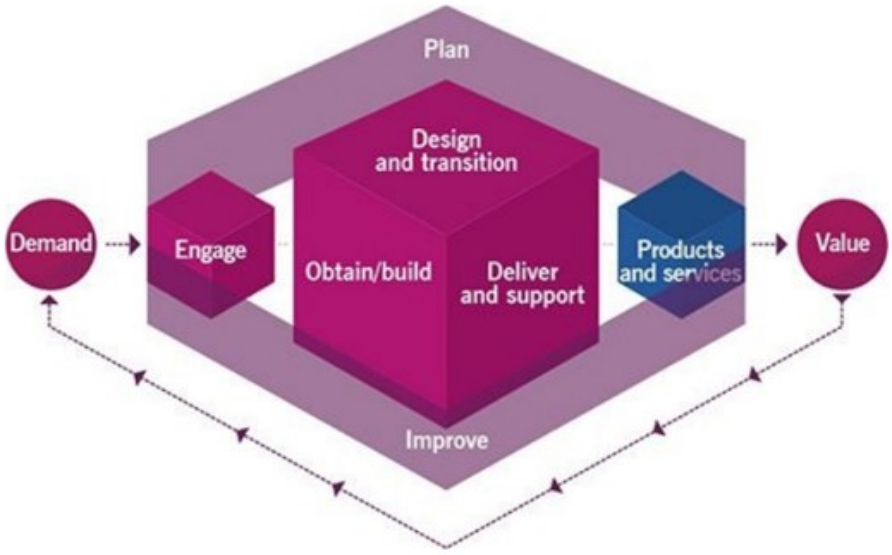
APPENDIX 2 HAASTATTELUPOHJA

Osallistuminen tutkimukseen koskien ITIL 4-viitekehyksessä tapahtuvaa arvonluontia

Arvon yhteisluontia voidaan kuvata toiminnaksi missä asiakas ja palveluntarjoaja ovat vuorovaikutuksessa keskenään. Palvelutuotannon näkökulmasta asiakas on palvelun yhteistuottaja osallistuen sen luontiin palvelutarjoajan fasilitoimien resurssien kautta. Asiakkaan arvontuotannon perspektiivistä palveluntarjoaja on palvelun yhteistuottaja, kun se osallistuu tai tukee asiakkaan arvonluontia palvelua käytettäessä.



ITIL nähdään informaatioteknologian palvelunhallinnan (eng. *Information Technology Service Management*/*ITSM*) viitekehyksenä. ITIL 4 -version keskeisenä komponenttina on palvelun arvoketju (eng. *Service Value Chain*) joka pitää sisällään avaintoiminnot palvelujen arvontuotannon mahdollistamiseksi. Jokainen aktiviteetti edesauttaa arvon syntymistä tuottamalla syötteistä tulosteita ketjun toisille aktiviteeteille.



I. Taustakysymykset:

1. Mikä on koulutuksesi ja ammatillinen ikäsi IT-palveluhallinnan parissa?
2. Mitä IT-palveluita organisaatiosi tarjoaa?
3. Onko palveluntuotanto keskitettyä vai onko organisaatiossa eroavia menetelmiä eri osastojen välillä?
4. Kuinka pitkään ITIL-viitekehys on ollut organisaatiossasi käytössä?
5. Mitä muita IT-palveluhallinnan viitekehyksiä organisaatiossasi on käytössä?
6. Onko organisaatiosi aikaisemmin kiinnittänyt huomiota arvon yhteisluontiin?
7. Kuinka tuttu olet arvon yhteisluonnin (eng. *value co-creation*) konseptin kanssa?

II. Merkittävimmät ulkoiset tekijät:

1. Mitkä ovat merkittävimmät sidosryhmät IT-palvelutuotannon saralla?
2. Mitkä tekijät tai sidosryhmät laukaisevat IT-palvelujen ja tuotteiden kehittämisen ja muuttamisen?
3. Mitkä tekijät tai sidosryhmät laukaisevat IT-palvelujen prosessien ja menetelmien kehittämisen ja muuttamisen?

III. Toimenpiteet joilla mahdollistetaan yhteisluonnin vuorovaikutus

1. Mitä toimenpiteitä organisaatio toteuttaa mahdollistaakseen jatkuvan palvelujen kehittämisen (eng. *continuous improvement*) sidosryhmien palautteen perusteella?
2. Mitä vuorovaikuksen mahdollistavia toimenpiteitä tarjoatte palvelutuotannossa?
3. Miten organisaatiosi toteuttaa palauteloopin (eng. *feedback loop*) ja viestinnän asiakkaiden kanssa?

IV. Asiakaslähtöisyys

1. Koetko että IT-palveluita organisaatiossasi tuotetaan asiakaslähtöisesti?
2. Mittaatteko asiakkaan kokemaa arvoa?
    i. Jos kyllä: Mitä mittareita ja KPI-lukuja käytätte? Koetko että mittarit tukevat arvon yhteisluontia?
    ii. Jos ei: Oletteko miettineet alkaneet mittaamaan asiakkaan kokemaa arvoa?

V. ITIL 4 -viitekehyksen hyödyt

1. Mitä uusia praktiikkoja ITIL 4:n käyttöönotto on tuonut organisaatioosi?
2. Miten koet ITIL 4 -viitekehyksen yleisesti?

3. Ovatko uudet praktiikat vaikuttaneet palvelun arvon yhteisluontiin positiivisesti tai negatiivisesti?
4. Kuinka koet että IT-palvelutuotanto suoriutuu yleisesti organisaatiossasi?

Lisäksi: Mitä tulevaisuuden suunnitelmia teillä on IT-palvelutuotannon, ITIL:n ja arvon yhteisluonnin suhteen?