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Karri Mikkonen

Exploring the Systemic Value for Customer in Integrated ICT Offerings

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ABSTRACT

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Keywords: integrated offering, value creation, systemic value for customer, systemic consistency, goal region, value of time

An individual in the modern world faces increasing complexity in the areas of digital computing, communication, and entertainment. Companies can reduce that customer complexity by offering the majority of their products and services all together, as an integrated whole. The first part of this research explores an integrated ICT offering approach in which a firm integrates products and services, exploring it particularly from the customer's perspective observing the value creation at the general offering level. In ICT, as products and services can be seen as personal tools to manage an increasing complexity of content, information, communication, and general level customer value, increasing the convenience and ease-of-use at the general offering level can be expected to play a significant role in customer value propositions in future offerings. The significance of that role depends upon value preferences of customer segments.

From a customer's perspective, an integrated ICT offering should appear as one consistent system to the customer, creating then general level customer value. This dissertation suggests that integration of an ICT offering creates customer value at the general, systemic level. When the existence of general level customer value creation was revealed in a Quad Play case study a and cross-sectional survey on Advanced Multi-Play (N=2507), both revealing the convenience and ease-of-use as main general level customer value attributes for interest and willingness to pay, the focus of this research turned into the customer value creation mechanism itself.

In the second part of the research, case studies on Apple portfolio and the Advanced Multi-Play concept suggested that the concept of systemic consistency, and integrated features and services shared between the offering components all function as sources of general level customer value creation. The descriptive theory building continued by introducing the concept of Goal Region, and discussed the negative value of waiting at the Pre-Goal Region phase. That negative value of expected waiting is suggested to be a source, which can be turned to positive value by systemic consistency at each Goal Transition phase. Based on those concepts, a definition and a model for creating the Systemic Value for Customer was built based on customer value typologies from marketing and consumer research.

The comparative study on the same data (N=2507) showed how the observed willingness to pay for proposed integrated ICT offerings increased as the estimated expenditure increased among high expenditure customers, who were assumed to be heavy users with an increasing number of Goal Region tasks. This result was contradicted by showing the increasing importance for discounts in the case of the plain Quad Play bundle for the same sample. From a descriptive theory building perspective, results supported the theory as a satisfactory end state for this exploratory research, suggesting the importance of normative future research. Finally, the validity, reliability, and generalizability of the research were assessed.

TIIVISTELMÄ

Toimiessaan digitaalisessa ympäristössä ihminen kohtaa jatkuvasti kasvavan monimutkaisuuden. Tietokoneiden ja tietoliikennelaitteiden ja -palvelujen käyttö sekä digitaalisesta viihteestä nauttiminen edellyttää muutoksen mukana pysymistä ja on usein omasta aktiivisuudesta kiinni. Yritykset voivat helpottaa tätä monimutkaisuutta tarjoamalla ratkaisuja joissa useampi asiakkaan käyttämä palvelu yhdistetään tavalla, joka helpottaa omien tehtävien suorittamista ja digitaalisesta viihteestä nauttimista.

Tämän tutkimuksen ensimmäinen, ilmiötä kuvaileva osa, tutkii millä tavalla eri digitaalisten palveluiden yhdistäminen voisi tuottaa asiakkaalle kokonaistason lisäarvoa monimutkaisuuden paremman hallinnan kautta. Tietoliikennepalveluja katsotaan työkalunäkökulmasta, jossa ihminen hallitsee monimutkaista ympäristöään systeemillä, joka tuottaa lisämukavuutta riippuen kunkin käyttäjän tarpeista. Voidaan olettaa että kokonaistason lisäarvon tärkeys kasvaa, koska ympäristön monimutkaisuus kasvaa. Käyttäjän kannalta tämän käytössä olevan systeemin, erilaisista digitaalisista laitteista ja palveluista koostuvan kokonaisuuden, tulisi näyttäytyä nimenomaan yhtenä samankaltaisena systeeminä, jonka eri käyttötarkoituksiin suunnitellut osat vaatisivat mahdollisimman vähän muistamista ja uudelleenoppimista käyttäjältä.

Tässä väitöskirjassa väitetään että kuvattu käyttäjän tavoitteiden kautta tapahtuva integrointi tuottaa lisäarvoa, tavalla joka on luonteeltaan systeeminen, kokonaistason tapahtuma. Tehty Quad Play tapaustutkimus paljasti että kokonaistason mukavuuskokemus ja helppokäyttöisyys ovat yhtä merkittäviä arvoattribuutteja kuin hinta. Tämä herätti kysymyksen voiko lisäämällä integroituja ominaisuuksia lisätä edelleen mukavuutta ja kasvattaa myös maksuhalukkuutta. Tehty Advanced Multiplay-tutkimus (N=2507) vahvisti tämän ja näin heräsi kysymys siitä miten tämän lisäarvo muodostuu käyttäjän kokemuksessa.

Tutkimuksen toisessa, teoriaa rakentavassa osassa, tehtyjen Applen tuoteperheen ja Advanced Multiplay konseptin asiakasarvon muodostumista kartoittavien tapaustutkimusten perusteella systeemisen konsistenssin, kokonaistason yhteneväisyyden, ehdotettiin muodostavan kokonaistason lisäarvoa kokemustasolla. Kuvailevan teorian rakentaminen jatkui esittelemällä tavoitealue-konsepti, jossa koettu odottaminen on vähemmän häiritsevää kuin odottaminen ennen tavoitealuetta. Jos ihmisellä on paljon erilaisia tehtäviä, ja edelleen tavoitealueita, hän arvostaa hyviä kokonaisuuksia jotka poistavat turhaa odottamista ja kognitiivista rasitetta kun hän siirtyy käyttämään toista työkalua integroidussa tuote- ja palvelukokonaisuudessa. Näistä konsepteista rakentui edelleen systeemistä asiakasarvon syntyä kuvaava SVC-malli, mikä liitettiin aikaisempaan teoriakeskusteluun markkinoinnin ja kuluttajatutkimuksen saralta.

Tästä mallista voidaan olettaa että jos ihmisellä on paljon erilaisia tehtäviä ja aikapaine, on todennäköistä että haluaa sitä varten yhteneväisen työkalukokonaisuuden. Lisäksi oletettiin että paljon maksavalla asiakkaalla on enemmän tehtäviä kuin vähemmän maksavalla. Tehty vertaileva tutkimus pohjautuen aikaisempaan dataan näytti kuinka vastaajien arvioiman nykykulutuksen ja AMP-maksuhalukkuuden välillä on selvä yhteys, vaikka tällä datalla ei suoraa todistusta saakaan. Lisäksi näytettiin että asiakkaat haluavat pelkästä tuotepaketista selkeän alennuksen, mikä on integrointiin verrattuna selkeästi erilainen tulos. Kuvailevan tutkimuksen kannalta tulokset tukevat selkeästi huomioita ja antavat aiheen ilmiötä määrittelevälle jatkotutkimukselle. Lopuksi, tutkimuksen luotettavuus, varmuus ja yleistettävyys keskusteltiin.

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After joining the faculty during the summer of 2009, I have learned how to evaluate and to treat different sources of information, how to combine and not to combine theories, how to formulate research questions, how to design a research project, how to get funding, how to find the right people in research and in business, and how to design and run surveys, how to interpret the data, and even how to program and compare structural equation models. I was lucky to have a talented colleague as Henri Suur-Inkeroinen, who opened the principal rules for building models and quickly catalyzed the making the first draft model.

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5.5.2011, Pirkkala

Karri Mikkonen

ABBREVIATIONS

AHP	Analytical Hierarchy Process
AMP	Advanced Multi-Play
BFA	Bachelor of Fine Arts
BSS	Business Support Systems
CAPEX	Capital Expenditure
CVA	Customer Value Audit
GTE	Goal Transition Effort
ICT	Information and Communication Technology
IP	Internet protocol
IPTV	Internet protocol based Television
IT	Information Technology
OEM	Original Equipment Manufacturer
OPEX	Operational expenditure
OSS	Operations Support Systems
PGR	Pre-Goal Region
QFD	Quality Function Deployment method
R&D	Research and Development
SSO	Single-Sign-On
SVC	Systemic Value for Customer
TSR	Task-Set Reconfiguration
TUT	Tampere University of Technology
VC	Value for Customer
VoD	Video on Demand
VoIP	Voice over IP protocol

CONTENTS

LIST OF ORIGINAL PUBLICATIONS

Part One: Exploring customer value creation of integrated ICT offering

I Mikkonen K., Hallikas J., Pynnönen M. (2008) Connecting customer requirements with the multi-play business model, *Journal of Telecommunications Management, 1*, 2, 177-188

II Mikkonen K., Seppänen M., Pynnönen M., Lättilä L., Hallikas J. (2009) Customer Value Driven Process for Development of Integrated Offerings, ISPIM 2009, Vienna, Austria

III Hallikas J., Pynnönen M., Savolainen P., Mikkonen K. (2008) Ubiquitous communication - where is the value created in multi-play value network? Chapter in a book: Mobile and Ubiquitous Commerce: *Advanced E-Business Methods, Advances in Electronic Business* (AEBUS) Book Series, Eldon Li

Part Two: Building descriptive theory of creation of systemic value for customer

IV Mikkonen K., Seppänen M., Pynnönen M. (2009) Building Theory for Systemic Value Creation: Case Apple, ECEI 2009, Antwerp, Belgium

V Mikkonen K., Seppänen M., Pynnönen M. (2009) Building Theory for Creation of Systemic Value for Customer: Case Integrated ICT Offering, EBRF 2009, Jyväskylä, Finland

VI Mikkonen K. (2011) Exploring the Creation of Systemic Value for Customer in Advanced Multi-Play, *Telecommunications Policy, 35*, 185-201

VII Mikkonen K. (2010) Modeling the Creation of Systemic Value for Customer: Case Advanced Multi-Play, IAMOT 2010, Cairo, Egypt

The author has made a substantial contribution for each publication in three aspects of authoring (Perry, Carson, Gilmore, 2003), listed below in table 1.

Paper	Conception and design, or analysis and interpretation of data	Drafting the article or revising it critically for important intellectual content	Final approval of the version to be published
I	Conception and design, and analysis and interpretation of data	Drafting the article	X
II	Conception and design, and analysis and interpretation of data	Drafting the article	X
III	Analysis and interpretation of data	Revising it critically for important intellectual content	X
IV	Conception and design, and analysis and interpretation of data	Drafting the article	X
V	Conception and design, and analysis and interpretation of data	Drafting the article	X
VI	Conception and design, and interpretation of data analysis	Drafting the article	X
VII	Conception and design, and analysis and interpretation of data	Drafting the article	X

DISSERTATION PART I: INTRODUCTORY ESSAY

1. INTRODUCTION

The phenomenon under investigation is customer value creation in an integrated ICT offering (see Abbreviations at page 5) using an Advanced Multi-Play as an example. This dissertation argues that consistent integration of systemic features and services creates value for the customer. As a key finding, a descriptive theory of creation of Systemic Value for Customer (SVC) is proposed. The term "customer value" is used here to mean the value derived from the product or service (Woodall, 2003), and the customer's value experience in particular (Holbrook, 1999). This can be distinguished from perspectives such as customer value in Customer Relationship Management (Payne and Frow, 2005), Utility Value in Microeconomics (Varian, 2010), and Customer Lifetime Value (Graf and Maas, 2008). In other words, customer value is discussed here as "received value," referring to the value customers actually experience through specific product-customer interactions (Woodruff, 1997).

Matured telecommunications markets in Western Europe have come to a phase where many existing services are being packaged together into bundles for only a particular customer segment; and both incumbent operators and new entrants such as cable TV firms offer these.

Traditionally, various kinds of subscription services have been the main source of revenue for telecom operators, and various kinds of devices have been the main source of revenue for ICT equipment vendors. This earnings logic is currently undergoing a major change. A particular service provider may be relegated to the role of a bulk data carrier operating in a commodity market, where the revenue received is based on the amount of data transported, rather than on the value of the service this transport enables (Li and Whalley, 2002). Major operators and equipment vendors try to diverge into areas of content and applications; some establish digital stores and service interfaces. They attempt to create more customer value by wider offerings, where several personal devices that interoperate within, are connected to digital services, Internet-based value-added services, and social networking services.

The next competitive step in the offering level, following the current introduction of basic bundles, is expected to be an introduction of more advanced and innovative bundles and integrated offerings, where new, advanced customer-centric features and services are integrated deeper into the communication platforms. Managing the step introduces an innovation challenge with regard to the customer focus, especially in the area of customer value creation. This step can include the re-invention of the concept of customer value i.e. the provider transforming the value customer receives (Govindarajan and Gupta, 2001). From the service providers' viewpoint, this option for re-invention means that steps should be managed more from the customer value creation perspective than solely from a firm efficiency view. This will probably mean a new kind of orchestration of value network beyond company boundaries, taking external partners more deeply into that value creating network. This market development sets the challenge to increase the understanding of the end-customer requirements for an integrated ICT offering, although not within the scope of this research.

1.1 Conceptual groundings

The concept of value has been used in many practical and theoretical contexts since antiquity, having many meanings depending on the context (Ramirez, 1999). The term customer value is derived here from two interconnected customer perspectives: Value for the Customer (VC), especially as derived value from the product or service when used (Derived VC) (Woodall, 2003), and from the perspective of the customer's value experience in actual usage (Holbrook, 1999). Its first conceptual roots are in marketing, and second, in consumer research. This dual choice was made to assure the theoretical flexibility, and thus, to secure both the exploration and the theory building phases of this research and for the purposes of expansion of future research as well. These approaches are both pointing at that very moment of individual experience where a customer receives value (Woodruff, 1997), which is the theoretical focus (particularly, in the theory building part of this research). Woodall (2003) points out the focus area in marketing discussions, and Holbrook (1999) argues the content of experience in that area, and these approaches are synthesized for analysis and theory building.

Customer value attributes serve here as abstractions for characteristics of customer value, based on relatively stable individual values, referring here to the attributes that the customer attaches from an individual perspective to product attributes. Product attributes refer here to the attributes a provider adds to products and services attempting to match customer value attributes. Preferences are conceived here as an individual's attitude towards a set of objects, typically reflected in an explicit decision-making process (Lichtenstein and Slovic, 2006). Term value preference is used here to describe the customer value attributes projected by the customer to a set of product attributes of a product used, as criteria for evaluation and selection. When thinking of a bundle, (referred to here as combination of products and services which a provider intends to sell together with a certain total price), early results indicate the mechanism of customer value creation is different, including value preference for general level customer value attributes (Paper I). In terms of the general level, a customer value attribute refers to an attribute the customer uses to interpret the value of a bundle as a whole e.g. general level convenience, or general level ease-of-use, provided to the customer.

The concept of integrated offering used in this thesis can be both an integrated solution and an integrated portfolio consisting of products and services that are combined to work well together, covering the customer's main needs for a specific problem solving domain. In that level of integration, it can be referred to as an offering system. To a service provider considering offering bundles, integrated offerings, or integrated solutions, and trying to transform the value the customer receives, the transformation presents a challenge to the thorough understanding of a customer's value creation. In this dissertation, Quad Play (Quadruple Play) and Multi Play (Multiple Play) refer to a bundle of telecommunication services consisting (at least) of mobile and broadband subscriptions, IP-based television (IPTV), and Fixed Telephony (as VoIP). An Advanced Integrated Offering, Advanced Multi-Play refers to an enhanced Quad Play or Multi-Play with added new integrated features and services, many of these being deeply integrated into the service and production platform, and shared between two or more devices and access methods. This concept type, as an integrated ICT offering, was a test concept in a conducted survey.

Tuli, Kohli and Bharadwaj (2007, p. 7) define integration as follows: "integration entails designing, modifying, or selecting goods and services that work well with one another." As a service provider integrates component subsystems into one system and ensures that the subsystems function well together as a system, all suggested sources of value, by Smith and Colgate (2007), serve as potential value sources to be integrated. However, as described above, the customer attributes defining integration benefits to the end customer as "working well together," or "fitting together," would suggest the functional/instrumental value as the most prominent

source of general level customer value creation. In the concept of Integrated ICT Offering, the term integration refers to connecting the products and services of an ICT offering to function together from a customer usage perspective, providing the integration value to the customer.

A recent field study using the Analytical Hierarchy Process methodology (Saaty, 2008) on customer value preferences for Quad Play customer value attributes shows that general-level ease of use and convenience are observed as significant attributes as the pure price of the offering (Paper I). This study was the first indication of the possibility of a change (Flint and Woodruff, 2001) or transformation in customer value in mature ICT markets, i.e. signaling that, e.g. by increasing the value of general level customer value attributes; it would be possible to generate growth.

The creation of customer value has long been recognized as a central concept in marketing. From the customer's perspective, customer value can be seen as the relationship between what the customer gets as a benefit with what they give in terms of costs and sacrifices (Zeithaml, 1988). Increasing the benefits side requires deeper insight in the very process where the value is created, as well as who the customer is, the motivation, orientation, and nature of the value assessment (Holbrook, 2005). Smith and Colgate (2007) have conducted a comprehensive literature review in order to create a customer value creation framework, reviewing existing discussions about customer value creation in the context of a single product or service, which identifies four major types of value that organizations can create: functional/instrumental value, experiential/hedonistic value, symbolic/expressive value, and cost/sacrifice value. These types can be understood as an example of the main classes of customer value attributes. The framework also identifies five major sources of value: information, products, interactions, environment, and ownership, which are associated with central value-chain processes. Here, we observe customer value creation happening in a usage situation, in limited temporal space, where the user's value attributes are derived (or not) from product attributes that are provided. This situation can be conceptualized as a customer deriving value as the benefits are derived from consumption-related experience, and presented such that independence of, or at least prevalence over, any sense of associated sacrifice is implied. Thus, it can be derived rather than computed, and is essentially outcome oriented (Woodall, 2003). The value creation from the customer perspective is discussed here as this type of value creation, embedded in either situations or practice (Korkman, 2006).

The general level of customer value that emerges from integration, and is derived integrated offering usage, is the focus of this research. In particular, its existence and the mechanism of value creation from customer's perspective are studied. The value type that describes the customer value creation at the general level from the customer's perspective is constructed and defined in the theory building part as the Systemic Value for Customer (SVC).

1.2 Integration increasing customer value

Many industry experts and scholars (e.g. Hara et al., 2005; Okamoto and Reynolds, 2006; Pedersen et al., 2007) expect the integration of different access and network services in the ICT industry to add value for customers in the near future; most highlight the importance of becoming an IP-network as an enabler.

Multiplay offerings are seen to represent the first stage in a two-part evolution of converged ICT service delivery. Whereas the first stage has seen video, voice, and data services consolidated as integrated offerings, the second stage is regarded to include consolidation of access platforms on one IP network, allowing users to seamlessly access content while moving over a variety of wired and wireless networks (Okamoto and Reynolds, 2006). As the technical environment becomes

increasingly IP-based, the amount of peer-to-peer services and the number of content offerings can be expected to increase (Hara et al., 2005).

> "Converged offerings, starting with a seamless quad play offering, may represent the next wave of the communications evolution. With respect to growth, the multi play market present large growth potential in terms of increased market share. The more services migrate to an integrated IP-platform, the more multi play services will seem as a logical way to approach customers." (Pedersen et al., 2007, p 91, 94, and 97-98)

The customer profiles and the value preferences for Multi-Play have been preliminarily studied and provider side value have already been discussed as well (Pedersen et al., 2007; Paper I, II, III), and the findings seem to add value for both end-customers and providers. Customers are estimated to benefit already by, e.g. paying for all of their communication services with one bill (Okamoto and Reynolds, 2006). At the same time, the end-users' requirements for personalization and simplicity are becoming the norm rather than the exception, which requires an operator who wishes to be a service mediary[1] to end customers in the seamless[2] service and content delivery, to ensure that operator possesses a rich and accurate understanding about customer value creation of both the existing and potential customers (Hara et al., 2005). From the operator's perspective, multiple-play offerings can potentially consolidate different service processes, e.g. billing service, and increase cost efficiency. Customers can benefit from multiple-play when operators will leverage their unified IP networks to introduce new and innovative services (Okamoto and Reynolds, 2006).

Okamoto and Reynolds (2006) also suggest that if customers subscribe to more than one service, their responsiveness to competitive offers from other providers may also be diminished. They also see the *branding economies of scale* as a provider side benefit, as advertisements can cover an entire bundle of services, and companies can place more emphasis on building brand recognition than explaining their products' characteristics (Okamoto and Reynolds, 2006). New telecommunication services can be categorized as "experience goods" where quality is difficult to gauge before purchase. Therefore, operators who already have an existing relationship and quality judgment from customers have an advantage when offering new services alongside a lesser-known competitor. This advantage allows companies with known brands to either sell their services at a premium or reduce the amount spent on marketing some specific characteristics of the services. As long as the service levels are acceptable, all new services offered by the known brand can have an advantage over competitors. If operators can move all their services onto IP-based network, transmitting digital video, voice, and data over IP in one network can drastically reduce network cost (Okamoto and Reynolds, 2006).

From the analysis of general level customer value attributes, it might be possible to find new types of value for the customer, and thus, to find growth opportunities for an operator and equipment vendor. Only after gaining a better understanding of the dynamics and the potential in general level customer value creation in respective providers' customer bases, a strategic conclusion, with managed risk, may be drawn for each provider.

The most typical reasoning for bundling is that customers would, nevertheless, buy them all, but not necessarily from the same provider. One type of reasoning is related to the physical location

[1] "Mediary" refers to a business role consisting of marketing, managing, and delivering third party services to end customers, by owning a digital delivery channel (digital store, service interface)

[2] "Seamless" in the telecommunications context refers to having a network connection without losing access to the network, or network service continuing to function while changing the device or network coverage.

or type of activity, e.g. home or mobile work. In the Nordic telecom markets, bundles were first created to reduce churn and gain better lock-in in some of the most important segments. Bundling products and services does not necessarily decrease the freedom of choice from the customer's perspective; it may improve customer satisfaction because of the frustration a customer feels due to excessive choice or variety. Setting the right degree of customization and selecting the customization options are crucial for mass customization success, and progressing in this manner requires understanding customer value creation (Piller and Kumar, 2006).

As mobile and fixed telephony and broadband are independent technology driven areas, and often also separate business areas as well, there are either very few integrated back-end elements, or none at all. Back-end systems (e.g., for billing) are often access technology specific, and the price of the bundle must cover many different billing systems, and potentially, an extra one for creating the final single bill sent to the customer. In sum, it can be estimated that the following provider benefits can tempt providers to move towards more integrated offerings:

1) Leveraging customer potential regarding the creation of customer value by integration
2) Branding economies of scale
3) Reduced customer churn: basic bundling will already enhance subscriber stickiness
4) OPEX and CAPEX savings: common service and support elements can be integrated horizontally and delivered through one IP-network

The list above contains several expected motivational reasons for integration by a provider, which activity depends on many other pragmatic things, such as: market maturity, the existing organization and governance model, main management themes, maturity of strategic thinking in the company, technological readiness, and the readiness of OSS and BSS systems. Nevertheless, to achieve these benefits, a provider needs to understand and anticipate customer value creation for the company's products and services when sold together as a whole.

If defining integration benefits as integration entails designing, modifying, or selecting goods and services that work well with one another (Tuli et al., 2007), this can be achieved either before or after the product development process, or as a selection between different providers. A particular example of an integrated ICT offering explored in this study is referred to as the Advanced Multi-Play concept, which integrates new features and services to individuals and families, through both mobile and fixed access networks. It integrates many services that are currently offered separately, e.g. telephony (both fixed and mobile), broadband, IPTV, VoD, e-mail, security, and messaging applications. A detailed exploration of which of these offering components and integrated features and services play important roles in customers' lives in the future formed the focus for the first part of research. It was reasoned that those components could be linked to customer value attributes and further to general level customer value attribute classes. Therefore, in order to explore customer value creation a holistic picture must be created.

1.3 Motivation for the research

We can assume that when moving from single or bundled products and services to integrated offerings there will be a difference in the creation of customer value. The integration can be seen as a development towards a system.

Adding those scholarly approaches discussed in conceptual groundings 1.1, only a few scholars approach value creation from a systemic point of view. When defining service as the application of competencies (knowledge and skills) by one entity for the benefit of another, the definition implies that it is created collaboratively in interactive configurations of mutual exchange, i.e. in

service systems (Vargo, Maglio, and Akaka, 2008). Their approach focuses on service system value creation, but here it is focused on the offerings as systems consisting of both services and physical products. I this research, and taking an ICT perspective, products and services would then be used as tools for communication, content, and computing, and when taking a general perspective, both products and services would be used as tools for solving some other problem domain, and taking a customer perspective initially in both. The ICT context was used especially in an exploratory phase of this research, while a more general view is taken in the section on theory building. However, the cases used to discuss the SVC concept both concern the ICT sector. Chapter 3 includes a more detailed discussion of theoretical backgrounds.

In this study, besides more general management concepts as e.g. value constellation (Normann and Ramirez 1993), complementarities (Milgrom and Roberts, 1995; Brandenburger and Nalebuff, 1996; Amit and Zott, 2001), value externalities in networked services (Thorbjörnsen, Pedersen, and Nysveen, 2007) and service systems (Vargo, Maglio, and Akaka, 2008), no comprehensive theoretical models were found to explain how value is specifically created for the customer in an actual experience when using the multiple elements of an offering. This is when two or more such elements (products and services) are used either sequentially (consecutively) or in parallel in an individual goal achievement context. None of concepts mentioned indicate how value is created from the user's point of view, in the context of integration. This constitutes the main research problem as the existing research has typically been conducted from the perspective of single product or service or with one subject observing the value of one object. We need a framework where one subject observes the value created through the interplay of various objects, related to subject's own goal achievement.

It is the level of customization and integration that really positions solutions above products or services, or bundles of products and services (Johansson, Krishnamurthy, and Schlissberg, 2003). When it is very important to combine the right products and services (parts of the system) for the right customers, and to ensure that those and integrated applications create customer value, the offering system itself needs to be defined in a way that creates additional value as a system. If the system itself can vary from the customer value creation perspective, it can then be one additional source in the creation of customer value in the context of integrated offerings.

This is clearly a research gap. Therefore, a novel framework better suited to the concerns of marketing and consumer research for integrated offerings is required, and one that focuses on the creation of customer value experiences from the general, holistic offering perspective, while the customer achieves goals in real life and works under the pressure of time.

Finding this mechanism and establishing the framework can offer significant competitive advantages. It is the level of customization and integration that really positions solutions above products or services, or bundles of products and services (Johansson, Krishnamurthy, and Schlissberg, 2003). Declaring the mechanism of the general level of customer value creation might enable a firm to predict the hidden customer potential, and then to create this value type by integrating old and new products and services, while obtaining a lead-time to differentiate them. Such a lead-time could allow a firm to beat its competitors to market with innovation (Woodruff, 1997).

As integrating products and services together to launch an integrated offering presents a serious risk, a study must be conducted on the topic of creation of customer value in the case of integrating products and services. Integration risks can be related to failures in customer satisfaction, economic investments in development, service platforms, commercial launches, cannibalization costs, and, quite importantly, to a failure of an operator harming the brand. None of these single risks is affordable.

2. RESEARCH DESIGN AND METHODOLOGY

This research on integrated ICT offerings, and particularly, on the general level value creation had two distinctive, yet interconnected parts. In the first part, the integrated ICT offering was explored in the form of the Advanced Multi-Play concept to determine customer value preferences connected to customer value attribute classes, integrated features, and services, as intrinsic attributes of an offering tested. The exploration ignited the second part, in which systemic value creation for the customer was studied through two cases, and then theoretically examined and described. Thus, the first part aimed at illustrating customer value creation in Advanced Multiplay, and the second part aimed at descriptive theory building to explain the creation of SVC (Systemic Value for Customer).

In the first part of the research, the Multi-Play business environment, including customer requirements on the Multi-Play business model (Paper I), customer value creation in Advanced Multi-Play (Paper II), and the Multi-Play value network as such (Paper III), were explored, both empirically (Papers I and II) and by theoretical investigation (Paper III). An explorative approach was chosen, as this rather industry specific phenomenon was academically less explored and the exploratory research approach leaves room for refocusing the research in case something significant is found. The phenomenon was studied using the value network approach, business model approach, and from a customer value perspective, conducting a customer value audit (CVA) (Paper I). The empirical methods that were used were an Analytical Hierarchy Process (AHP) (Paper I) and a large cross-sectional survey (Paper II).

As convenience and ease of use were found to be significant general level customer value attributes in Multi-Play, the second part of the research became an inductive attempt to propose a definition and a model describing general level value creation in the context of integrated offerings. The main objective of the research thus turned from understanding value creation in the context of integrated offerings to suggesting a theoretical starting point for further normative research, based on theoretical argumentation provided by the second part of this research.

> "The descriptive stage of theory building is a preliminary stage because researchers generally must pass through it before developing normative theory. The three steps researchers use to build descriptive theory are observation, categorization, and association." (Carlile and Christensen, 2005)

At the second, clearly inductive part of the research, an exploratory strategy was chosen again because the research focuses on the novel area of customer creation. However, it was approached in a new way, aiming to build a descriptive theory for general level value creation at the level of an integrated ICT offering.

> "In a qualitative study, the inquirer may generate a theory during a study and place it at the end of a project, such as in grounded theory." (Creswell, 2003, p 119)

I do not contend here that the descriptive theory built and proposed in this thesis and in Papers IV, V, VI and VII was repeatedly tested or that it is widely accepted or is applicable to make predictions about natural phenomena. But as it can describe a set of principles explaining a phenomenon through observation, categorization, and association, it can be argued to be a theory in a descriptive sense, as proposed by Christensen, (2006).

One case example of an actual company capable of providing a complete ecosystem of high-end products and services was used as a single-case study (IV), in order to build the first propositions. Advanced Multi-Play concept was revisited as a second case study, and next steps for building a theory were taken (V). A comparative study was performed to see if early propositions would be falsified by the data from the cross-sectional survey (VI). Finally, the consumer value typology of

Holbrook (1996) was re-theorized to explain a systemic perspective as well, a model was developed and proposed, and the validity of definitions was discussed (VII). The theory building continued in papers VI and VII, and concluded in an introductory essay by proposing a definition and a model for a SVC, and evaluating what SVC modeling and the SVC definition have explained. Finally, the question of how these propositions, definitions, and models, add a new way of explaining the phenomenon is discussed with the possible applications.

In an AHP study on the Quad Play concept, the general level ease-of-use and convenience as value attributes were observed as equally stronger value components than the price (Pynnönen and Hallikas, 2008; Paper I). This case study was the first indication for the possibility for a change on customer value (Flint and Woodruff, 2001) in mature ICT markets. In this kind of opportunity type increasing the impact of them by means of product development and marketing communication could capture the potential of latent value of those two general level value attributes. This new insight led to the important business driven goal and strategic question: If the new integrated features and services are added in the Quad Play offering, increasing ease-of-use and convenience as general level customer value attributes, does the customer's willingness to pay increase?

A new concept of enhanced Quad Play is further referred to here as an Advanced Multi-Play (AMP). The exploratory business research at the first part of the research aimed to clarify if AMP could be used as a growth concept (Papers I and II), including questions regarding how the offering level value creation could be initially studied, by which processes and methods (Paper II), and what resources and capabilities would be necessary in the business model (Paper III). The first part of research addressed the value network and business model issues, as the main purpose of the research in part one was to provide well-covered investigation to clarify a strategic option for an operator (Paper II).

At the beginning of the research, the first research question was formulated as follows:

RQ1: Does the integration of an ICT offering create value for customers?

The first research question was divided into research objectives and respective research questions in first part of the research. A few sub-ordinate questions were derived from the first research question: what are the general level customer value attributes for an integrated ICT offering?; which of those general level customer value attributes are regarded more important than others?; which could be the most important resources in contrast to customer value preferences in an integrated ICT offering?

The research continued with the web-survey, testing possible general level customer value attributes in the Advanced Multi-Play concept by introducing various advanced functionalities placed in one of the 6 general level customer value attribute classes sent to real customers, as well as discussing the created customer value-driven process and validating the process and results (Paper II). After a cross-sectional survey on the first question that explored it through a proposed virtual integrated ICT offering, an Advanced Multi-Play concept, it became obvious that customers do actually observe and perceive an integrated ICT offering as an entity, and some customers do observe added general level customer value (Paper II). The results suggested the existence of general level convenience as a value attribute, resulting from deeper integration of an ICT offering (Paper II). Still in the exploratory phase, the value network issues were revisited with a new understanding provided by the survey results (Paper III). The anomaly related to an increasing ratio of willingness to pay and increasing importance stated for systemic features among high expenditure classes led the research into the second phase, seeking theoretical explanations for these findings, and building a descriptive theory and propositional models.

Findings in the first part ignited the formulation of the second main research question and produced related research objectives. The research focus changed to exploration and theorization of general level customer value creation, referred to here as Systemic Value for Customer (SVC), as it had the potential to add the largest amount of new insights and original contributions to the scientific discussion in the area of customer value. In the second part of the research, the motivation and focus of the research turned to building a theoretical model and defining the SVC, which would then enable normative research designs for future research. SVC was first thought of as a "mechanism" that would produce value "through" general level value attributes, e.g. convenience, emerging from an interplay between the components of an offering (system and its parts), thus not of the creation of value from single parts, nor as the sum of all parts together, and apart from any other kind of externalities. This new research target was established due to witnessing strategic benefits emerging from the good control of the SVC construct in developing successful integrated business concepts in the future. Special weight was put in finding new theoretical insights, formulating propositions, and defining key concepts, which can describe and distinguish SVC and the relations between the key concepts.

Thus, after finding a new, systemic level, a task domain in the area of customer value creation, and a significant research problem in that task domain, it was possible to formulate the second research question:

RQ2: What creates systemic value for customers?

This second main research question raises further themes to discuss in order to describe SVC creation. These key areas to discuss are e.g., theoretical concepts which might be needed to defining SVC; the description of customer context related to deriving SVC; the elements which would be included in a theoretical model for the SVC creation; and also: the nature of the linkages between a model's key concepts. The logic behind this approach is that if these above areas are discussed with formulating insightful descriptions and definitions, then the RQ2 is answered at the level necessary for a descriptive research.

Research questions guided the literature review, research design, data collection, helped in analyzing and compiling the data, and finally, prevented the researcher from going in unnecessary directions (Bryman and Bell, 2007). By conducting a theoretical examination of SVC creation in Apple and Advanced Multi-Play case studies, new concepts were formulated, and promising concepts were adapted for further research (Papers IV and V). The peculiar response behavior of high expenditure classes was discussed in the light of promising concepts that were found. (Paper VI). The research continued by proposing hypotheses derived from SVC-theory, and planning the comparative analysis on the same cross-sectional survey data used earlier to disprove those hypotheses. The comparative analysis was conducted (N=2507), and the results indicated that the cause for the anomaly might be based on observed creation of added value at the systemic level among the high expenditure classes (Paper VI). The theory building part of the research ended up defining a propositional model for SVC creation (Paper VII), grounding the theoretical addition to customer value creation discussion by re-theorizing it based on the consumer value typology of Holbrook (1996) (Paper VII), and to the Value for Customer discussion by adding it as a component of Derived VC summing to Net VC (Woodall, 2003).

2.1 Research design

This combined exploratory and theory building research approach seeks to provide descriptive insights and comprehension about the concept of integrated ICT offerings, especially from the perspective of customer value creation. It does not draw any definitive conclusions. An exploratory research approach was chosen because a problem was not clearly defined initially. In this case, the general level creation of customer value was observed in the cross-sectional survey (Paper II). An exploratory research approach made it easier to determine the best research design at the time, including the data collection method and selection of subjects.

Further, the quantitative approach in the form of a survey was conducted to reveal customer's value preferences on integrated features and services in future telecommunication concepts. The quantitative approach appeared to be a powerful approach, as it was possible to distinguish service usage attribute classes[1], representing individual values of the customers, into six respective classes (of general level customer value), and derive their respective demand potentials related to interest and willingness to pay. The empirical observations of field measurements were translated inductively into theoretical concepts through promising theories. Figure 4 below describes two phases of this exploratory research.

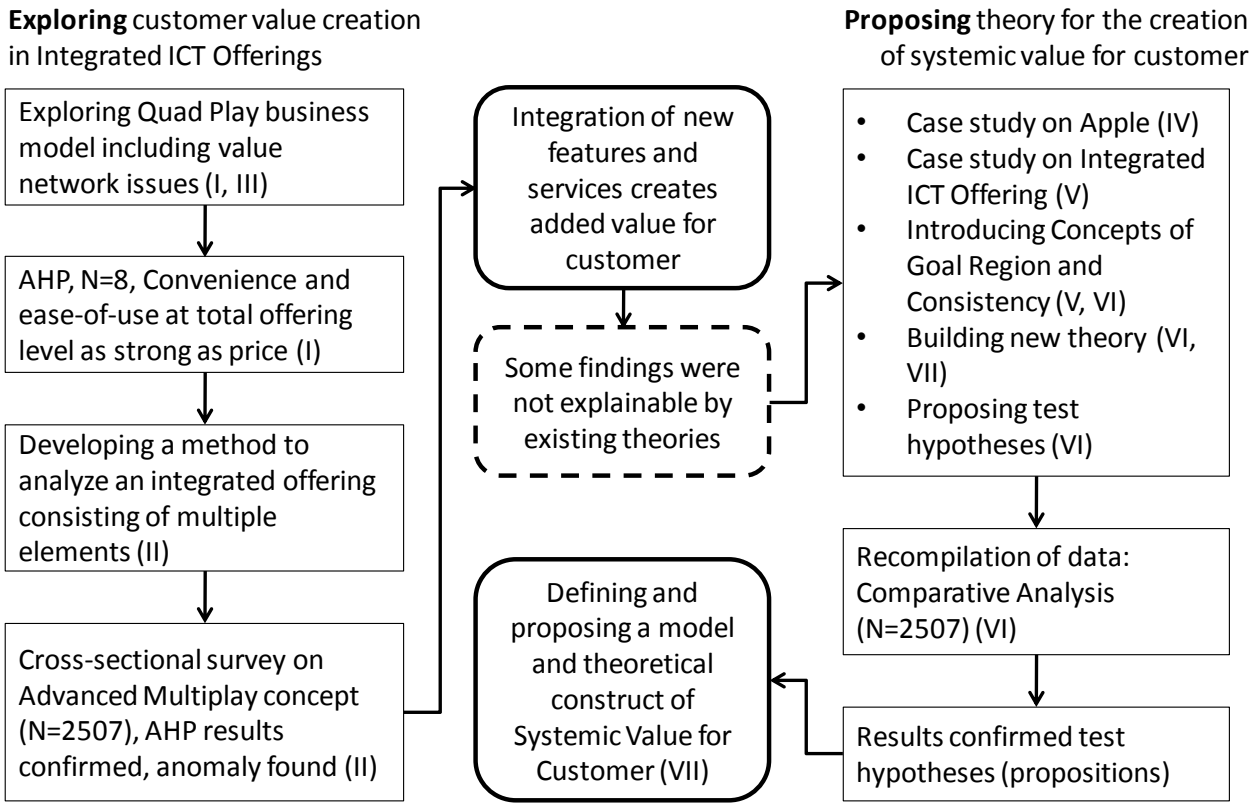

Figure 4: The path of exploratory research from various research perspectives to specific areas of customer value, continuing the exploratory path to theory building through a literature review, re-theorizing, and finally, defining and proposing a new SVC model and SVC definition.

[1] This term was used in the subject company for different customer value attributes, and here they were described as general level customer value attributes

The first research question (RQ1): "Does the integration of an ICT offering create value for customers?" and the second research question that emerged as a result (RQ2): "What creates systemic value for customers?" are divided into respective research objectives discussed by papers I-III and IV-VII (Figure 5), where arrows with broken line describe indirect contribution, and whole line direct contribution to research questions.

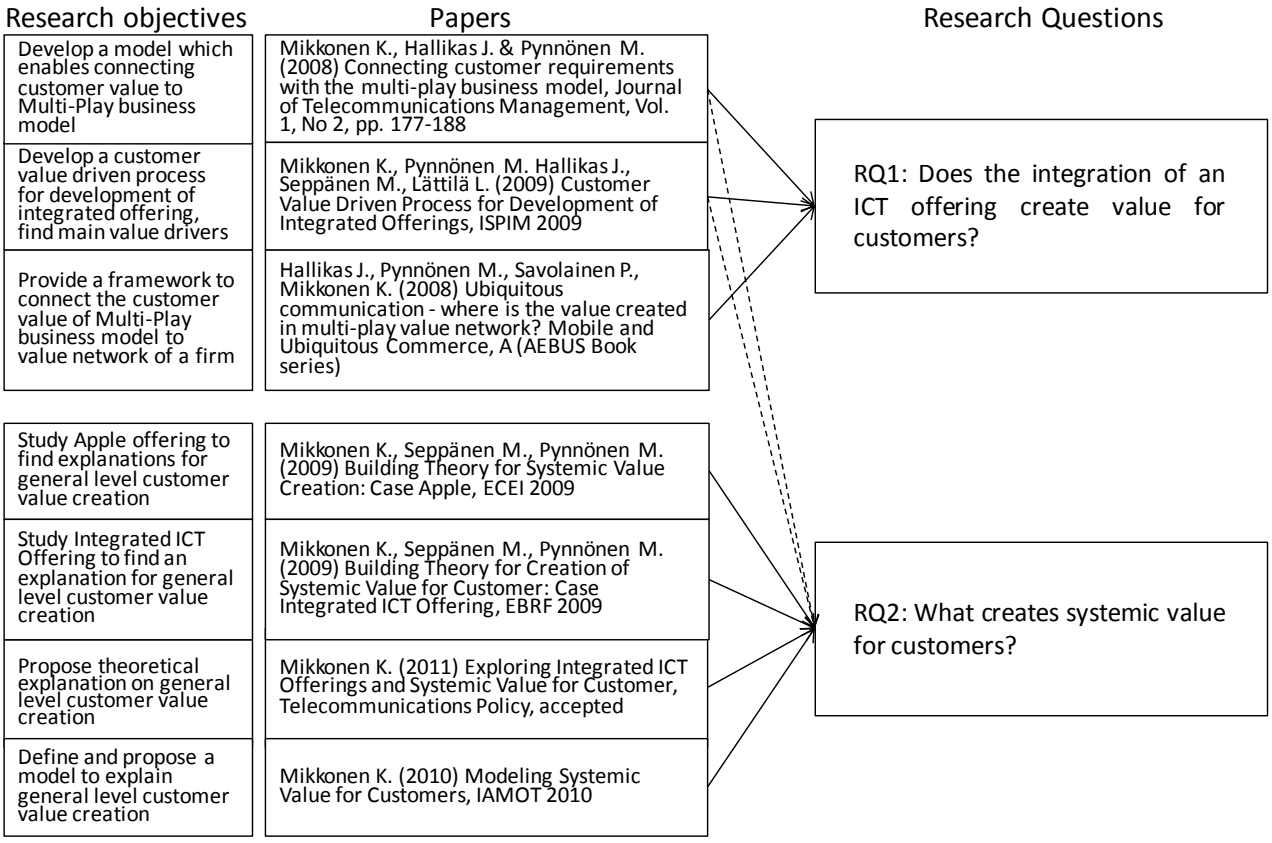

Figure 5: Research objectives, papers, and the research questions.

2.2 Research process

The research process can be viewed as a series of interlocked, and even simultaneous choices (McGrath, 1982). This mixed method research approach has two recognizable parts, where the second was initiated during the first. In mixed methods research, researchers may both test theories and generate them. Moreover, mixed methods research may contain a theoretical lens that guides the entire study (Creswell, 2003).

In this study, that theoretical lens was first implicitly, then explicitly, the general level creation of customer value. The customer value preferences studied in first part of the research were an implicit form of customer value attributes from a theoretical perspective, termed as preferences. As results suggested the general level creation of customer value, the research focus on customer value creation became explicit. The emphasis of the research process in the first part was to connect a new service offering concept with customer preferences. The challenge of a customer preference analysis, especially when the point of interest involves understanding the customer preferences for a new service, is typically the inherent uncertainty of customer priorities. The

process of developing a field study to measure customer value creation at the integrated offering level was conducted in the four phases shown in Figure 6.

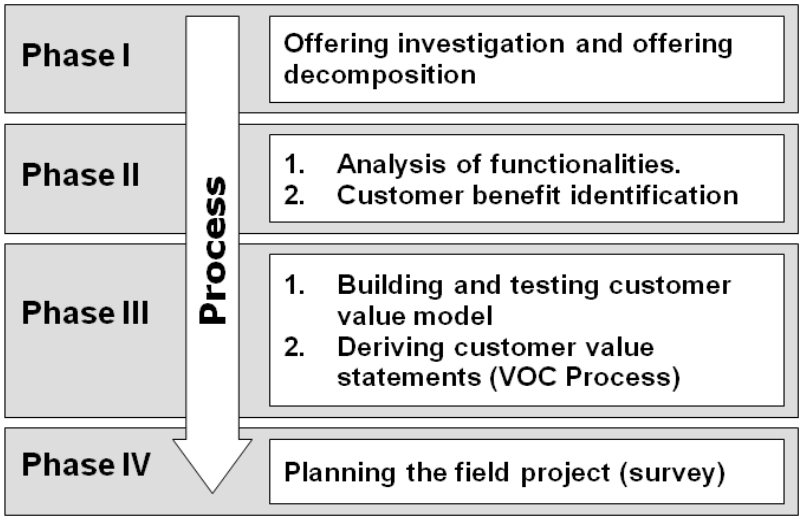

Figure 6: Description of the process in the first part of the research (Papers I and II).

Christensen (2006) suggest a process for building a theory, which includes the descriptive stage of theory building as a preliminary stage, because researchers must pass through this in order to develop a normative theory. Researchers who are building a descriptive theory proceed through three steps: observation, categorization, and association (Christensen, 2006). In the first step, researchers observe phenomena and carefully describe and measure what they see. The research process in the first phase started with observing and mapping the initial structure of the Quad Play service offering (Paper I). The second phase focused on the identification and categorization of service functionalities and customer requirements. In phase three, these customer values were translated into voice of the customer (VOC) statements, which were used to describe the benefit from usage as expressed by the user. The generated VOC statements were then used for building a customer value survey instrument, which was developed to measure the customer value elements. The web survey was differentiated from normal product surveys studying existing products by an introduction that emphasized its integration and novelty. Finally, the customer survey was conducted in order to collect quantified customer priorities and associate them with the customer value creation perspective (Paper II). The process for building a theory suggests that there are two sides to every lap around the theory-building pyramid: an inductive side and a deductive side (Christensen, 2006). In contrast to either/or debates about the virtues of deductive and inductive approaches to theory, this suggests that any complete cycle of theory building includes both (Christensen, 2006). This stage of research is depicted in Figure 7 as the base of a pyramid, because it is a necessary foundation for the work that follows. Without an insightful description to subsequently build upon, researchers can find themselves optimizing misleading concepts. Researchers in this step often develop abstractions from the messy detail of phenomena that we term as constructs. Advanced Multi-Play served as a construct during the first part of the research, followed by the construct of SVC in the second phase. Constructs help us to understand and visualize what the phenomena are, and how they operate (Christensen, 2006).

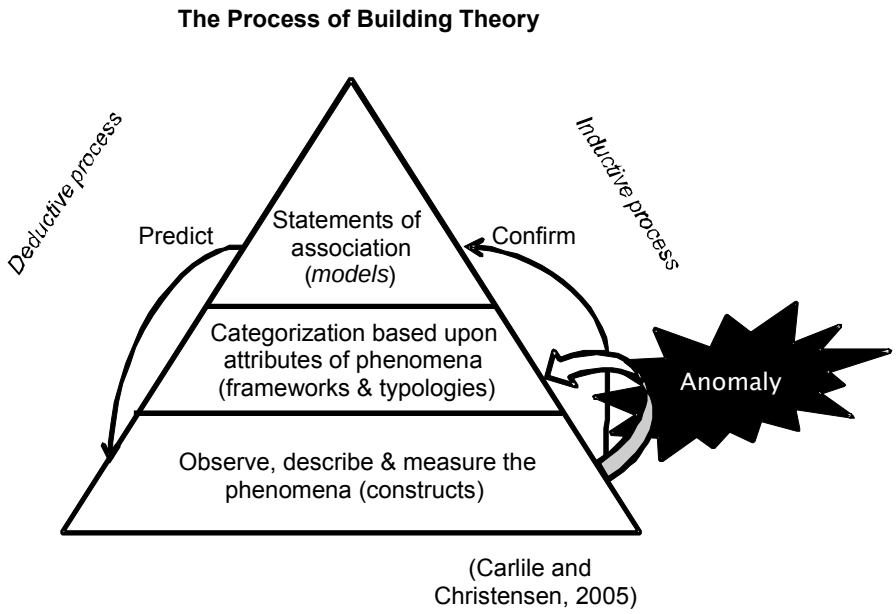

Figure 7: Process for building a theory (Carlile and Christensen, 2005).

With the phenomena observed and described, in the second stage, the researchers classify the phenomena into categories. In the descriptive stage of theory building, the classification schemes that scholars propose are typically defined by the attributes of the phenomena. Such categorization schemes attempt to simplify and organize the world in ways that highlight possibly consequential relationships between the phenomena and the outcomes of interest. In the third step, researchers explore the association between the category-defining attributes and the outcomes observed (Carlyle and Christensen, 2005).

The discovery of an anomaly presented an opportunity to revisit the categorization scheme in this research – to cut the data in a different way – so that the anomaly *and* the prior associations of attributes and outcomes can all be explained. This slicing the phenomena differently, and articulation of new associations, based on propositional hypotheses emerging from SVC model, and then recompiling the data, is reported in paper VI.

Theory can exist in variety of forms including descriptive. Descriptive theory proposed in this dissertation attempts to provide a description of what is happening in a situation where an individual is using an integrated offering for a goal achievement, and to reveal the components that exist in a situation (Rodgers, 2005). Components of SVC are elements of an encountered experience, where a person has several devices, services, and applications in use, and makes context dependent choices between them (paper VI).

Theories can be more loosely organized collections of concepts or constructs (Rodgers, 2005); such is the case with descriptive SVC-theory. SVC-theory intends to reveal the substance of a situation, yet without structured and proven linkage showing the specific nature of relationships among components. SVC-theory is developed inductively through a process of rational reconstruction of situations based on experiences and observation. Descriptive theory offers a great deal to practitioners who need some idea of what might be taking place in a situation as well as the flexibility to view each encounter (goal region activity in papers V, VI, VII) with enough openness to accommodate the tremendous diversity of humans and their experiences (Rodgers, 2005).

2.3 Research methods

Research methods in papers I-III

The theory and the nature of the constructs investigated determine whether empirical results either support or invalidate measures in nomological validity investigations (Peter, 1981). A fundamental problem in studying the market potential of future business concepts, and especially the creation of customer value in those, is that customers are not able to reliably predict what they will value in the future (Huber et al., 1997; Woodruff, 1997).

Decision makers can make the wrong prediction about the salience of choice alternatives, the impact of concurrent outcomes, the general reference level, the period, or the sequences over which the outcomes are evaluated, and finally, the effect associated with the timing and frequency of memories of the outcomes. These sources of variability have different implications with respect to the extent to which future events should be discounted in choice processes (Huber et al., 1997).

Where personal values are often generic and fairly stable, customer value is more tied to a service or a product and it faces more changes (Flint and Woodruff, 2001). The value of a service to the customer is a subjective matter, and it depends on the customer's user profile, namely, the way they like to use the service, or are used to using it (Kortge and Onkonkwo, 1993). In a group of people with similar user profiles, the customer value of the service is quite comparable. The Customer Value Audit (CVA) can be used as a tool for developing a customer value model. The CVA process has three phases: start-up, survey, and strategy formulation (Allee, 2000). The process was modified to fit the study of customer value in communication services.

The first step in the research process was to select the appropriate methods for assessing customer value attributes and combining these in the Quad Play business model. Because the aim was to test the Quad Play customer value creation with only a few experts, the analytic hierarchy process (AHP), together with an application of quality function deployment (QFD), were the chosen expert methods for the analysis. The second step was to assess customer value attributes with AHP software. Then, the actors and value streams in the multi-play business model were mapped. Finally, the customer value attributes were connected with the applied QFD process.

According to Saaty (1999) by structuring a system into clusters and subdividing clusters into smaller pieces, it is possible to form a complete picture of the whole system (Saaty, 1999). One advantage of the AHP is that it provides a rational way of compiling expert opinions by taking into account the inconsistency of judgment. It also harmonizes the comparison between tangible and intangible measures by allowing the usage of a verbal linguistic scale in the assessment (Saaty, 1999; Wang, Xie, and Goh, 1998). The fit between the value attributes of a certain customer segment and analyzing customer value attribute prioritizations can assess a firm strategy within that segment. Building a customer value model (Anderson and Narus, 1998) is the first step in this analysis.

The overall plan for collecting and analyzing data in papers I-III followed the process of an interactive research design with features of qualitative, constructive, and quantitative designs. The research design related to the choice of strategy for data collection needed to resolve the stated research problem (Ghauri and Gronhaug, 2002).

Under particular circumstances, considering the presented concept of Advanced Multiplay, the customer will establish an absolute value measure for a particular product or product feature by determining how much more or how much less than some benchmark he or she is prepared to pay. Given a set of alternatives and a benchmark price, a customer may be able to ascribe value to each by stating an amount, "in-exchange", plus or minus. The benchmark should represent an aggregated average of the market's perceptions of where benefits equal sacrifices. Calculated

differences from this would represent the individual's net balance regarding one alternative compared to another. Generally, "Rational VC" will likely be used in a predictive context, and may be seen as being represented primarily in the "*ex-ante"* zone, though subsequent experience may cause the customer to re-evaluate and re-set benchmarks for subsequent purchasing decisions (Woodall, 2003).

Survey structure and the data collected

The emphasis of the research process in the first phase was to connect a new service offer/concept with the customer's needs. To determine the customer value attributes present in the integrated offering, the research had to meet several requirements. The method had to be able to isolate the potential general level customer value as an intrinsic part of an offering out of the total observed customer value of the interviewed customers. For that purpose, an exploratory approach was chosen, and the potential advanced offering was progressively built, wherein various new functionalities served as input to be subjectively reviewed by customers in a web-based survey.

Respondents, the real customers of one integrated-services operator, were also requested to subjectively estimate their current and future usage, current consumption, price they were willing to pay, recent equipment purchases delaying purchase decisions, and general and purchasing interest towards an offering. The structure of the survey was as follows:

1. Usage now by time spent
2. Usage increase / decrease in the near future
3. Perceived importance of 36 statements about services, features, and customer processes, where the importance of functionalities was measured with a five-point Likert scale, assessing the importance of the components
4. Category importance of 6 general level customer value attribute classes
5. Subjective estimation of current spending on communication
6. Subjective estimation of current spending on digital entertainment
7. General interest in offering
8. Willingness to pay per month
9. Recent equipment purchases
10. Delay factor (My recent equipment purchases would delay me from purchasing the offering.)
11. Interest in purchasing the offering and open question: Why so?
12. Open question: What would be most fun and most beneficial in the offering?
13. Willingness to volunteer to act as a pilot user family (another way to estimate the interest in changing ICT usage)

The formal test model (Jarvis, Mackenzie, and Podsakoff, 2003) was based on statistical, uni-dimensional, and multi-dimensional formal constructs, causal indicators influencing latent variables, and indicators that are observed as explanatory variables. Creating correlations between indicators (functionalities), corresponding indicator classes (general level customer value attributes) to both purchasing interest and willingness to pay were designed to provide new insights to advanced integrated offerings. The variety of indicator classes and indicators was selected with the purpose of offering more flexibility to recompile the data later, and to support the learning process about the new offering type. Next, a model was designed, which could show the relative importance of value attribute dimensions that were not directly linked to any single new functionality. Novel features and functionalities, still being only level at the separate Research and Development (R&D) projects, were chosen by a sequential workshop process within an operator

R&D department, where they were first put into value attribute classes (indicator classes) according to their intended usage. Then, in separate workshops for the VOC Process (Voice of the Customer), technology, functionality, and service were treated as a combination of customer value attributes, and the customer benefits were listed. Then, the functional description was drawn and documented by the researcher. Technological language was translated into non-technological language and all abbreviations and acronyms were replaced (see Figure 8). The language was then at such a level that a customer could explain to another customer how a specific technology or service would benefit him or her in daily life. Finally, the list of all translations was transformed into a list of importance statements, which could then be answered by customers with a rating.

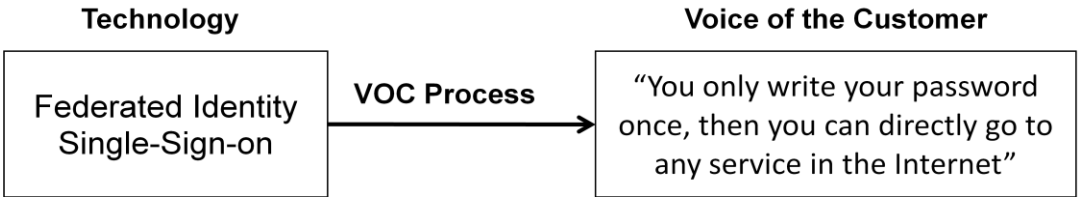

Figure 8: An example of the beginning and end stages of the VOC Process.

Then, the questions were given first to academic partners for comments, then to R&D and Marketing specialists of a target company, then to a market research agency, and lastly, to an interviewing agency, all of which came up with useful remarks and improvements. After this lengthy VOC process that lasted several months, the questionnaire was ready to be launched, containing numerous questions on topics that did not yet exist as real services in the market.

The customer value attribute classes were reduced to six, signaling areas of customer value and innovation potential as a class importance. Finally, the classes of general level customer value attributes (indicator classes) based on service usage attribute classes from the segmentation model used in the company, were formulated and verbalized as:

1. Making everyday life easier
2. Freedom of place and remote use
3. Security and privacy matters
4. Technical support
5. Cost (new functionalities to more effectively control costs)
6. Novelty value, status, style

Because a future orientation poses many challenges to a research study, significant emphasis was placed on avoiding pitfalls commonly associated with surveys. The questionnaire contained a much larger set of questions and statement types than a normal one-product-only survey. It was chosen to ask customers to individually rate the importance of each indicator, with a 1-7 Likert scale, allowing us to derive the ranking order from the ratings for a large amount of data. Each indicator was placed beforehand into one of 6 different indicator classes (service usage attribute classes[1]), which allowed us to also rate these classes.

Another reason we chose to use ratings was that they are much less time consuming than rankings, and people enjoy doing ratings more, and are more satisfied with their validity (Krosnick, 1999). Response sequence effects were eliminated by random sequence generation between service usage

[1] Company term for customer value attributes

attribute classes and their object contents in a web-based survey engine, i.e., each respondent received a unique web questionnaire to answer. Placing rating questions later in a questionnaire makes correlations between ratings on the same scale either more positive or less negative (Krosnick, 1999), which are the expected results of non-differentiation. For this reason, we placed the part relating to the importance estimation of new future functionalities at the beginning of the questionnaire. To reduce satisficing and increase optimizing answers, we needed to foster conditions that reduce satisficing and increase motivation to optimize. Optimizing refers to the generation of an optimally accurate subjective answer for each question, which requires a great deal of cognitive work. Satisficing here means respondents compromise their standards and expend less energy to answer. Satisficing is more likely to occur when (a) the task is difficult, (b) the respondent's ability is low, and (c) the respondent's motivation to optimize is low (Krosnick, 1999).

To cope with these factors, a considerable effort was made to lower the task difficulty and increase the respondent's ability by using a rigorous VOC process when preparing the survey. We also attempted to increase the respondent's motivation to optimize by creating a sense of urgency, by stating the influential role of customers in their own operator's new concept development.

In November 2007, the web survey email was sent to 12,000 residential customers, a systematic sample collected from individuals with both mobile and broadband subscriptions. After three days, there were already approximately 2,300 answers, and the answering machine (a web server) was disconnected after one week, after having collected 2,507 responses. All customer segments that were studied passed a minimum statistical target limit of 400 answers. Open-ended questions for written verbal comments had 1,377 answers of more than five words, providing directions and deeper insights regarding where to search for origins of customer value in integrated ICT offerings. Qualitative analysis, which is not reported here, was also an important stage when entering the second phase of the research, and helped to enter into a more interpretive phase of the value deconstruction, especially from the potential SVC perspective.

The analysis of general level customer value attribute classes (indicator classes) was constructed using a principal component analysis. This analysis was conducted on each of the chosen 6 dimensions, which covered all 36 variables. With principal component analysis, the constructed components represent the variables relatively well, and still contain sufficient variation for further analyses. The 6 dimensions were used as independent variables in a logistical regression model with other variables. Two logistical regression models were constructed. The first one was used to explain the willingness to pay, while the second one explained the general interest towards the offering. As both of the dependent variables were ordinal by scale, they were dichotomized in order to conduct the analyses. In addition, the customers had previously been divided into different segments, and the analyses were conducted separately on each segment in order to determine the driving factors in different segments.

Research methods in papers IV-VII

Several sub-ordinate research questions were derived from the second research question:

- What theoretical concepts could contribute to defining SVC?
- When and why would SVC be perceived by customers, and by which kind of customers?
- What kind of elements would be included in a theoretical model for SVC creation?
- What is the nature of the linkages between a model's key concepts?

At the beginning of the second research phase, an offering of Apple Inc. was investigated as a case study for the potential creation of SVC, both to illustrate the phenomenon and to answer sub-ordinate research questions. The reason for this is that the company is known for its wide range of

equipment and service offerings that are considerably more expensive than average, and that their products and services are quite interoperable with one another, i.e. "fit together," "work well together," as integration benefits were described (Brady, Davies and Gann, 2005; Tuli et al., 2007). The price level for equipment and services is at the high-end of the market, which also indicates that customers observe and perceive a higher value. The data used was publicly available information about their products and services, the way their product and service portfolio has evolved, and finally, how products and services are sold together. Since the aim of the research is to carry out a theoretical examination of SVC, the case study is used to demonstrate how these ideas manifest in real life. Past years have shown that Apple Inc. has succeeded in creating a unique type of value to its customers, bypassing competitors in profitability.

Building theory from case studies is usually a research strategy that involves using one or more cases to create theoretical constructs, propositions, and midrange theory from case-based, empirical evidence (Eisenhardt, 1989; Gerring, 2007). Case studies are rich, empirical descriptions of particular instances of a phenomenon that are typically based on a variety of data sources (Yin, 1994). The central notion was to use cases as the basis from which to inductively develop theory (George and Bennett, 2005). Siggelkow (2007) remarks that even a single talking pig would be a very special case, and thus, would provide a very powerful example. From that, basis we could assume Apple to be a talking pig in the case study context, or an organism having a new capability.

The theory is emergent in the sense that it is situated in and developed by recognizable patterns of relationships among constructs within and across cases and their underlying logical arguments (Eisenhardt and Graebner, 2007). By conducting a theoretical examination of SVC creation through Apple portfolio, we also attempted to formulate key concepts for creating SVC and to provide a framework in which to analyze a firm's offerings at such a level that it would be possible to identify the elements creating SVC. Replication logic is central to building theory from case studies (Eisenhardt, 1989). A similar investigative study was performed to a case of Advanced Multi-Play, with similar methodology. The data used was literature on multi-play and the data from the executed survey on Advanced Multi-Play.

After the development of a SVC-model, few propositions based on the SVC-model were drawn, which could possibly explain the anomaly found from the survey. The entire data from cross-sectional survey at the first part of the research was recompiled using subjective expenditure classes as comparative to interest, discount needs, willingness to pay and various service-usages. Importance statements having a systemic character, e.g. single-sign-on were used as well to indicate need for integrated, systemic features and services. Comparison study, where different expenditure classes are created from the subjectively estimated amount of expenditure that respondent indicated as monthly payments for communication services. These expenditure classes were then correlated to response data (N=2507) from earlier survey. Following hypotheses were to be tested with the recompiled data

1) High spenders are willing to pay more for the proposed offering, but simultaneously want more discounts if offered just a basic bundle
2) High spenders state more importance for functionalities having systemic character e.g. single-sign-on

Bagozzi (1984) claims that conceptual meaning within theory construction can be allocated in any one, or all, of three ways: via attributional definition (statement of characteristics), via structural definition (organizational / hierarchical representation), and / or through dispositional definition (identification of associations and relationships with other concepts). For modeling stage at second

part of the research, for purposes of paper VII, the attributional analysis based on Holbrook's typology was conducted, and structural definition is presented for creation of SVC (Paper VII).

Scope and limitations

The scope of the research is in the creation of customer value by integrated offerings, which is theoretically a rather unstudied area. The research is based on the exploratory and descriptive research strategies, and no definitive results can be given. The first, not extremely significant, limitation of this research at the first part is related to fact that methodologies capable of measuring customer value in the context of integrated offerings were rare. Thus, the method first had to be validated (Pynnönen, 2008; Paper II). Customer value, or customer value creation, was a new subject to measure in the context of integrated offerings. The limitation is due to fact that the method was originally developed to connect customer value and firm resources using the Multiplay concept, explaining how customer value changes should be connected to the required changes in key resources and capabilities, thus not purely to measure customer value. When measuring customer value preferences for Advanced Multiplay, the method was adapted to the research design (Paper II). When statistical methods were used, the results were analyzed and concluded, and understood as the respondent's subjective estimates. Empirical results are limited in the ICT industry, and report customers' subjective estimations of a telecommunication operator. Thus, the results testing the SVC propositions of Paper VI are only derived from testing respondents of a telecommunications operator. Research that is identical to other industry customers would be impossible.

In terms of other limitations, there were only two case studies to build a theory from. Both Apple and AMP were drawn from the ICT industry, one from an integrated telecommunications operator, and other from a vendor of equipment and services to end customers. There were no traditional manufacturers providing products and related services that had been tested, so the results presented will not directly apply to industries where digital channels are not applied. This is an important limitation, as the digital channels are capable of providing fast and comprehensive service channels to end customers, and have typical systemic benefits of reaching and controlling every component of an integrated offering. However, this type of interaction with customers is getting more and more common in other industries also.

These restrictions do not limit the testability of the SVC-model to other theoretical fields or industries, or other usage scenarios related to integrated offerings, as the SVC-theory is generally thought to function when an individual is achieving goals in a complex environment, based on concepts from social and cognitive psychology. The limitation of the descriptive theory building here is that the way that the applicability to other fields should be executed is not within the scope of this thesis. This thesis proposes an insight on the topic, and does not intend to provide normative advice.

3. THEORETICAL BACKGROUND

The aim of this chapter is to review appropriate theories that have the potential of explaining the research questions at hand. It that sense, knowing the variety of perspectives and meanings attached in customer value discussions, the discussion will be intentionally limited. The focus will be on the literature of customer value in marketing, customer value in consumer research, and customer value creation in management, focusing on the suitable frameworks of customer value that can shed additional light on the phenomenon under investigation.

In microeconomics today, "utility" has been used to describe the value that the customer derives from the product (or service). The fundamental description for analyzing choice involves the customer's preferences; utility is simply a way of describing preferences (Varian, 2010). Utility is an appropriate concept of value for understanding preferences *after* product choices have been made, but it is not effective in explaining how value is created for an individual using the product or service.

Preferences are conceived here as an individual's attitude towards a set of objects, typically reflected in an explicit decision-making process (Lichtenstein and Slovic, 2006). Term value preference is used here to describe the customer value attributes projected by a user to a set of a used product's attributes, as criteria for an evaluation and selection.

Regarding the existing discussion about customer value creation of a single product or service, Smith and Colgate (2007) provide a customer value creation framework, which identifies four major types of value that can organizations can create for customers: functional/instrumental value, experiential/hedonistic value, symbolic/expressive value, and cost/sacrifice value. Thus, as most are quite distinct from the utility approach, when studying the creation of customer value for something that cannot yet be measured in monetary terms, the utility approach has serious limitations.

One concept that deserves attention is the value constellation, a novel understanding of customer value proposed by Normann and Ramirez (1993). The main idea was to extend the discussion from creating value for customers by adding the perspective of activating customers to create their own value, i.e. to co-produce value from the company's various offerings. This approach requires a more profound constellation of a value-creating system, including all related economic actors, such as suppliers, business partners, allies and customers (Norman and Ramirez, 1993). Value co-production offers an alternative to the views on value, inherited from the industrial era (Ramirez, 1999). This concept becomes essential when the descriptive discussion typical for this explorative thesis turns to normative research in the future.

In areas of management, marketing, and consumer research, various frameworks explaining customer value creation of a single product or service exist (Holbrook, 1999; Woodall, 2003; Ulaga, 2003; Khalifa, 2004; Sanchez-Fernandez and Iniesta-Bonillo, 2006; Smith and Colgate, 2007). Different approaches also discuss the customer value of a single product or service: Woodruff (1997) and Parasuraman (1997) deal with value from the perspective of achieving a competitive advantage through customer value creation; Oliver (1999) discusses customer value through the concept of achieving excellence; and Lapierre (2000) discusses customer-perceived value in the industrial context.

Lancaster (1966a, 1966b) provides one of the first detailed accounts of the origins of heterogeneous and diverse customers' preferences, and ways in which consumers fulfill these individual preferences in an economic sense. Lancaster notes that consumers demand products not as such but for the characteristics (benefits) that they embody. This approach can be used to analyze product variety and product bundles as those characteristics may appear the same in various products and services, while still retaining their own typical characteristics. Lancaster's

approach can be seen to be the starting point for a discussion within management and marketing research on product-service-bundles and the concept of solutions.

Lancaster (1966b) also coined the term "activity of doing" as a context for an analysis, wherein many different characteristics would be needed by the customer, which statement resembles the recent claim that customer just want to get things done, and do not explicitly purchasing products for themselves (Christensen, Cook, & Hall, 2005). Conducting an extensive literature review here is however, is beyond the scope of this thesis. Another reason for not pursuing this line of research further here is the focus of this dissertation, especially in the second part of the research, which is to theorize how the customer derives, or receives, the value of integration, being not approached as a value produced by certain product characteristics.

However, a theoretical discussion on customer value creation concerning offering entities, bundles, or integrated offerings is rare, though it has begun, thanks to e.g. the work of Worm, Ulaga, and Zitzlsperger (2009) on additional value created by customer solutions, and Brady, Davies, and Gann (2005) on integrated customer solutions.

A market research technique that deserves attention in this literature review in context of integrated offerings would be a conjoint analysis (see e.g. Green and Srinivasan, 1990). Managers and market researchers in a company would utilize conjoint analysis to measure the value provided to customers in e.g. a multi-play offering (or any other offering with multiple features). Conjoint analysis has potential to become essential in future normative research in the future, having then comprehensive parts (products and services) of integrated offerings to measure. Conjoint analysis has still one severe limitation regarding the detailed measurement of a large number of attributes (Green, 1984). With too many attributes to measure, a respondent is subjected to a severe information overload, which impedes optimization (Krosnick, 1999), and might cause a respondent to opt for simplifying tactics, and the resulting part-worth estimates may distort their true preference structures (Wright, 1975).

Several important contributions on the value of time also exist that are relevant to this research, such as Graham (1981), Feldman and Hornik (1981), Leclerc, Schmitt, and Dube (1995), and Leclerc and Schmitt (1999). The main weakness that characterizes the literature in areas of management, marketing, and consumer research is the lack of agreement among scholars and, as a result, the lack of a clear definition of customer value (Sanchez-Fernandez and Iniesta-Bonillo, 2006). There is also little evidence to indicate that the literature proposes either purposefully convergent or individually distinct notions of "value for the customer" (Woodall, 2003). This also indicates that customer value can be defined within a specific context only, with Holbrook's adapted words (1999, p. 9):

> Customer value is an interactive relativistic preference experience, meaning that the relationship of customers to products (subjects to objects) operates relativistically (depending on relevant comparisons, varying between people, changing among situations).

In this thesis, value is discussed from the perspective of value creation by and within the end customer (defined above), structured especially following the typology of customer value proposed by Holbrook (1996). Woodall uses "Derived Value for the Customer" in this context (Woodall, 2003). Holbrook's typology can be used to set the system level experience of value into the axiological location (Paper VII). One interesting approach recently considered value as embedded in everyday practices, where value is seen as neither subjective nor objective, being formed in practice and capable of being enhanced through intervention (Korkman, 2006).

To date, there is no theoretical model to explain how value emerges, or how it is created in an actual experience within the context of offerings consisting of multiple elements, forming a system where two or more offering elements are used to perform a task.

Recent studies on the customer value of the Quad Play offering (Pynnönen and Hallikas, 2008; Paper I; Sekino, Pecorari, Douglas, and Gates, 2006) suggest that the general level customer value attributes of ease-of-use, convenience, and interoperability of devices within and by the total offering are as strong as, or even stronger value attributes than price. These value attributes are not directly linked to any single source of value like a certain device or a service module.

It is argued, therefore, that a novel framework for integrated offerings is required, one that focuses the emergence of general level customer value creation within the system context, whereby a customer achieves goals in real life. From this short review, it becomes apparent that there is a difference in the mechanism of value creation between a packaged bundle and an integrated product and service offering.

The discussion on the creation of customer value within the context of broader offerings, value systems, or between system components, is rare. In addition to knowing the potential demand, to build up an advanced integrated offering, one must at least have knowledge of the structure of demand and the preferred way to purchase. Bundling or integrating services does not necessarily decrease the freedom of choice from the customer's perspective; it may improve customer satisfaction because of the frustration a customer feels due to excessive choice or variety. Identification of the driving forces of customer value for an integrated offering provides the basic understanding for how to start integration (Pedersen et al., 2007; Sekino et al., 2006; Pynnönen and Hallikas, 2008; Paper I; Paper V).

The recent work that is closely related to this research, by Worm, Ulaga, and Zitzlsperger (2009), focused on the buying criteria of transportation service provider customers, and reported four dimensions of additional value emerging from a customer solution: customization benefits, deployment process, integration benefits, and life-cycle cost advantage. Integration benefits arise because a system's individual components fit better if they are manufactured as an integrated complete solution (Worm, Ulaga, and Zitzlsperger, 2009).

From the perspective of integration creating customer value, a more specific question arises: How does this fitting together actually create value for customers? What happens when something fits together? How is that fitting together observed, perceived, or experienced by customers? How must the system components be integrated to make them fit together?

For the purpose of this research and for the theory building part in particular, two beneficially overlapping and illustrative customer value frameworks were selected and discussed. They aim to describe what happens when value is experienced (derived) in actual usage situations, and the value is "created to" the customer. Actual usage situation presents the time window where something can eventually "fit together", as a result of either a parallel or sequential encounter of products and services. The first framework, built by Woodall (2003), covers the issue from a marketing research perspective. The second theory framework on customer value is the customer value typology by Holbrook (1996), having the perspective of consumer research on the value experience, rooted in the philosophy of the valuation of things, or axiology (Holbrook, 1996).

Other promising, related approaches to general level creation of customer value, intrinsic-, user network-, and complement network attributes, and the complementary value creation, are discussed and analyzed in light of the literature review and recent criticism. Approaching the end of this chapter, several promising concepts are presented to aid building and proposing new theory on general level creation of customer value, i.e. SVC creation. An area that became more and more important during this exploration is the value of time and the results of Leclerc, Schmitt, and

Dube (1995) in particular. Their work provides an essential contribution for the explanation of the systemic level perception of value by an individual, and plays a central role in understanding how SVC can be created.

3.1 Marketing and consumer research frameworks on customer value

For exploration and theory building purposes, it is useful to look at the phenomenon of general level creation of customer value through the existing frameworks of customer value. It is also useful that selected frameworks assess the phenomenon from different theoretical angles; one from a firm's marketing perspective, and another from an individual's experience perspective.

Value for Customer (VC) by Woodall

Woodall (2003) has made a significant effort to declare the attributes, structure, and position of the customer value concept from a marketing perspective. He provides a rationalized view of the Value for Customer (VC) domain, enabling different interpretations / presentations to be compared, understood, and classified within the context of a clearly articulated schema. His contribution was set as an initial framework for this exploratory study, to offer a useful framework of customer value. "Derived value" in particular was to be later connected to a more consumer behavior-oriented customer value approach by Holbrook, Leclerc, Schmitt, and their colleagues. The term customer value is used within the marketing literature to portray both what the customer from the supplier, being the focus of this research, derives and also what the supplier from the customer derives. This latter property is referred to as "customer lifetime value" (CLV), but there is no agreement on a distinct name for the former. (Woodall, 2003)

Woodall (2003) has chosen to use the term Value for the Customer (VC) to represent all similarly associated, demand-side notions of value. A similar choice is made in this thesis to use the SVC abbreviation to distinguish the system's value to a provider organization, or as a sellable system solution to a provider from a customer's perspective, as an individual user benefiting from a 'good' system. More specifically, SVC stands especially for individual benefits, i.e., system components fitting together from the customer's perspective (Brady et al., 2005) at a systemic level, not only for the benefits derived from its parts.

Woodall further identifies five different notions of VC from which Marketing VC (concerned with product attributes alone), Derived VC (outcome related, having a theoretical linkage to Holbrook (1996)), and Rational VC (benefits expressed in units of exchange) are of special interest for this research. Marketing VC – perceived product attributes – an angle used in the first part of the research, where VC conceived as "product attributes" is emphasized when VC as a property is seen to have considerable strategic importance, and it is principally examined with the way that an organization "goes to market" (Woodall, 2003). "Perceived value" can also be used to describe this customer value type (Flint & Woodruff, 2001).

Derived VC (Woodall, 2003) links this research to value experience (Holbrook, 1996), and connects the marketing perspective to the consumer behavior perspective. This linkage becomes useful in theory building in the second part of this research. "Received value" can also be used here with similar meaning to experienced value (Flint and Woodruff, 2001). Derived VC is defined as use/experience outcomes: VC conceived as "use/experience outcomes" being suggestive of the Aristotelian notion of "use value." Key contributors are from the field of consumer behavior, linking the consumption experiences to social and human values. Derived VC is conceptualized as the benefits derived from consumption-related experience and presented such that independence of, or at least prevalence over, any sense of associated sacrifice is implied. Thus, t can be derived rather than computed, and is essentially outcome oriented (Woodall, 2003).

The value creation from a customer perspective can be positioned into this type of value, embedded into either situations or practice (Korkman, 2006).

Woodall (2003) divides Derived VC further into five sub-forms, from which Practical VC, "value derived from usefulness or fitness-for-purpose," and Social VC, "value derived from consumption activity that associates the subject with favored individual/social groups" are most interesting within the context of this thesis. Practical VC seems to be a similar notion to the Efficiency from customer value typology of Holbrook (1996). Rational VC, the difference from the objective price, can be used to distinguish a bundle from an integrated offering. This is a form of VC that combines the notions of "exchange value" with "intrinsic value" and, as with "Net VC," it is essentially utilitarian in nature. Here, the customer begins with a price benchmark. This might be a more-or-less objective perception of a tolerable price band, and /or a market price, and /or a maximum or "reservation" price. Dependent upon the perceived benefits or attributes of the product under consideration, the customer will compute what a "fair" price might be in relation to the already established benchmark(s). VC in this context is the difference between the two, stated in a relevant currency (e.g. good value, plus $20-00; or poor value, minus $10-00) (Woodall, 2003).

Woodall proposes a definition of customer value as an Aggregated VC, identified as a possible representation of "overall" VC, leading to the construction of the following VC definition (Woodall, 2003, p. 21):

> Value for the Customer (VC) is any demand-side, personal perception of advantage arising out of a customer's association with an organization's offering, and can occur as reduction in sacrifice; presence of benefit (perceives as either attributes or outcomes); the resultant of any weighed combination of sacrifice and benefit (determined and expressed either rationally or intuitively); or an aggregation, over time, of any or all of these.

Part one of the research tested the respondents' observed importance on a verbally described virtual offering and its functionalities, and is located in Woodall's theory framework context as relating primarily to Marketing VC ex-ante, i.e. examining the importance of offering attributes before actual user judgment about them, but also surveying subjective estimations of usefulness (Derived VC). The indicator class, "making everyday life easier," was highly appreciated by respondents; thus, efficiency (convenience) was positioned as one key general level customer value attribute. Rational VC (difference from benchmark price, i.e. existing expenditure) was also considered, as respondents compared the observed monetary value (willingness to pay) of Advanced Multi-Play to their subjectively estimated existing expenditure of telecommunications services. Adapting to the VC definition proposed by Woodall (2003), part two of the research attempts to declare the general level value experience when an individual uses a system, Derived VC, as the reduction of sacrifice regarding when an individual acts in complex environment but has a "good" system, and enjoys the presence of a systemic benefit that reduces the experienced complexity of that environment.

Customer[5] Value Typology by Holbrook

Customer value, with its nature and types, constitutes the essential foundation and fundamental basis for both the academic study and the managerial practice of marketing (Holbrook, 1999). The treatment of Holbrook on the concept of customer value is grounded in axiology[6].

[5] Originally "Consumer Value Typology"

Holbrook's typology of customer value reflects three key dimensions of customer value: 1) extrinsic versus intrinsic value; 2) self-oriented versus other-oriented value; and 3) active versus reactive value (Holbrook, 1999).

Extrinsic value pertains to a means-end relationship, wherein consumption is prized for its functional or utilitarian instrumentality in serving as a means to accomplishing some further purpose, aim, goal, or objective. By contrast, intrinsic value occurs when some consumption experience is appreciated as an end in itself – for its own sake – as self-justifying (Holbrook, 1999).

Value is self-oriented when a customer prizes some aspect of consumption selfishly or prudently for his/her own sake, for how s(he) reacts to it, or for the effect it has on him/her. Conversely, other-oriented value looks beyond the self to someone or something else, where their consumption experience or the product on which it depends is valued for their sake, for how they react to it, or for the effect it has on them. Here, the "other(s)" in question could range from the more micro level (family, friends, colleagues) to an intermediate level (community, country, world) to the most macro level (Cosmos, Mother Nature, the Deity[7]). Or, at the most micro level of all and typical of certain Eastern religions (as well as Freudian psychoanalysis), the "other" could refer to some inaccessible "inner self," or to some "unconscious" part of the mind with which one seeks to "get in touch." Value is active when it entails a physical or mental manipulation of some tangible or intangible object – that is, when it involves things done by customer to or with a product as part of some consumption experience. It involves something a subject does to an object, in that s/he acts upon it or moves it. Conversely, customer value is reactive when it results from apprehending, appreciating, admiring, or otherwise responding to some object – that is, when it involves things a product does either to or with a customer as part of some consumption experience. Here, rather than s/he (the subject) doing something to it (the object), the situation is reversed; it acts upon him/her and moves him/her (Holbrook, 1999).

Holbrook treats each of the potentially continuous dimensions described as a simple dichotomy[8] and combines these three dichotomies into a 2x2x2 cross-classification, producing an eight-celled Typology of Customer Value, presented in Figure 3. Each cell of this taxonomy represents a logically distinct type of value in the consumption experience, with key examples of each major type shown parenthetically. Derived VC, defined as use/experience outcomes (Woodall, 2003) can be seen to locate in the typology as self-oriented (for myself) value type, i.e. "when I prize some aspect of consumption selfishly or prudently for my own sake, for how I react to it, or for the effect it has on me" (Holbrook, 1999). More accurate, Practical VC, i.e. value derived from usefulness or fitness-for-purpose (Woodall, 2003), seems to be rather equal expression with Efficiency, expressed as the output vs. input ratio, and as convenience. It would be logical to assume that a "good" system would appear to be more practical to have, and more convenient to use, producing efficiency as a key benefit.

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[6] Axiology is the study of quality or value. It is often taken to include ethics and aesthetics — philosophical fields that depend crucially on notions of value — and sometimes it is held to lay the groundwork for these fields, and thus to be similar to value theory and meta-ethics. The term was first used in the early 20th century by Paul Lapie, in 1902, and E. von Hartmann, in 1908. http://en.wikipedia.org/wiki/Axiology

[7] God; Supreme Being. http://dictionary.reference.com/browse/the+Deity

[8] Division into two mutually exclusive, opposed, or contradictory groups: a dichotomy between thought and action. http://dictionary.reference.com/browse/dichotomy

		Extrinsic	Intrinsic
Self-oriented	Active	EFFICIENCY (Output/Input; Convenience)	PLAY (Fun)
	Reactive	EXCELLENCE (Quality)	AESTHETICS (Beauty)
Other-oriented	Active	STATUS (Success, Impression Management)	ETHICS (Virtue, Justice, Morality)
	Reactive	ESTEEM (Reputation, Materialism, Possessions)	SPIRITUALITY (Faith, Ecstacy, Sacredness, Magic)

Figure 3: Typology of Customer Value, based on axiology (Holbrook, 1996).

The value type of Efficiency, producing a ratio of outputs to inputs (O/I) and convenience experiences to customers, relates straightforwardly to telecommunications, electronics equipment, and applications (hardware and software) usage. Tangible and intangible ICT goods and services are mostly designed as tools for, e.g. helping an individual to establish the personal communication event from a distance, or creating, editing, and sending a document in a faster and more convenient manner. The definition from a recent study on convenience from a service perspective (Farquhar and Rowley, 2009, p. 434) supports Holbrook's view of people judging the value when entering into a context and using service within that context:

> The convenience of a service is a judgment made by customers according to their sense of control over the management, utilization and conversion of their time and effort in achieving their goals associated with access to and use of the service.

If using the above definition for systems or integrated offerings, one could easily define the convenience produced by systems and integrated offerings by replacing the word service. It would be an individual control over the management, utilization, and conversion of their time and effort in achieving their goals associated with access to, and use of, the integrated offering (as a system). The linkage to individual goals is important, as it ties the creation of customer value into the context of personal goal achievement, through which the benefit is experienced and the value is created for the customer. When looking backwards on the general level customer value attributes discussed, we can see that Efficiency can be safely held at the first building block to build on SVC, and that it is an absolutely necessary one (Paper VII).

Relevant implications concerning the consumption of temporal resources and the time-dependent aspects of customer value figure prominently in the work by Leclerc, Schmitt, and Dube (1995) on decisions regarding the use of time, on time-related perceptions, and on experiences associated with time spent in waiting lines. Specifically, these authors report findings pertinent to the

relativistic sense in which time-related decisions show a risk-averse tendency that contrasts with the risk-taking orientation with money-related decisions. They further show that time perceptions depend relativistically on the environmental situation, such as when delays are experienced as more disturbing if they occur near either the beginning or end of a service encounter. When adapting this to usage of any system, always including a small break in usage, i.e. a leap from one part of a system to another, the notion of time being relativistic depending on the situation becomes essential. The sacrifice, or cost, of this leap is hidden in a solution's total price, and the previous researchers have not studied the magnitude of the sacrifice. It is obvious that the quicker or more convenient this leap is, the better the system is received, and the greater the Efficiency value (Holbrook, 1999) that the user derives. Thus, more value is created for the customer.

3.2 User network- and complement network value, complementary value

User network- and complement network value

User network- and complement network value attributes as approaches to describe the creation of customer value in ICT markets, deserve to be discussed, as they attempt to explain the value creation types potentially present in, and "surrounding" the integrated ICT offerings in actual usage. It may be that positive effects experienced that can be explained by those approaches, will eventually increase as the SVC increases, as more efficiency and convenience are liberated to the customer's use by a good system. As such, from the Net VC perspective, SVC intensifies the effect of user network- and complement network attributes, thereby improving customer experience. Thus, his section is seen as being important to complete the picture about how the integration can benefit the end customer.

Thorbjörnsen, Pedersen, and Nysveen (2007) proposed a general categorization scheme for networked services in the ICT context, as an extension to Holbrook's typology (e.g. Holbrook, 1999), by combining theories of direct and indirect network effects and the research on technology and services adoption. Intrinsic attributes refer to the service's inherent attributes, whereas extrinsic attributes refer to attributes associated with the social networks that provide and use the service. The authors emphasize that these extrinsic service attributes are essential for the creation of customer value in the ICT environment (Thorbjörnsen, Pedersen, and Nysveen, 2007). By intrinsic attributes we refer here to attributes designed in the service itself, as well as experiences derived from the augmented product (Lee and O'Connor, 2003). The Technology Acceptance Model (TAM) identifies ease of use and usefulness, two key attributes of technologies and services (Davis, 1989). Concepts of ease of use and usefulness have been investigated in a large number of studies, including the use of mobile phones (Kwon and Chidambaram, 2000) and mobile services (Fang, Chan and Brzezinski, 2006; Nysveen, Pedersen and Thorbjørnsen, 2005). Other attributes of mobile services that pertain to intrinsic properties are perceived enjoyment (Nysveen et al., 2005) and playfulness (Fang et al., 2006).

However, the Technology Acceptance Model (TAM) is designed to explain the customer adoption of new technologies, products, and services, and it can be useful as such. On the other hand, its capability to explain why or how the user perceives the value of usefulness or ease of use is limited, which capability would be essential for this research. The subject of this research, general level value creation, is theoretically included in the coverage of TAM as a one potential diffusion driver, and might become one attribute among others in TAM structure in the future. A review for TAM performed by Chuttur (2009) showed that observations of key applications, extensions, limitations, and criticisms from a selective list of published articles on the model indicate that, although TAM is a highly cited model, researchers share mixed opinions regarding its theoretical assumptions and practical effectiveness. Therefore, it can be concluded that research in TAM

lacks sufficient rigor and relevance that would make it a well-established theory for the Information Systems community (Chuttur, 2009). Also as it is challenging to establish a required theoretical linkage to customer value creation, TAM was omitted out of the methodology used in this research.

Two intrinsic attributes, ease of use and usefulness, have been found to significantly predict intentions to use mobile services. However, for services with network externalities, the relative importance of intrinsic service attributes may be heavily deflected or inflated depending on the attributes of the social network that provides and uses the service. For instance, it does not really matter if your new mobile chat service is extremely easy to use if you are the only person in the world using that particular service. Extrinsic attributes may thus be vital for the perceived value of networked services. For network services, extrinsic attributes pertain to properties of the social networks that provide and use the service. These extrinsic attributes provide value to the service and are unique to network services (Thorbjörnsen, Pedersen, and Nysveen, 2007).

If the availability of software applications for Apple Computer or Apple iPhone were limited, these complement network attributes may impact the decision of whether to buy an Apple computer or not. This example illustrates an indirect network effect, which predicts that the greater the availability of complementary products or services, the more attractive the relevant network will become. Important complement network attributes thus increase complementary service quality and complementary service variety. Complementary service quality and variety are particularly important for platform services, where multiple services are offered on the same technological platform or portal (Thorbjörnsen, Pedersen, and Nysveen, 2007).

From the SVC perspective, it is possible that SVC might serve to enhance customer value creation of the user network- and complement network value attributes in the context of integrated ICT offering, thus increasing the total customer value, Net VC (Woodall, 2003).

Complementary value

Milgrom and Roberts (1995) originally launched a discussion of systems marked by complementarities, based on the *mathematical concept* of supermodularity as a notion of complementarities. Brandenburger and Nalebuff (1996) discussed the importance of providing complementary outputs to customers by a company being your complementor if customers value your product more when they also have the other company's product than they do when they have your product alone. This definition does not take a comprehensive stand on customer value creation in level of complementing products. Complementarities can be expected to increase created supplier side value by enabling revenue increases (Amit and Zott, 2001). Brynjolfsson and Saunders, (2010) recognize two principal ways in which complementarities reveal themselves empirically. First, complementary practices are often correlated with one another. If managers know that training is complementary to IT investments, then training expenditures will tend to be higher when computer expenditures are higher, and vice versa. Second, performance is often higher when complementary practices are adopted together than when they are adopted separately – indeed, this is the definition of complementarity (Brynjolfsson and Saunders, 2010).

The value of complementarities has not been widely used for the study of product or service level creation customer value. Ennen and Richter (2010) reviewed the recent research literature using complementarities approach (2002-2008), finding that 90% were using the organization as a primary unit of research, thus focusing neither on products and/or services, nor integrated offerings. They argued that the likelihood that a study finds evidence of complementary effects is at least partly driven by its investigative systems approach, regarding the existence of complementary relationships among entire systems of multiple elements. They argue further that the complementarity perspective does not provide predictions about the relationships among

specific elements, as micro-level theories (e.g., in organizational behavior) typically do. Moreover, the complementarity perspective does not specify the boundary conditions[9] for the emergence of complementary effects. The authors find the systems approach with multiple elements as an important research method for future research, and they suggest that these elements involved in the emergence of complementary relationships are of a heterogeneous nature (Ennen and Richter, 2010).

However, according to work by Chambers and Echenique (2008), supermodularity as a notion of complementarities must be rejected, because it is not an ordinal notion having testable implications. They argue that supermodularity is a considerably weak assumption, which is not testable with data on consumption expenditures (Chambers and Echenique, 2008). This does not mean that the *work concept of complementary customer value* becomes obsolete for the customer value research; only the mathematical theory behind it cannot be used to measure the customer value creation.

Different electronic devices and access networks, together with the necessary, appropriate applications, can help an individual to complete a task faster and with less energy, and the deeper integration between them results in less time and cognitive effort required in a task itself. In conclusion, the concept of complementarities is tempting, but it does not yet prove the creation of SVC. Further, having no well-established boundary conditions as, e.g. time limit for a task in hand, it cannot be used here to build hypotheses.

3.3 Value of time, goal setting, and the concept of goal region

Time has an essential role in understanding the creation of SVC, as the main related general level customer value attribute analyzed so far, i.e. efficiency, uses time as a common denominator. Graham (1981) stated that people in Western cultures have a "linear-separable" view of time as follows: "Time is visualized as a straight line extending from the past into the future and separable into discrete units" (Graham, 1981, p. 335). The view that discrete properties are associated with time implies that choices are made in terms of allocating units of time among competing activities. In other words, time is perceived as having value. We can 'buy time', for example, when we invest in a new product designed to save time. Time can be wasted in situations in which we spend more time waiting than we feel should have been necessary (Leclerc and Schmitt, 1999). Those competing activities to be allocated into the personal schedule mentioned by Leclerc and Schmitt (1999) can be defined as goals, and can safely build on the premise that at least some daily goals are achieved through ICT products and services. As daily time is limited, this insight suggests that daily time is a natural boundary condition for an individual. Saving time can be a reallocation of it to the more precious portion of the day, to a task, to a break, or a moment of joy, which is perceived to be important and/or valuable. Time as an influence on behavior has certain unique and crucial characteristics. In an absolute sense, time is finite and cannot be acquired. Neither can it be stored, except as *knowledge* of past events in the form of books and other media. The term "saving time" really means the reallocation of time from one activity to another to achieve greater efficiency. The recognition of time as a scarce resource offers particular insights into the influence of the relative "price of time" on the choice model activities (Feldman and Hornik, 1981). Aversion to uncertainty due to the non-fungibility of time seems to have a large impact on risk attitudes, that is, time is a scarce resource. It is also a precious one because time savings and losses cannot be easily transferred and exchanged. (Leclerc, Schmitt, and Dube, 1995)

[9] By using the term "boundary condition," Ennen and Richter (2010) refer most certainly to the necessary conditions for complementarity effects to emerge in the first place.

To understand the dynamics of the event of usage happening in a certain phase of time, it is useful to introduce methods from psychology, particularly from the area of field theory, characterized best as a method of analyzing causal relations and of building scientific constructs (Leclerc, Schmitt, and Dube, 1995). One of the basic statements of psychological field theory can be formulated as follows: Any behavior or any other change in a psychological field depends only upon the psychological field *at that time.* In other words, we are dealing in psychology with "situational units," which have to be conceived of as having an extension in regard to their field dimensions and their time dimensions. (Lewin, 1941, p. 294 and 301) This methodology has become widely used in building theoretical goal constructs in psychological research over the past few decades (Austin and Vancouver, 1996). Field theory is also used when, e.g. studying the negative value of waiting (Leclerc and Schmitt, 1999). Two key concepts of field theory, previously suggested by Kurt Lewin (1941), in which changes are (or might be) of interest for this study, are the life space and a boundary zone. Life space stands for the person and his/her psychological environment as it exists for him/her. We usually have this field in mind if we refer to needs, motivation, mood, goals, anxiety, and ideals. A boundary zone of the life space represents certain parts of the physical or social world affecting the state of the life space at that time. The process of perception, for instance, is intimately linked with this boundary zone, because what is perceived is partly determined by the physical "stimuli," i.e., that part of the physical world which affects the sensory organs at that time. Another process located in the boundary zone is the "execution" of an action (Lewin, 1941).

Goal setting theory, also derived from field theory, has been formulated inductively over four decades, by industrial-organizational psychologists, Locke and Latham. It is based on a premise that conscious goals affect action. A goal is defined as the object or aim of an action, for example, to attain a specific standard of proficiency, usually within a specified time limit (Locke and Latham, 2002). Goals serve two motivational functions. First, they influence the direction of behavior by expressing *what* people are trying to accomplish, and in a broader sense, *how* they are planning to attain the goal in question, as well as *why* they are pursuing the chosen course of action in the first place. Second, they influence the intensity of behavior by determining how vigorously a person will pursue a course of action depending upon the desirability of the focal goal. Subordinate goal stands here for actions required to achieve a focal goal (Pieters, Baumgartner, and Allen, 1995).

Woodruff (1997) defines value being a perceived preference for and evaluation of product attributes, attribute performance, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations. The concept of a goal region can be thus defined as a psychological "field" consisting of time duration, location, and social context, wherein a goal achievement takes place (e.g. having a dinner, seeing a movie, or a having a telephone call). Consequently, the Pre-Goal Region represents the time duration, location, and social context where the goal is expected to be achieved next, and which a person is striving to enter, not yet having entered the goal region. Adding a time boundary, a limited daily time for goal achievement, it becomes obvious that, by reducing time spent on Pre-Goal and After-Goal Regions, it is possible to increase the number of goals achieved daily, with the same effort exerted by an individual.

A delay in the service generates more intense negative responses if it occurs at the beginning of the service encounter before the central phase of a service has started, or at the end after the central phase has been completed, than if it occurs in the goal region, when the core of the service is delivered (Leclerc and Schmitt, 1999). This tested result directly suggests marketing and product development to add value by eliminating possible delays at both Pre-Goal and After-Goal Region phases, i.e. from the process of starting to use the product or services, and then ending the use of the product or service, thus reducing time spent to activate and end goal achievement

through the product or service. From the perspective of customer value creation, those phases before and after are quite likely to be included in an evaluation of the total value created when using the integrated offering.

By viewing commercial exchanges as encounters in which customers try to achieve goals, and by viewing delays as barriers on the path towards goal achievement, field theory can account for customers' psychological reactions to waiting at moments that occur during different phases of a service encounter. An individual's behavior (including their cognition and feelings) is the result of the psychological forces acting upon that individual at a given time (Leclerc and Schmitt, 1999). When a person identifies a need and attempts to achieve a goal, tensions arise. If barriers prevent goals from being achieved, individuals become frustrated. Barriers are perceived as less aversive, however, if they occur inside rather than outside of the goal region. When the individual is inside the region of the goal, pressure is relieved and a barrier produces little frustration. However, when the individual is outside of the goal region, tension exists, either because the individual strives for the goal (as in the case before goal achievement) or because the individual has been satiated and strives for new goals (as is the case after goal achievement) (Leclerc and Schmitt, 1999).

The life space, or variation of daily contexts of a customer varies a great deal, but the total picture of all customers can be aggregated to a few profiles. The temporal boundary zone of a day is the most natural way to observe the value of integration and the creation of systemic value for a customer, as it is a natural sequence for planning and executing activities. Everyone who has a high pile of tasks that needs to be executed in an extremely short time period experiences tension.

From the work of Leclerc, Schmitt, and Dube (1995), we adapt the concept of a Goal Region to information, communication, and entertainment activity as well. We treat a telephone call, writing a document using a computer, a YouTube site visit on the Internet, watching a movie from IPTV, or replying to an SMS message, as communication-content Goal Regions, unique to the ICT industry.

The entry barriers into the Goal Region occur similarly when, for instance, an instant communication is not possible, as physical dialogue is on-going, no phone is in reach, one is out of certain network coverage, it is neither possible to read e-mail nor answer, the user does not remember the password, or the needed piece of contact information is not in the device in hand. Therefore, depending on the goal region in mind, the user faces some expected or unexpected effort to achieve a goal. This effort consists, e.g. of expected and/or unexpected waiting time, physical distance, and task intensity.

3.4 Systemic consistency reducing goal transition effort

The customer observing the value of a system as a whole can be expected to seek similarities that create a notion of that system; so, which concepts permit the heterogeneous parts of a system to fit together? There is early evidence that some customers perceive value greater that sum of the parts of the solution (Johansson et al., 2003; Worm et al., 2009). As such, it may be possible to conceptualize enablers that allow the customers to achieve better outcomes than the sum of the individual components of an integrated offering, creating value beyond the sum of the parts. Beyond the delay related to learning and remembering the usage logic of devices and services in the context of goal achievement, there is a delay in relation to brain functioning. In cognitive sciences, the transition from one goal to another is termed, *task switching*, seeing a person exercising intentional "executive control" to select and implement the task-set, or the combination of task-sets, that are appropriate persons' dominant goals, resisting temptations to satisfy other goals (Monsell, 2003). The *switch cost* relates to the amount of time that is consumed by brain reconfiguring for a new task and the increased of error rate after switching from one task to

another. In the context of this research, this result describes the expected cognitive load occurring in the transition between goals, connecting it to the concept of time as well.

To change tasks, some process or processes of "task-set reconfiguration" (TSR) – a sort of mental "gear changing" – must happen before appropriate task-specific processes can proceed. TSR can include shifting attention between stimulus attributes or elements, or between conceptual criteria, retrieving goal states (what to do) and condition-action rules (how to do it) into procedural working memory (or deleting them), enabling a different response set and adjusting response criteria. TSR may well involve inhibition of prior task-set elements as well as activation of the required task task-set (Monsell, 2003).

Importantly, the number of different tasks to be performed is also seen to increase the switching cost further. Although performance recovers rapidly after a switch, responses remain slower than when just one task must be performed throughout the block: there is a long-term as well a transient cost of task switching (Monsell, 2003).

What theories and concepts can then be used to describe the reduction of effort in the transition phase? How can the effect of Transition Effort Reduction be linked to an entire offering or solution? The reliability component in the SERVQUAL model involves "consistency of performance and dependability," which means that the "firm performs the service right the first time; it also means that the firm honors its promises - accuracy in billing, keeping records correctly and performing the service at the designated time" (Parasuraman, Zeithaml, and Berry 1985, p. 47; 1988, p. 6). As a term, consistency of performance and dependability within the ICT context, also involves logical customer value attributes, as ICT serves the end customer mainly as an instrument to communicate, compute, or be entertained. To further clarify the creation of SVC through the adapted consistency concept, namely systemic consistency, is one quite prominent approach to defining a system level property to reduce the Pre-Goal Region waiting time and goal transition effort, and could be referred as a sense of similarity, resemblance, or familiarity. Moreover, in some cases, the sameness between the inherent qualities of components of a wider offering, it reduces learning and memory in usage (Paper V). Apple[10] comprehensively refers to these dimensions as visual appearance, interactive behavior, and assistive capabilities, as part of the user experience for applications encompassing the development of Mac OS X software (Apple Inc.). It should be noted that similar "encompassing" happens for Apple hardware and services as well, so the whole portfolio has gone through similar encompassing. Terminologically, these terms represent different dimensions of existence for performance consistency and dependability (Parasuraman, Zeithaml, and Berry, 1985), and describe the space of customer (user) experience on a system.

Other social activity, using a system of law, a systemic consistency is discussed as one *ideal* for constructing (designing) a law system, and it is defined as follows: all rules that make up the body of the law should be consistent with one another, and the attainment of this ideal promotes predictability and evenhandedness, and furthers the legitimacy of the law by demonstrating its formal rationality; this ideal can be called systemic consistency (Eisenberg, 1988). Systemic consistency does not require that concepts and definitions in different areas of law always be treated identically. When we require consistency in everyday activities, we usually mean that any differences in the treatment of two cases must be justified by some *relevant background propositions*. The same is true in common law reasoning, and here the relevant background propositions consist chiefly of applicable moral norms, social policies, and empirical propositions about how the world works (Armour, 2001).

[10] The user experience for Mac OS X applications encompasses the visual appearance, interactive behaviour, and assistive capabilities of software. http://developer.apple.com/ue/

In above law discussion, it seems to be implicitly assumed that, without that consistency, it would be much harder to find a common ground for decision making, because it would take considerably more effort to solve inconsistency before actual action. For this reason it could be assumed that the phenomenon has cognitive roots in human nature, the brain performing additional processes to solve inconsistency, always taking a certain length of additional time. Derived from the perspectives discussed in this chapter, a descriptive definition for systemic consistency is proposed as following:

> Systemic Consistency enhances user performance and dependability by consistent visual appearance, interactive behavior, assistive capabilities, and information between the system components, creating a sense of one systemic interface to the customer.

Systemic consistency, ideally, enables the fluent individual management of flow of information, communication, and entertainment without a friction from barriers of complex usage efforts or expected waiting time. Systemic consistency in the user experience can be, for instance, having to type one password only once, and then receiving access to all the needed services in the Internet, so that a system level functionality produces convenience and time savings when performing this repetitive task only once; or entering one identical password several times, achieving a feeling of trust knowing that you do not have any more pieces of written password notes around the desk (task of remembering). Thus, in this case, a customer not doing something actually creates value for him/her. Systemic consistency can also be experienced (or left unnoticed) in transition from the first device and access type to the second, e.g. using a laptop in a meeting and switching to use of a mobile phone in a taxi), without the barrier of remembering or re-learning the different usage logic of user interfaces of devices, still holding the important email in the editing process. In this case, systemic consistency relates to interaction of several components of an offering, and can be held as one key concept in SVC creation.

3.5 Summary of theory discussion

In order to shed light on this challenging phenomenon, many theoretical approaches have been discussed. Several approaches, otherwise quite useful, e.g. Technology Acceptance Model, Value as Utility, and Complementary Value Creation, were limited due to the scope of this research as obviously not being capable of answering the question of why the customer value can be created at the general offering level.

The discussion about the creation of customer value was quickly and purposefully limited to a moment in time and context where customer experiences, derives, and receives value, as the focus here was to answer the question of where and how the value of integration can be created for a customer. Certain customer value approaches were selected for more detailed discussion, as they were seen as useful for being used as frameworks to study and develop the SVC theory further, e.g. Efficiency value in the Customer Value Typology by Holbrook (1999), and Derived Value for Customer (Woodall, 2003). The concept of convenience value by Farquhar and Rowley (2009) connected the customer value creation to personal goals produced by an individual control over the management, utilization, and conversion of their time and effort in achieving their goals associated with access to and use of the integrated offering (as a system). The linkage to goals is important, as it ties the creation of value into the goal achievement context where the product or service benefit is experienced in time (pressure), and thus, the customer value is created.

User network and complement network attributes were discussed as value creation approaches present in, and "surrounding" the integrated ICT offerings, to obtain a complete picture about the context for customer value creation. It may be estimated that positive effects (experiences), which were explained by those approaches, will increase their value to the user as the SVC increases, because more efficiency (time) and convenience (focus) is liberated to the customer, increasing perceived complementary service quality and variety.

The theory chapter progressed from theories needed for the exploration phase to theories needed for the theory building phase. Thus, the last issues discussed were concepts of the Value of Time, Field Theory, Goal Setting, and the Goal Region, used to build a descriptive theory for SVC. Time is strongly present in the customer value experience, so its connection to customer value, and the differences in valuation of time in different situations, was discussed. The goal setting and goal achievement was discussed to present the psychological context of an individual, when using products or services to achieve something. Adapted concepts of the Goal Region and systemic consistency were combined to explain why users may experience SVC creation in either the parallel or sequential usage of parts of the system. One interesting finding was that the essential concept for the creation of SVC, namely systemic consistency, was discussed earlier in the theory of common law, where its purpose was to make it easier for the user to use the entire law system. Without systemic consistency, it would be much harder to find a common ground for decision-making, because it would take considerably more effort to solve this inconsistency before actual action. For this reason, it can be assumed that the phenomenon studied has cognitive roots in human nature, the brain performing additional processes to solve systemic level inconsistencies, and always requiring a certain additional amount of time.

4. SUMMARY OF KEY FINDINGS IN ARTICLES

I answer the first research question: "RQ1: Does the integration of an ICT offering create value for customers?" and the second, emerged research question: "What Creates Systemic Value for Customers?" with seven papers and the introductory essay.

The first three papers explore the first question, and the subsequent four papers explore the second question that emerged from the first. The results of exploratory research are not usually ready to use for decision-making as such, but they can provide significant insights into a given situation. In this study, the quantitative method used in a field study on Advanced Multi-Play offers an exception, as its results were based on a large and already segmented customer sample (N=2507), covering a population of 1.78 million people. A survey also covered the existing and future ICT usage typology, studied market transformation potential, and studied household expenditure for communication and entertainment, for an operator's strategic purposes.

4.1 Connecting customer requirements with multi-play

In the first paper, a journal article, I discuss constructing a model, which enables the systematic, fact-based process of building an integrated ICT offering, by connecting customer requirements into the multi-play business model.

The research questions in the first paper were concerned about customer value dimensions:

- What are the customer value preferences for an integrated ICT offering i.e. Multi-Play?
- By which framework it is possible to connect them into the Multiplay business model?

The conclusion of the first publication is that connecting the customer value preferences and the value streams of the business model with the QFD process provided the sensitivities of the customer value attributes and the relative importance of the model's value streams. As the customer value improvement potential in an integrated offering also relies on the general level easiness of use and convenience, then from an integrated operator's point of view, creation of easiness of use and convenience between different access networks utilization and related applications becomes an important area of development, while opening the business model up to customer's own content and content providers' commercial content seems to be a necessity.

4.2 Customer value driven innovation process

In the second paper, a conference article, a customer value driven innovation process is discussed, aimed at revealing the innovation dimensions for developing a unique integrated ICT offering. The empirical results are discussed.

The research questions of the second paper were:

- How could the most promising customer value attributes be revealed to innovate in integrated ICT offerings? Which they would be?
- How could a targeted and unique integrated offering be built from this process?

The conclusion of the second publication is that it is possible to clarify potential demand and customer prioritizations for an integrated offering as a customer oriented combination of products and services. We highlighted how to investigate customer value attributes, propose future products

and services to the customer in comprehensive manner, and how to quantify the observed importance provided by respondents, and then created correlations for willingness-to-pay and interest.

The high motivation of customers to answer the survey (N=2507) indicated their underlying willingness to change to a different kind of offering structure. The process itself was shown to produce customer-oriented results for the innovation process. Of the customers interested in the offering and willing to pay over 100 Euros for it, approximately 23% are currently paying less than 80 Euros per month for communication-related services and 8% are paying less than 60 Euros. The rest (77%) are paying over 80 Euros per month for the services, which indicates that there is some added value in the proposed offering as they are willing to pay more for the integration of services. These results were aligned with the quadruple play market research in the US conducted by Sekino et al. (2006).

According to correlation tests (Spearman's $\rho = 0.146$, $p = 0.011$), there was a positive correlation between the current spending and willingness to pay. This could also be seen from the cross-tabulation, as respondents currently spending over 80 Euros in communication-related services were willing to pay over 140 Euros in 29% of the cases. The added value increases for families currently spending more on communication services. The simple explanation by which we could assume that the money spent is relatively not that meaningful for those who already spend a considerable amount is not sufficient. There must be a better explanation, particularly for the effect of increase in willingness to pay and interest toward an offering as the respondent expenditure grows.

The general interest towards advanced integrated offerings was best explained with the "Making everyday life easier" dimension. It has the largest coefficient of all of the explanatory variables, covering integrated features and services such as, e.g. "the incoming messages and calls will adapt to users situation (user defines the reachability based on who tries to contact, when, and users location and status)," or "the user can communicate similarly with all devices in all networks, having services and content adapted to device, in real time."

Integrated cost control features and services, e.g. "the user-based limits to communication," and "service alarms the user when limit passes and status aspects," were also quite important to all of the customer segments. There were also some differences between the customer segments. One of the segments does not regard the "Freedom of place and remote use" dimension as important, while all of the other segments regarded it as one of the most important dimensions. Otherwise, the segments were relatively similar concerning the general level value attribute classes, which result was also considered an anomaly, as otherwise, testing for a single product or service, the segments tend to differ considerably.

Few anomalies were thus noted: first, the ratio of willingness-to-pay among high expenditure class increased in intensity. This did not support findings about bundling studies, and created the need to enter a search for theories capable of explaining this. Secondly, the segmentation model did not make a clear distinction between segments. This indicated that the mechanism of creation of customer value at the general level might be different from that of single products or services. That insight raised the question of how it might be different, and was a starting point for the second part of this research, turning to descriptive theory building.

A main conclusion of the second paper is that a convenience, represented by value dimensions of "making everyday life easier," and "freedom of place and remote use" is a main value driver of integrated offerings, adding extra value for respondents having high expenditure. Other conclusions were that an entity does have its own valuation level in the user's mind, which in connection to convenience as a main driver, suggests that the general level value attribute is structured around the convenience experience. This is also a logical result, common sense even,

but now it has been demonstrated empirically. Another interesting finding was the indication that the interest and the willingness to pay spread across existing segments, so our estimation of potential demand of having ICT tools that are well packaged and ready configured as a sign of customer's desired change, was definitely not falsified, but well strengthened.

To conclude, the second paper confirms the RQ1: the integration of an ICT offering does create value for customers. The limitation of the result relates to the ex-ante position of the survey, from which it is not possible to provide the actual user experience of the offering to the respondent, as most integrated features and functionalities were immature to be tested physically. This makes the numeric estimates of respondents' willingness to pay only indicate the potential value creation. But, as the sample was relatively large (N=2507), and the Cronbach's Alphas for each sum variable are rather high (the lowest value is 0.659, which is high enough for reliability purposes), it can be concluded to strongly suggest a positive value of integration, thus supporting RQ1.

4.3 Where is the value created in a multi-play value network?

In the third paper in the exploratory phase of the research, a book chapter, a framework connecting dimensions of customer value of an integrated ICT offering to a firm's resources, is discussed.

The research questions for the third paper were:

- Which could be the most important resources in contrast to customer value preferences in an integrated ICT offering?
- Which kind of framework could connect customer and resource-based strategies?

The conclusion of the third paper is that an offering integration requires new kinds of capabilities and resources. A method and process for connecting customer value and required resources is presented. The analysis revealed that the business model of a multi-play operator does not include many resources that correlate with the device related value-streams. The multi-play operator requires capabilities and resources that help the orchestration of the value network of the offering and supporting processes, e.g. contracting capabilities and device management. Also, most of the service elements are produced with the resources of other players in the network, which indicates a strong need for cooperation between the operator and device manufacturer in the case of actual market engagement.

4.4 Building theory for creation of SVC: Case Apple

In the fourth paper, a conference article, advancing into the theory building part of the research, I start to theorize the Systemic Value for Customer (SVC), by investigating the Apple case as a concrete example of a complete and successful integrated offering in ICT industry, where the benefits of the integration are designed into the products and services of the entire portfolio in the product development phase.

Key themes in the fourth publication were:

- What theoretical concepts could contribute to defining SVC in the Apple case?
- When and why would SVC be perceived by customers, and by which kind of customers?

The conclusion of the fourth paper is that, through the years when enlarging their portfolio, Apple has been successful in developing systemic consistency between interfaces, features, and services

of devices, and thus, general level ease-of-use, which further provides increased convenience and might so reduce the total negative customer perception of delays (e.g. waiting time when a computer starts), both by number of events and the time spent. The results of the offering investigation support the proposition that most prominent theories explaining SVC creation build on the consistency element from the SERVQUAL model, adapted onto general or systemic level usage, with the results of Leclerc and Schmitt (1999) about the value of time and the concept of the Goal Region.

4.5 Building theory for creation of SVC: Case integrated offering

In the fifth paper, a conference article, early theoretical propositions were formulated. The studied phenomenon, creation of SVC in a customer experience, was proposed to emerge through the features or functionalities affecting the entire system or being attached to the entire system, referred as "systemic features and services." Through the literature study, the concept of the goal region, from psychological field theory, was introduced. In that context, it was theoretically arguable that the waiting increases an individual's psychological pressure, and that pressure drives an individual to find relief. This is, of course, common sense, but the assumption became theoretically testable. In the case study, the observation was investigated within the context of multiplying usage events.

Key themes for the fifth paper were:

- What theoretical concepts could contribute to defining SVC in the AMP case?
- When and why would SVC be perceived by customers, and by which kind of customers?

The contradiction detected in a survey between the interest in the integrated ICT offering with new proposed features, and the importance of needing centralization benefits and discounts when purchasing a simple bundle was quite visible. As the contradiction increased towards the higher expenditure classes, based on our assumed linkage between high expenditure and a large number of usage events, it could be estimated that respondents, with a probable time pressure, observe some added value in the improved usage of the offering that they believe can relieve that time pressure.

With the results, we demonstrated that current high expenditure correlates positively with the high importance given to functionalities that are either similar or identical for all devices, and those services available through all devices. Those features seem to decrease perceived complexity and support the user in usage situations. Assuming that high-spenders have a higher number of single communication events than those spending less, we could propose that they would appreciate the benefits of deeper integration providing more speed while changing a communication device, network, application, and/or social context.

It can thus be assumed that respondents were willing to pay to avoid losing time when entering into the Goal Region (with any device selected), similarly as proposed in the literature (Leclerc and Schmitt, 1999). Thus, the goal region concept was proposed to explain the time perspective on why people already spending high amounts for their ICT services would spend even more if those services were offered as a properly integrated solution. The consistency between offering components was also proposed to be a source of emergent, systemic customer value as it decreases the expected waiting time by bringing similar familiarity of the usage at the system level, differently from how it happens with a single component. The Pre-Goal-Region Tension Curve constructed could be also useful for understanding the customer's ability to resist tension in complex ecosystems.

A conclusion for the fifth paper is that features and services affecting all components, or being affected by all components, are clearly drivers for convenient functioning of an integrated offering. Also, a clear difference between existing consumption and willingness to consume more for an advanced, systemic, more developed, and more deeply integrated offering in all segments indicates the growth potential that may be captured when technologies permit this kind of consistent and systemic offering environment to be built.

4.6 Exploring the creation of SVC in advanced multi-play

In the sixth paper, a journal article, I proposed a theoretical explanation of SVC, and tested early hypotheses with a comparative analysis between different expenditure classes, onto the entire sample (N=2507) from the earlier survey discussed in paper II.

Key themes in the sixth publication were:

- What theoretical concepts could contribute to defining SVC?
- What kind of elements would be included in a theoretical model for the creation of SVC?
- What is the nature of the linkages between a model's key concepts?

To provide an explanation for the invariance found in the cross-sectional survey, and rooting it to the theory being built, two propositions were introduced:

- P1: Designing systemic consistency in the form of integrated features and services between heterogeneous parts of an integrated offering decreases the goal transition effort in a repetitive, context-changing, Pre-Goal-region phase.
- P2: The higher the expenditure, the more Goal Region events the user has, and the higher his or her willingness to pay for integration that reduces waiting time in the Goal Region phase.

The propositions were transformed into the two testable hypotheses:

- H1: Respondents give increasing importance to SSO as their estimate of expenditure increases.
- H2: There is significant and increasing contradiction among respondents between willingness to pay for integrated offerings and the importance stated for obtaining discounts if offered a plain bundle.

In the cross-tabulation, the difference between the actual and expected count in the spending class was found to be over 80 Euros per month (N=883), which indicates a potential added value. Both Spearman's correlation and Kendall's tau-b have Approx. Sig. smaller that 0.05 which indicates statistically significant correlation. Values between 1 and 0 indicate that a positive correlation exists. Here, the values are far over 0, 0.372, and 0.421, respectively.

The increase of interest related to higher spending can be understood by the goal region concept, as those spending a significant amount have to enter the Goal Region numerous times per day with a variety of devices and user interfaces, and would thus enjoy the consistency between them, saving their time. In this case, they observed positive value through a reduced expected waiting time (Leclerc, 1999).

Results also indicate the increasing importance given to the Single-Sign-On functionality when progressing towards the high spending classes. This can be understood again by the goal region concept, as low spenders have relatively few sign-on events, so they would enjoy the feature by its low variety (one password). Users that have highest levels of current expenditure reported the most significance of this "single-sign-on" functionality. That could be understood by the multiple sign-on events, i.e. that they have to enter the user name and password multiple times per day, expecting to lose time at each occasion, and would thus benefit from the automated functioning of that feature to save time. In this case, they observed positive value through reducing expected waiting time (Leclerc, 1999).

We also compared the subjective consumption estimate of families about total communication services and the willingness to pay for an advanced total offering. Connecting those results to tested classes of new technologies, features, and services, the customer view on their estimated observed added value for a package becomes apparent, and also how much more they would potentially pay compared to existing costs. These exact results were not presented in these papers for reasons of confidentiality. It is understood that these figures just give an idea of customer value creation. To make the value adding potential still clearer, the comparison between two measurements was analyzed; the importance stated for requiring centralization benefits and discounts when purchasing a plain bundle of existing products and services, and willingness to pay for the advanced integrated offering. The trend is the same in both, and a strong contradiction exists. Thus, we can conclude that certain percentage found of customers observe the value creation potential for integration as such, and for integrated ICT offerings, in this case, for the proposed virtual concept of Advanced Multi-Play.

The Pre-Goal Region curve shown below in Figure 7, derived from theory of the goal region effect, was suggested to describe the creation of demand potential for SVC, and was indirectly supported by the results.

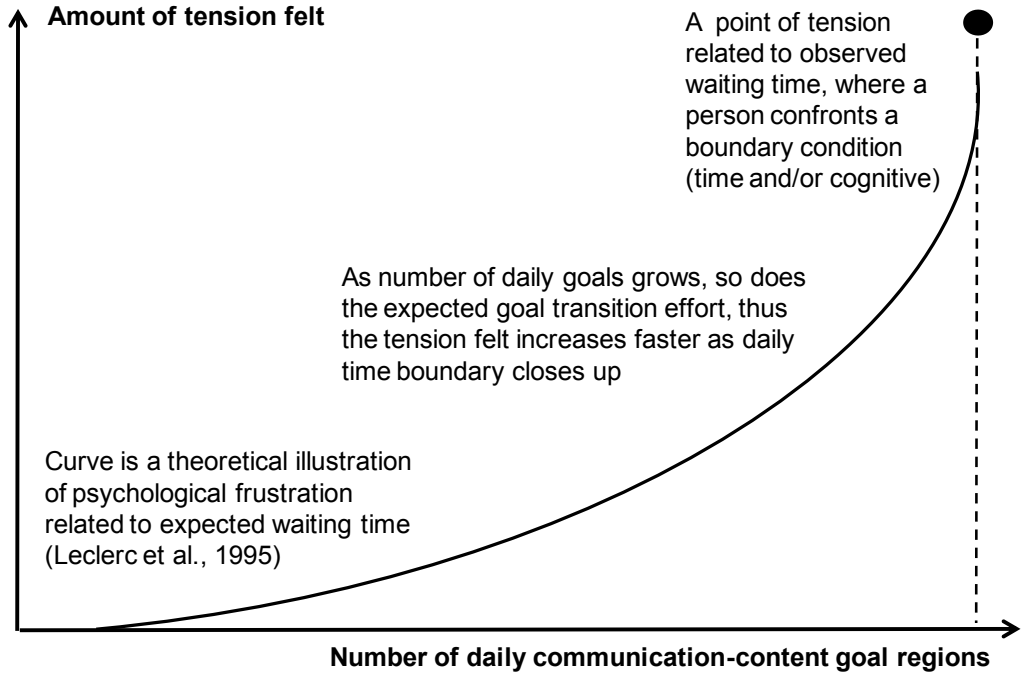

Figure 9: Pre-Goal Region Tension Curve, where the number of goal regions increases similarly to the Pre-Goal Region waiting time (losing value of time), and then under the boundary condition of time and cognition, the psychological tension felt by an individual starts to increase.

To conclude, the Goal Region concept (Leclerc et al., 1995) was proposed as a time boundary condition to explain why people who already spend a large amount of money on their ICT services would spend even more if those services were offered as an integrated solution, promising them further relief from an expected loss of time. The concept of systemic consistency between offering components was proposed as an essential driver for the creation of SVC as it decreases the expected waiting time by reducing individual effort (remembering, re-learning) in goal transition phases when using a system, differently from the case of a bundle.

As another conclusion, if the proposed SVC value component proves to add customer value in further normative research, it becomes obvious from a customer value perspective that current sub-sector regulation hinders telecommunications operators to answer the potential demand for the SVC type of customer value. Thus, regulation restricts the growth in this sense.

4.7 Modeling the creation of SVC in advanced multi-play

In the seventh paper, a conference article, I propose a theoretical model for the creation of SVC, referred as an SVC-model.

Key themes in the seventh paper were targeted to create a model for SVC creation, and to discuss the model's implications for research and practice:

- What kind of elements would be included in a theoretical model for the creation of SVC?
- What is the nature of the linkages between a model's key concepts?

For modeling purposes, the value type of Efficiency (Holbrook, 1999) was examined in axiological setting as the main SVC value attribute within the context of integrated ICT offerings. The Efficiency value type, with the examples as the ratio of outputs to inputs (O/I) and convenience, directly relates to telecommunications usage with the usage of electronics equipment and applications (hardware and software). Tangible and intangible ICT goods and services are primarily designed to be digital tools for, e.g. helping an individual to establish the communication event from a distance, or creating, editing, and sending a document in a faster and more convenient manner. In addition, other value types were discussed. An advanced multi-play concept includes many new features and services, improving the user experience at an advanced level – as a customer value type of Excellence. Value types of Play, Aesthetics, Esteem, and Status could be estimated to present other, potentially derived value types of SVC. Aside from the SVC-model, analysis on the nature of the SVC was conducted in paper VII.

One person can only accomplish a limited number of daily Goal Regions with all variations, but the amount and typology achieved is extremely personal. Similarly, there is certain maximum number of daily Goal Regions taking place daily for information, communication, and entertainment. In ICT, products and services are used as either a utility or as tools enabling the user to communicate, compute, or to be entertained digitally, and the potential capability to reduce the time spent in achieving these goals places a goal transition effort into a crucial position in customer value creation. When the Pre-Goal-Region waiting time multiplies as the amount of Goal Regions increase, an individual starts to observe the approaching daily time boundary (see PGR curve at 4.6) and the user needs to begin prioritizing tasks or seeking efficiency improvement. Improvements of systemic consistency were seen theoretically as a driver for increasing SVC.

The reduction of time spent waiting, especially in a goal transition phase of system usage when changing a device (part of the system), is a key point of this study, as the time reduced presents a time slot to be used for other dimensions of customer value creation for an actual goal. A time is absolute, and not to be re-experienced, and that specific time saved can be used for other, more valuable customer value experiences, it can be seen as a growth area that customers would value. If the waiting time in these transition phases stays the same, the boundary condition of time will limit the amount of possible goal regions, i.e. goals achieved. If the offering is designed so that the specific integrated systemic features or functionalities (assistive capabilities), and/or designed systemic consistency, can cut down the waiting time in transition periods, SVC can create added value by increasing the time for goal achievement. This is key to understanding the specific character of SVC.

The SVC-model presented in Figure 10 explains the reduction of goal transition efforts through which repetition of the SVC begins to emerge. Arrows present the time sequence between boxes of activities, not causality. Boxes of waiting time and cognitive effort describe the emergence of effort in the box goal transition effort. If the transition to Goal Region is experienced as consistent at the systemic level, **time is saved distinguishably** from other ways of saving time, and **value is created distinguishably** from other ways of creating customer value. It is genuinely systemic. This is the foundation for the concept of SVC, and by the theoretical analysis based on axiology, seems to create an efficient and convenient experience as the main customer value attributes.

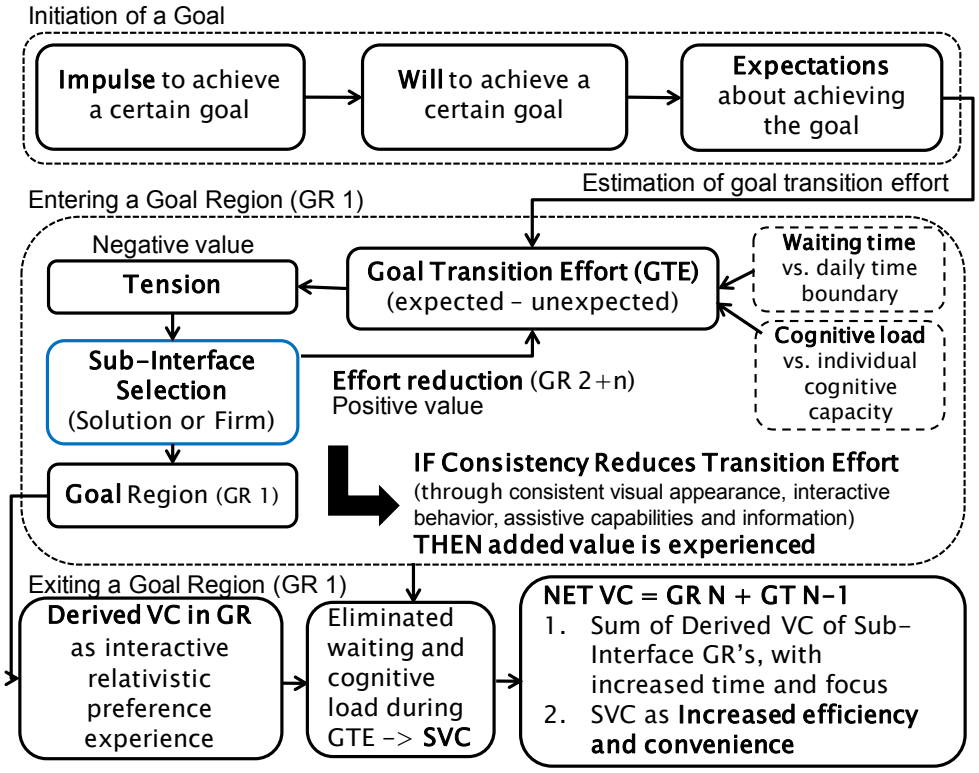

Figure 10: SVC-Model, where systemic consistency in repeated goal transition effort reduces systemically waiting, re-learning, and remembering.

5. CONCLUSIONS AND DISCUSSION

5.1 Key findings of the research

As respondents' observed added value in a survey increases together with the importance for bundle discounts (a contradiction in observed value creation), while expenditure increases, we can conclude that the presentation of integrated features and services increase the value in advanced integrated ICT offerings, although we are unable to determine the exact magnitude. As one presented example of an integrated feature, Single-Sign-On, being a systemic feature, gets increasing importance as a feature with increasing expenditure, we can conclude that integrated systemic features that are presented do increase value, although we are unable to determine the magnitude. From the interpretations of our results, it becomes clear that convenience increases general level creation of customer value. The main findings are listed below.

Key findings, in temporal order, are:

1. Efficiency is a primary value attribute for general level value creation
2. It is essential to observe goal transition phases during usage, affecting the general level customer value creation in either an integrated offering or solution
3. Theorizing the goal transition phases to be an integral part of customer value creation of either an integrated offering or solution
4. Pre-Goal Region curve explaining why reducing the waiting time increases customer value
5. Developing the concept of systemic consistency
6. SVC model explaining how a repeated transition effort provides systemic value if being consistent
7. Theorizing the creation of SVC based on the customer value typology of Holbrook (1996)
8. SVC definition: "consistent convenience experienced in repeated goal achievement"
9. Deriving the relationship, "the more complex the individual environment becomes, the more systemic consistency is needed to be implemented to maintain same level of individual efficiency."

The concept of the creation of the Systemic Value for Customer is logically argued to exist and is modeled here. Moreover, we can expect that further research will prove that value is created in service transition phases in usage, as well as by unifying / eliminating time-consuming procedures through integrated features and services. In the context of earlier theories, experiencing convenience seems to be the most relevant example of an Efficiency type of customer value (Holbrook, 1996). As the absolute time saved can be put to further use for other activities, and then used to experience other types of value, SVC effects cannot be theoretically reduced only for efficiency, but also for Excellence, Play, Aesthetics, Esteem, and Status. Based on the axiological discussion in paper VII, and chapter 4.7, the SVC is placed into the customer value typology of Holbrook (1996) in Figure 11.

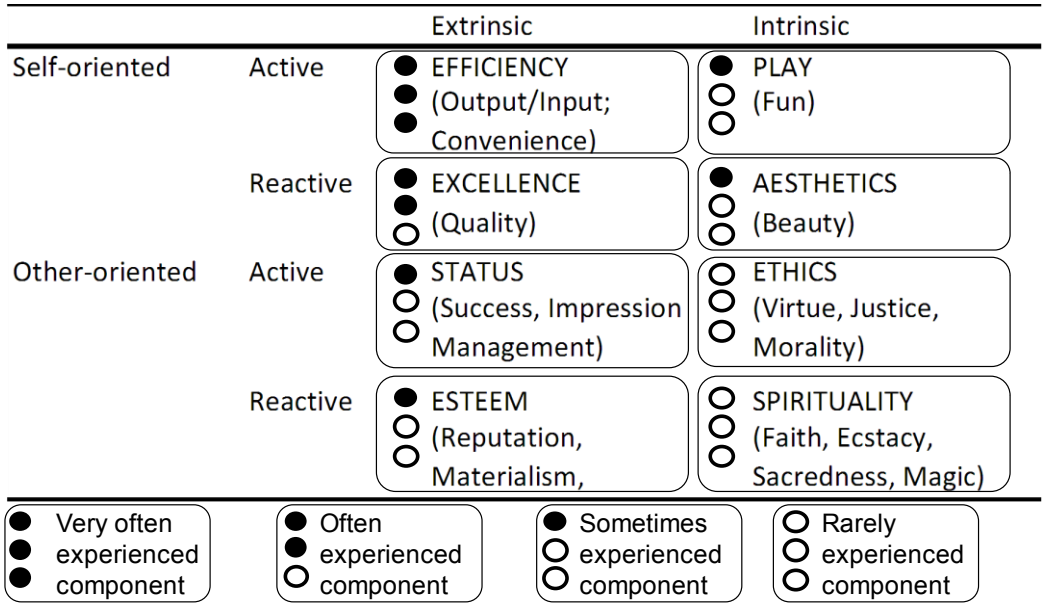

Figure 11: Positioning the SVC experience in the typology of customer value (Holbrook, 1996). Black dots describe the theoretically analyzed degree of experience in value types.

Based on the definition of convenience introduced by Farquhar & Rowley (2009), customer value typology of Holbrook (1996), user interface dimensions (Apple) including systemic features and services (VI), convenience as a general level customer value attribute experiences by the value type of Efficiency, (I, II, III), and the concept of systemic consistency discussed and proposed in papers IV, V, VI, and VII; a definition of SVC can be proposed as:

> Consistent convenience experienced by the customer, emerging from consistent visual appearance, interactive behavior, assistive capabilities, and information at a system level, converging customer's separate learning and memory processes when achieving goals with a system.

Convenience is not only general level customer value attribute created in SVC, but probably the most influential and primary one. A concise SVC definition can be stated as follows:

> Consistent convenience experienced in repeated goal achievement.

If the complexity of an offering through which the personal goals are achieved increases, it adds the inconsistency, and thus, inconvenience for an individual acting within. From that above definition of value creation, we can interpret a relationship where the increase of complexity of an environment increases systemic inconsistency to an individual achieving a goal in that environment:

> The more complex the individual environment becomes, the more systemic consistency is needed to maintain the same level of individual efficiency.

The goal transitions repeated effortlessly between parts of the system when achieving goals are seen here to systemically increase the efficiency of the customer's own goal achievement process, thus increasing SVC, experienced as convenience. Customer value is created by a reduction of waiting time and/or liberating free time, but also by allowing customers to achieving goals faster than those individuals with inferior ICT tools. Internal efficiency also enhances the time base advantage in competition.

To conclude by answering Research Question 1, the integration of an ICT offering does create value for customers. To answer Research Question 2: "What creates the Systemic Value for Customers?", the Pre-Goal Region Curve, the concept of Systemic Consistency, the SVC definition, and proposed SVC-model are proposed to construct the descriptive SVC-theory, enabling further measurement and future development towards normative theory building.

5.2 Contributions of the research

Contribution to prior customer value research

The results of this exploratory and theory building research suggest adding a systemic perspective to the research of customer value. While achieving many sub-ordinate goals to achieve a focal goal, an individual uses different products and services, which are heterogeneous parts of the system, and thus has to cope with their natural inconsistency. Reducing that inconsistency presents a frontier of new benefits of customer value. This theoretical result is not only limited to the ICT industry, or products and services used, but also to a situation where a customer is interacting with a company. When interacting with any company, the individual faces a complexity of an organization in terms of various different channels to achieve a specific, individual goal.

Observing the goal transition phase, from the perspective of systemic consistency adding value (between changing different devices, features, services, and applications), the new position to observe becomes one essential contribution of this research. The definition proposed for systemic consistency, which is used in SVC theory building, could help researchers to obtain new ideas when studying individual behavior in a complex environment:

> Systemic Consistency enhances user performance and dependability by consistent visual appearance, interactive behavior, assistive capabilities, and information between the system components, creating a sense of one systemic interface to the customer.

The area of value of time, and especially the results of Leclerc, Schmitt, and Dube (1995), (particularly the negative valuation of waiting time at Pre-Goal Region) offered a new perspective within the context of ICT. When thinking about an individual's work hours and free time and the limited daily time being awake, it is a most natural boundary condition for a human being. If there were any possibility of prolonging efficient time versus time wasted by hassles within that time boundary, it would certainly offer added value for the customer. The concept of goal region helped in understanding the tension creation, and that the tension also creates a potential demand to a solution reducing those Pre-Goal Region phases (and After-Goal Region phases). The Pre-Goal Region curve was helpful in explaining the trigger for the user to start searching for better solutions. As daily time has its limits, dividing it into the goal region and Pre-Goal Region phases helps in understanding why those customers with high numbers of daily communication events prefer complete and integrated ICT offerings, which would have a high level of internal consistency, potentially providing extra time savings. The SVC model and SVC definition, with a

concept of systemic consistency, form a descriptive theory about the general level customer value creation, which can explain what "fitting together" means and does for an end customer, and why some integrated solutions are better than others, while including exactly the same products and services.

Axiology was found to be a solid theoretical foundation to build the construct of SVC. By discussing the Advanced Multi-Play concept in the context of typology of customer value of Holbrook (1996), it appeared that Efficiency (convenience) is quite probably the main, but not only, value type of SVC, i.e. creating distinguishable systemic time savings and thus enabling creation of other value types, and by enabling other activities, enhancing the value creation of goal activities.

In addition, the concept of Advanced Multi-Play, with its additional integrated features and services between intrinsic offering components, seems to increase the general level convenience and ease of use (Papers I and V). These inherent attributes probably positively affect the usage of complementary services (complement network attributes), thus further increasing perceived complementary service quality and variety. To simplify in the context of integrated ICT offerings, the less time a person spends waiting when entering the goal region, the more time s/he has to act, perform, or enjoy in the goal region. If the system consistently provides the person with a well fitting tool for a task at hand, which is immediately in use (or faster than in a non-integrated bundle), the person moves faster to a highly valued situation from a less valued situation, and the integration creates value for the customer.

The presented SVC-theory suggests several additions for the research area of customer value, not only limited to integrated offerings. First, the concept of derived or experienced value should start from the moment when a customer considers using a product or a service to achieve a goal at hand. The brand is selected in this moment; and it seems to already be in the area where customer value is derived from the product or service, here, e.g. "the strong brand made the choice easy, by making expectation of a goal achievement seem easy." This process of selecting a "tool" (solution for a problem to achieve a goal) may be unique to each product and service, and accepted as so. However, within the context of a bundle or an integrated offering, it might increase complexity for a customer, and conversely, might provide a competitive advantage based on reduction of that complexity.

Contribution to management practice

Customers seem to experience the value of a product or a service already when thinking about entering their task and beginning to use a product or a service in order to reach their goals, outside of actual usage experience of a product or service. This happens through expectations of reduced time spent and relief from cognitive load, e.g. re-learning forgotten functionalities of a product. The brand is selected when an individual begins to figure out how the goal can be achieved. The brand creates value for the provider if the product or service gets selected and for the user if the choice can be made quickly. Managing those expectations with an understanding about the customer goal achievement space will be crucial for managing integrated offerings and solutions.

In the solution setting, the temporal area when changing tools (parts of the solution) to achieve a focal goal can be described as "components fitting together." First, you must have the right components in a solution for your customer to solve customer problems related to a specific domain. Secondly, they need to be designed in a way that makes the usage as fast and convenient as possible. The latter can be done by adding systemic consistency into the offering, in the form of information, assistive capabilities, interactive behavior, and visual appearance. The proposed model for the creation of SVC indicates that those transition periods, when changing from one solution component to another, include the value experience at a systemic level. The transition

period can be seen to be included in the usage process of any product or service, but only if transition periods towards using the product or service are consistent in a systemic sense. The integrated offering thus becomes systemic, and begins to create the SVC. The value of integration does not end with superior user experience. When using a well-integrated system, it frees time for the customer to use in actual goal achievement. From here, we can see both the customer's internal efficiency benefits arising with the increased competitive capability, based on time.

From a marketing strategy perspective, the reduction of the inconsistency effect can be used for increasing customer value in at least two areas: superior creation of functional/instrumental value to compete with product leadership strategy, and the creation of superior experiential value to compete with customer responsiveness strategy. Furthermore, the firms competing with superior cost/sacrifice value can find the internal reduction of inconsistency driving efficiency and effectiveness as well (Smith and Colgate, 2007)

Building integrated offerings should include the design step of those transition periods between the products and services in an imagined multi-task usage of the customer. When the customer is using two or more components of the solution, sequentially or parallel, with systemic consistency designed into the solution, it will become faster and easier to use as a whole. This produces two competitive advantages for the customer:

1) Efficiency for the customer, enabling more tasks to be completed or free time for other uses, with an increased focus effect – with the same effort and energy
2) Advantage of speed in competition, a specific focal goal (big task or a project) can be completed faster, and is ready before the competitor's.

When the improvements of systemic consistency are executed in your portfolio of products and services (those that customers use either sequentially or parallel), either as a solution or modular, they need to be communicated to the customer. Only then can the customer consider your offering's superiority in their goal initiation phase.

To conclude the exploratory phase of Advanced Multiplay, many managers in the target company (the researcher included), were surprised about the results, because in that time period, none could comprehensively explain why people already paying a significant amount would pay even more for advanced integration. After realizing the linkage between high expenditure and the amount of separate usage events executed with various devices, thus setting the daily time boundary condition for tasks (goal regions) to be completed, and by introducing the negative value of waiting time and the concept of systemic consistency, the "mechanism" for SVC creation finally revealed itself for the first time.

From the marketing and strategy perspective, the customer segments should be now re-segmented based on an appreciation and need for SVC. In order to accomplish this, an operator must collect the aggregated and anonymous data about personal daily usage events and types from all networks, and create a profiling method to extract the creation of psychological tension. This will help managers to understand the effect of their decisions, how to integrate each specific offering component, and systemic features or functionality. From the survey, we saw that most of order-winner and order-qualifier functionalities were favored across the segments. The most critical sacrifice gaps relate to the operators' inability to manage terminals sufficiently enough to offer customers a fluent, seamless experience. This was visible in observed frustration regarding to starting configurations, inconsistently operating software and applications, inconsistent usage logic between devices, and various passwords in written answers to open questions. The value network analysis in Paper III showed that the terminal management capability is one necessary

success criterion for Multiplay business. As operators cannot begin the equipment development, in order to create the full spectrum of customer benefits based on, or related to SVC, they would need equipment vendor collaboration in their value network, which could, in configuration collaboration, produce attractive, interoperable devices, and collectively form a service ecosystem with a reasonable price. The capability to do so also depends on the capability to co-design and even co-produce products with customers, which can further provide mass customizers of a provider with the ability to capture valuable new knowledge (Pine, Victor and Boynton, 1993). Also, as an integrated ICT offering is rather complex entity, the sales person meeting the customer must possess the ability to help the customer to adapt and alter the personal offering environment. This suggests an adaptive customization: offering one standard, but customizable, an integrated ICT offering that is designed so that users can alter it themselves (Gilmore and Pine, 1997).

The reduction of time spent waiting by adding systemic consistency into an integrated offering or solution, especially into the context of changing a tool for a new goal, is a key contribution to management practice. The time reduced presents a conquered time to then be further used for other activities creating customer value, resulting efficiency, and speed advantage for a firm, and efficiency and convenience to the end customer. As time is absolute, and not re-experienced, and the time saved from hassles can be used to create more valuable customer value experiences, the SVC theory provides insights into a growth frontier that has not yet been conquered.

5.3 Assessment of the research

This section discusses the internal and external validity and the reliability of the research, focusing mainly on the data and results of the Advanced Multiplay survey, as it served as the main form of measurement to provide insight into the exploratory and theory building phases of this research. The validity of the theory building is also discussed as an essential contribution of this research.

Internal Validity

Validity is concerned with whether a measure actually measures the concept that it is being used to represent (Carmines and Woods, 2005a). In science, this relationship between the theoretical and the observable is crucial. The unobservable concept is the quantity of interest; how it is measured, or represented, is fundamental to any understanding of the inferences concerning the relationship among the various theoretical concepts (Carmines and Woods, 2005a). Validity is best thought of as a degree, since no variable completely captures an abstract concept (McDonald, 2005). In the absence of tried models and definite theoretical concepts, this exploratory study started with a holistic look at the objects, by gathering as much information about the objects as possible, and postponed the task of cutting away unnecessary data until a better picture was achieved regarding what was necessary. However, in the AHP measurement on Quad Play, respondents were able to recognize the object measured, the general level customer value attributes of convenience and ease-of-use in the Quad Play concept. Thus, the validity of that measurement was strong enough to advance to the next phase of exploration.

Some criticism must be presented regarding to the research methods used. Asking respondents will always include unexpected, unwanted bias in subjective answers. But, as a survey is the most likely tool to be used to conduct a business study, its validity issues must be taken in consideration.

Construct validity is concerned with the relationship between the measure under consideration and theoretical expectations on the other measures (Carmines and Woods, 2005a), i.e. the extent to which operationalizations of a construct (e.g. practical tests developed from a theory) do actually measure what the theory says they do. The construct to measure, the attribute classes of general

level customer value for an Advanced Multiplay, were validated to the extent possible in order to provide directions for the creation of customer value for the studied offering concept (paper II), as the value creation was validly indicated by each indicator class of the construct.

Content validity focuses on the extent to which a particular empirical measure reflects a specific domain of content (Carmines and Woods, 2005a), i.e. the systematic examination of the test content, to determine whether it covers a representative sample of the behavior domain to be measured. To enhance content validity, the research content of advanced functionalities was created through two extensive workshops with the operator company's professionals in R&D, Marketing and Product Management, thus covering most of the aspects for future product development of an operator, where future functionalities were first put into attribute classes (representing customer value creation types at the general level) according to their intended usage. When building a survey instrument, technical terms were translated into simpler and more popular every-day language for validity purposes, to assure respondents understanding. This was done in separate workshops, and technological language was translated into non-technological language by replacing all abbreviations and acronyms. The language was at such a level that a customer could explain how a specific technology or service would benefit the customer in daily life. Then, the questions were given first to an academic partner for comment, then to a market research agency, and finally, to an interviewing agency, all of which came up with useful remarks and improvements from the respondent's point of view. The questionnaire was tested and improved three times. After this lengthy process, we were ready to launch a questionnaire that contained importance statements on topics that did not yet exist as real services in the market. We recognized that this step was quite critical. This part of the process was extremely time consuming, but played a central role in acquiring valid data, and significantly improved the validity of this research. Next, we designed a model that would be able show the relative importance of attribute classes, which are not directly linked to any single new functionality tested. After these efforts, respondents had a better understanding of what was required of them to evaluate and answer, and the content validity can be concluded satisfactory.

One threat to validity is that an incomplete definition of the concept is proposed (McDonald, 2005). The theory and the nature of the constructs investigated determine whether the empirical results support or invalidate measures in nomological validity investigations (Peter, 1981). A fundamental problem in studies such as this is that customers are not able to reliably predict what they will value in the future (Huber et al., 1997; Woodruff, 1997). Decision makers can make the wrong prediction about the salience of choice alternatives, the impact of concurrent outcomes, the general reference level, the period, or the sequences over which the outcomes are evaluated, and finally, the effect associated with the timing and frequency of memories of the outcomes. These sources of variability have different implications with respect to how much future events should be discounted in choice processes (Huber et al., 1997). In preparing and executing our survey study, we made an effort to verify the motivation to change, satisfying, non-differentiation, and response-order effects in a number of ways, which enabled us to analyze subjective answers in a sufficient manner due to the operator's strategic target of estimating transformation potential.

We chose to ask customers to rate the importance of each object individually, allowing us to derive the rank order implied by ratings, for a large amount of data. As we placed each new functionality into one of 6 different service usage attribute classes, we were also able to rate these classes. Another reason for choosing ratings was that they are much less time consuming than rankings. Further, people enjoy ratings more, and are more satisfied with their validity (Krosnick, 1999). Response order effects were eliminated in this section to inquire as to the importance of new functionalities by random order generation of service usage attribute classes and their object contents in a web-based survey engine, i.e., each respondent received a unique web questionnaire to answer. Placing rating questions later in a questionnaire makes correlations between ratings on

the same scale either more positive or less negative (Krosnick, 1999), which are the expected results of non-differentiation. For this reason, we placed the part of the importance estimation of new future functionalities at the beginning of the questionnaire.

To reduce satisficing and increase optimizing answers, we needed to foster conditions that reduce satisfying and increase the motivation to optimize. The likelihood that the respondent will try to satisfy when answering a question may be a function of three factors (Krosnick, 1999). Satisfying is more likely to occur when (a) the task is difficult, (b) the respondent's ability is low, and (c) the respondents motivation to optimize is low. Task difficulty is a function of the difficulty of interpreting the meaning of a question and response choices, the difficulty of retrieving and manipulating information in memory, the pace at which an interviewer reads, and the occurrence of distracting events. Ability is presumably greater among respondents who are adept at performing complex mental operations, practiced at thinking about the topic, and equipped with pre-formulated judgments on the issue. Factors influencing a respondent's motivation to optimize include: the need for cognition, the personal importance of the question's topic to the respondent, beliefs about whether the questionnaire will have useful consequences, the behavior of the interviewer, and fatigue (Krosnick, 1999). We also attempted to increase the respondent's motivation to optimize by creating a sense of urgency by stating the important role of a customer in new concept development for his or her own operator.

Key theoretical fields used for the theory building phase were: axiology in philosophy, field theory from psychology, derived goal setting theory, and service quality research from business research. All of these are well-established academic disciplines. They have all contributed to the contemporary discussion on customer value. In the field of marketing, a Value for Customer (VC) framework built by Woodall (2003), was used as a framework for analysis, and Derived VC as a building block for SVC-theory. The theories on which the SVC-theory was rooted are shown in Figure 12 below.

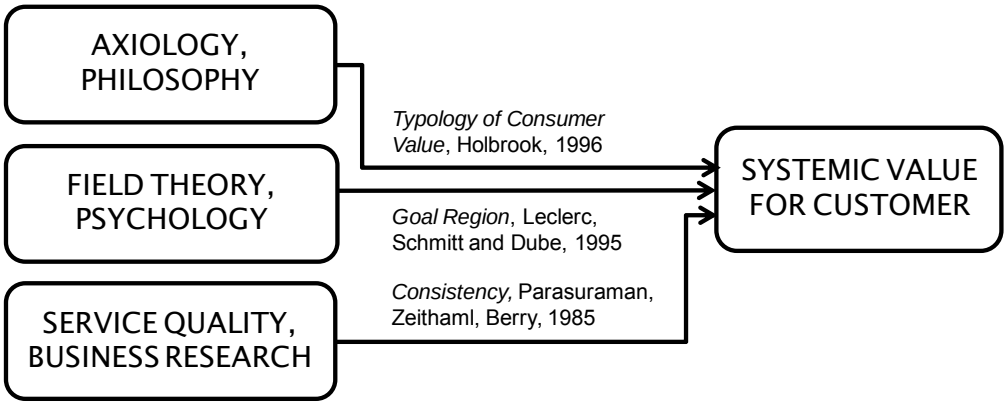

Figure 12: Theoretical backgrounds of the proposed SVC concept.

Customer value typology built by Holbrook (1996), in area of consumer research, played an essential role in theory building, as the value experience from SVC seems to relate strongly to the multiplied convenience experience. Holbrook's typology is rooted in axiology, an area of philosophy considering the valuation of things. Re-theorizing the customer value type of SVC was done through revisiting the axiological foundation of the customer value typology of Holbrook, to assure the validity of the re-theorizing process. The convenience experience in an offering level can be also understood by goal achievement in time, findings based on psychological field theory, and preceding waiting times, discussed and validated by Leclerc, Schmitt, and Dube (1995).

Finally, the concept of systemic consistency was adapted from widely used service quality research in business research, to explain what factor can make a multiplied convenience experience valuable from a systemic perspective. On these grounds, theory building appears to be based on valid theoretical concepts.

Theory construction can be characterized by its structure. By structure we mean the concepts in a theory, the hypotheses made by the theory, the observations and measurements included in the theory, and these elements' formal organization in an overall representation. Any structure will, therefore, have semantic and syntactic dimensions (Bagozzi, 1984).

After the SVC-model was formulated, theory-based propositions about customer response behavior could be drawn (Paper VII). Their predictions were not falsified, which is the end point of this research, indirectly validating the theory building at part two of the research. Reliability discussed in Paper VII supports the validity of this comparative data recompilation.

The validity of the theory building process can be argued to be an inductive process, starting with the theory creation as an observation and describing the phenomenon, then classifying it into categories, and finally, associating the category-defining attributes and the outcomes observed (Carlile and Christensen, 2006).

Reliability

Reliability focuses on the extent to which an empirical measurement yields consistent results in repeated trials. The more consistent a measure is, the more reliable it is (Carmines and Woods, 2005b). Reliability of measurement encompasses the research design strategies and statistical estimation methods used for assessing the relative consistency of measurement in specified populations using maximally similar efforts to measure the same quantity or attribute (Alwin, 2005). The survey acts as a main measurement instrument. The data was used twice in this research, and thus, its internal consistency was crucial. The new functionalities (targets of measurement) were challenging to verbalize. Therefore, to present it to the respondents, and those future features and services as variables, was impossible to observe directly as they do not exist yet.

In the measurement, the chosen attribute dimensions were constructed with a principal component analysis. This analysis was conducted on each of the chosen six dimensions and they included all of the 36 variables (new functionalities). In a principal component analysis, the constructed components represent the variables relatively well and still contain enough variation for further analyses. Reliability analysis was conducted on the sum variables. The internal consistency of each variable was tested using Cronbach's alpha. The alphas for each sum variable are rather high. The lowest value is 0.659, which is high enough for reliability purposes. The smallest alpha is with the sum variable "Technical support," and it consists of only 3 variables. A low amount of variables tend to have a low alpha, but in this case, alpha for each variable is sufficiently high. In conclusion, it is possible to say that the sum variables have high reliabilities. Thus, the components can be seen as internally consistent. The structure and details of the field survey are explained in detail in Paper II, including the assessment of the measurement's consistency and reliability. Thus, reliability of the survey results supports the validity of the research in parts one and two.

External Validity - Generalizability

External validity stands for the generalizability of the relationship between two concepts beyond the research question under study (McDonald, 2005). As the number of population studied (N=2507) and the response rate were high (21% of 12000), it can be expected that similar or

smaller samples would result similar responses as in papers I, II and VI, and especially when the results of AHP survey were similar (Paper I).

Generalizability can be limited when the cause (i.e. the independent variable) depends on other factors; therefore, all threats to external validity interact with the independent variable. The sample may have certain features that may interact with the independent variable, limiting generalizability. In the survey, those 12000 customers having an email address were selected as a target sample, and then those reading their e-mails were those that potentially responded. The response rate of 21% still indicates that sample of respondents represented the population well.

All situational specifics (e.g., noise, location, lighting, treatment conditions, time of a day, time limitations to answer, treatment administration, investigator, timing in general, scope, and extent of measurement, etc.) of a study potentially limit generalizability. This perspective on limitations is hard to estimate for a survey, but from an investigator limitation perspective, the survey was conducted under the brand of the telecommunications provider to its customers, so this might bias the responses in a positive (or negative) direction. Pre-Test Effects, i.e. if cause-effect relationships can only be found when pre-tests are carried out, also limits the generalizability of the findings; and Post-Test Effects, i.e. if cause-effect relationships can only be found when post-tests are carried out also limits the generalizability of the findings. These seem to be irrelevant to this research, as all of the different studies indicated the same direction.

Reactivity, i.e. if cause-effect relationships are found they might not be generalizable to other settings or situations if the effects found only occurred as an effect of studying the situation, is hard to estimate in this descriptive phase of the research. It is more the role of future normative research to answer this question.

Because this is a descriptive stage of SVC theory and the SVC model, in order to be generalized, the research on the phenomenon studied needs to have a second step, a normative research approach, to arrive at results that can be applied generally into the field of business research. It can be logically argued, based on SVC-theory and the SVC-model, that the hindering and time-consuming effects of systemic inconsistency are based on human capabilities of cognition, which are rather generic for any individual, and also un-avoidable.

To conclude, the SVC-concept is theoretically general, but at the descriptive stage. At the current stage, deriving purely from the general theories in which the SVC-concept is rooted, the concept can be transferred to other industries and product categories only to describe any situation where a person uses two or more tools (products or services, customer service) to solve problems in some specific domain. As the basic theories behind SVC model are fairly well tested, there is no reason to assume that the SVC-model or the effect of systemic inconsistency would not apply to other industries and product and service categories, but such a claim here would be premature. The subjective results from the survey studying Advanced Multiplay apply only to that specific context.

5.4 Limitations of the research

Derived from the previous discussion on validity, reliability and external validity, it is concluded that the results achieved in the first explorative part and descriptive theory building in the second part of the research measure only the observed value for the virtual advanced multi-play offering presented, as an example of an integrated ICT offering. It is important to note that especially when measuring a new concept, it is easy to forget that a questionnaire is also a source of information that respondents draw on in order to determine their task and to arrive at a useful and informative answer (Schwarz, 1999)

In order to shed light on this challenging phenomenon, many theoretical approaches have been discussed. Several approaches, otherwise quite useful, e.g. the Technology Acceptance Model (Davis, 1989; Chuttur, 2009), Value as Utility (Varian, 2010), and Complementary Value Creation (Amit and Zott, 2001; Chambers and Echenique, 2008), were limited due to the scope of this research, as theories obviously not being capable of explaining why the customer value can be created at the general offering level. The discussion about the creation of customer value was quickly and purposefully limited to a moment in time and context where customer experiences (Holbrook, 1999), derives (Woodall, 2003), or receives value (Woodruff, 1997).

Limitations due to individual papers are discussed very briefly in the following. Papers I, II and III focused on the first research question "Does the integration of an ICT offering create value for customers?" and Papers IV, V, VI and VII to the second research question that emerged as a result "What creates systemic value for customers?"

Papers I, II and III, answering first research question, were strictly to the study of the ICT context, thus their results are likewise confined to that industry. However, the method proposed in Paper II can probably be used more widely when studying bundles and integrated solutions of other industries. Of course one must then re-discuss the validity and reliability of the method separately. Similarly, assuring the validity and reliability, the method and process for connecting customer value and required resources presented in Paper III could be possibly be adapted to other industries as well. The method applied would always have its limitations regarding the comprehensive presentation of features to the respondent (Schwarz, 1999).

At Paper IV and V, in the theory building part of this research, the Apple portfolio and Advanced Multiplay concept were discussed from a theory building perspective as the cases where the systemic value for customer would emerge to the user. To generalize SVC theory to the other industries, with both these cases being from the ICT industry entails some limitations. One simple example of a difference is the delivery of services at a marginal cost and with superior speed in the ICT industry compared to other industries. However, digital sales support and service management channels are common for other industries today, and many devices have electronics embedded in them with an access to the provider's service and production systems via some access network. A typical knowledge worker in any industry uses increasingly a digital tool environment to complete work tasks, being connected via various digital services to the value network of a company. As we study the customer value from the end user's point of view, industry differences may disappear likewise the different roles of private person and the employee.

In papers VI and V, the SVC theory and related concepts are rooted in supporting theories in more detail. Those theories as such are very generic in relation to a customer, or a user. The limitations concerned are that each person has his/her own perception of time in different situations (Hornik, 1984; Leclerc et al., 1995; Mantel and Kellaris, 2003), and not everybody perceives cognitive load similarly as retrospective estimates of event durations are influenced by the interplay of cognitive resources (Mantel and Kellaris, 2003). These limitations require further subjective and objective measurement in a normative sense. This leads to a question of the importance of those products and services offered in relation to goals achieved (Christensen et al., 2005) and to the goals shared with the social network of the user (Epp and Price, 2011).

The provider side benefits related to integration and the creation of SVC were discussed here very briefly (Chapter 1.2). This is a very promising opportunity area wherein SVC is very likely to be implemented first. This is due to the reasoning that as with same activity, e.g. one digital customer channel, the provider both saves cost in-house and adds value for the customer, thereby making customers' interaction with a company much easier.

As the focus of this research was to explore customer value as experienced, derived, or received, much of customer value related discussion was omitted. As we presented a systemic perspective

on customer value creation, this addition is now re-discussed in connection to various limited areas for the purposes of future research.

5.5 Suggestions for further research

Several promising directions for further research are suggested. A normative research strategy will be the next step to prove the internal dynamics of the SVC-model and proposed SVC-theory in Papers VI and VII. A normative research strategy is needed to provide proof of the concept that applying the SVC model (as summarized also in Fig 10, p. 49) can lead to higher profits in a company by allowing the firm to better craft its offerings to customer utility. Based on the SVC-model, it can be expected that a system designated to be used by an individual, always includes a "cost of inconsistency" for an individual. It is formed by the increased task time and faults expected to be generated by the inconsistency between the parts of the system used. It would be beneficial to formulate the usage typologies of customers, aggregated from the single usage events (Brynjolfsson and Saunders, 2010), in order to further understand customers' total ecosystem behavior under the boundaries of time and cognition.

An integrated ICT offering consists of multiple components adding customer value as an integrated, systemic solution environment, enabling an individual to experience more joy and personal efficiency and convenience. The method used for studying integrated offerings proposed in Paper II needs to be validated and used more widely when studying customer value in bundles and integrated solutions in other industries. To generalize SVC theory to the other industries, it should be measured with cases from other industries offering integrated offerings, having clear differences in dynamics, e.g. in service delivery cost and speed, compared to the ICT industry. Conjoint analysis should also be re-visited as a suitable method for studying integrated offerings, in order to overcome its limitations related to potential information overloading a respondent.

Customer value is a fundamental concept in marketing (Holbrook, 1999) and marketing strategy (Flint and Woodruff, 2003). When the new systemic perspective discussed here is added to the theory of customer value, it has profound effects, but of course, these take a long time. From the management research perspective, the present discussion on value propositions of either customer solutions or integrated offerings should include SVC. The discussion covering the value creation of separate parts of the offering or solution, solving problems in certain domain should now also include the perspective of efficiency and convenience of the actual usage, with the waiting time and cognitive load as negative value creators in the goal transition phase.

The creation of SVC can be expected to be normatively validated in further research, raising an ICT specific question, from the customer value experience perspective, as to whether the current technology sector-specific regulation and competition policy hinders telecommunications operators to flexibly answer that SVC's potential demand, further hindering the efficiency and convenience of the end user. The width and complexity of European market regulations requires a more thorough discussion, which is not the focus of this thesis. Connecting the phenomenon of general-level value creation to EU regulations deserves a research design of its own, which might provide a fruitful and beneficial perspective for further research. This type of regulation discussion should be supported, as many authors expect the market to move toward increasingly integrated services (Sekino et al., 2006; Janssen and Mendys-Kamphorst, 2008; Bill and Peitz, 2008).

As the phenomenon studied is potentially universal, independent of a role in an organization or organization's position in the business network, further business research is potentially beneficial in studying complementarity in provider organizations (Ennen and Richter, 2010), as well as in the area of mass-customization (Pine, Victor, and Boynton, 1993; Piller and Kumar, 2006; Seppänen, Mikkonen, and Pynnönen, 2009; Salvador, de Holan, and Piller, 2009).

It seems that convenience and ease-of-use are just main value types in general level customer value creation. Thus, further research and development to proposed models (Figure 9 and 10) should be conducted in order to measure the impact of these value attributes, and their derivatives, to estimate customer benefits. Systemic consistency between the offering components, with all the variations, e.g. visual appearance, interactive behavior, assistive capability, and information, should be measured, especially from the perspective of customer segmentation methods. To be able to continue with the research, the methods capable of showing the creation of SVC should be themselves further developed.

To obtain any valid numerical results on the effect of systemic inconsistency one should be able to conduct direct measurement of cognitive load (Brunken, Plass and Leutner, 2003). To isolate the psychological origin of the phenomenon, the research design needs to be first conducted in a laboratory environment, with the help of cognitive scientists and neurophysiologists specialized in task performance in a goal achievement context. Especially the concept of systemic consistency needs a psychological research design to measure base-line effects of cognitive inconsistency at the first time, from which study it would be possible to have more generalizable results.

The neurophysiological metrics for the assessment of mental workload and the functional state of the brain might be needed (Holm, 2010). Further research on systemic consistency is potentially located in the area of neuroergonomics (Parasuraman, 2003; Sarter and Sarter, 2003), especially in areas of memory recall and skilled imagery. Results in those areas suggest that inter-item associations, which are based on spatial co-occurrence, are efficient in comparison with other mnemonics (Kalakoski, 2006). There is high probability that those generalizable results from isolated psychological tests, conducted in a cognitive laboratory, would eventually show that experienced inconsistency increases task time and faults, thus systemic consistency having then a generalizable positive effect to customer value. This would then enable further generalizing the SVC theory wider, over all the individuals who try to reach their goals by using a complex system, or act in a complex environment.

The provider side benefits related to integration and the creation of SVC present very a promising opportunity area, wherein SVC is very likely to be implemented first. This is due to the reasoning that as with same activity, e.g. one digital customer channel, the provider both saves cost in-house and adds value for the customer, making customers' interaction with a company much easier. Exploring this kind of dynamics in the context of value co-creation (Normann and Ramirez, 1993) in the context of the various goals of a customer (Epp and Price, 2011) might well provide a new approach to seeking new sources of competitive advantage (Woodruff, 1997).

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DISSERTATION PART II: ORIGINAL PUBLICATIONS

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