Consumer Switching on Mobile Platforms

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Abstract

The market for mobile information and communication technologies (ICT) has become larger than ever before. However, mobile ICT and consumer switching have remained somewhat under researched phenomena. The theoretical foundation for consumer switching can be described as scattered, not comprehensive and often lacking a process perspective. This has resulted in insufficient levels of explanation in consumer switching studies.

The main objective of this doctoral dissertation is to unify and improve the theoretical foundation of consumer switching by focusing on both the switching process and reasons influencing consumer mobile phone switching. The dissertation consists of four essays applying mainly qualitative methods. These essays provide a literature review that exposes shortcomings in the extant switching studies, focus group and longitudinal survey studies to understand the influence of switching costs and network effects, and a cross-market analysis of consumers' internal reasoning processes.

The key theoretical contributions of this dissertation are as follows: (1) an empirically and theoretically grounded three-stage process framework is presented. The framework unifies and complements the extant theoretical foundation for consumer switching. (2) Distinct differences are identified in consumer reasoning across different countries and switching process stages. These differences are explained through certain switching enabling influences, extant concepts from consumer behavior research and macro-level market structures. (3) Influences inhibiting mobile phone switching are associated with monetary switching costs and brand relationships costs. (4) Network effects play an important role in consumer switching and are often manifested through conditional situations. Some of the network effect-related findings also differ from traditional research knowledge in the mobile ICT context. Consequently, these contributions are expected to have particular theoretical relevance in relation to switching research in the information systems community, but also practical relevance regarding the influence of network effects on consumer mobile phone switching.

Keywords Consumer Behavior, Decision-Making, Mobile Phone, Mobile Platform, Network Effect, Switching, Switching Cost, Switching Process,
Mobiilikommunikaatiolaitteiden markkinat ovat suuremmat kuin koskaan aikaisemmin. Nämä markkinat syntyvät yksittäisten ihmisten kulutuspäättöksistä, mutta kuluttajien vaihtamiskäyttäytymisen tutkiminen on kuitenkin huomioitu suhteellisen heikosti. Tästä johtuen tämän tutkimusalueen teoreettinen ymmärrys on jäänyt hajanaiseksi ja ilman kattavaa prosessinäkökulmaa, mikä on johtanut heikkoihin selitysasteisiin kuluttajien vaihtamiskäyttäytymis-tutkimuksessa.


Yleisesti tämän väittäksirjan löydöksillä odotetaan olevan merkitystä erityisesti kuluttajien vaihtamiskäyttäytymiseen liittyvään akateemiseen tutkimukseen. Lisäksi löyösten avulla voi olla mahdollista tehostaa verkostovaikutuksien hyödyntämistä mobiililaitemarkkinoilla.
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In my early life, I never really dreamed of completing a doctoral degree. The possibility of pursuing such a revered degree only crystallized for me after I started to work on my Master’s thesis. Thus, I also lacked prior anticipation of how mentally and intellectually fruitful such an endeavor might be, and I can tell you, it certainly was even much more so than any other period in my previous education. Sadly, however, this journey has to come to a conclusion at some point, and after more than a decade at this fine academic institution, it is time for me to move on. But this closure of a chapter in my life is not to be done before I show some gratitude to the people who have influenced, encouraged and inspired me to begin and ultimately complete this magnificent journey.

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Helsinki, November 6, 2018
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Key Concepts

**Mobile Platform.** In the context of this dissertation, mobile platform refers to the combination of a physical platform, i.e. a mobile handset, and a software platform, i.e. an operating system for mobile handsets including external software services through the related application ecosystem (cf. Yoo et al., 2010). This bundle of platforms can create multiple different brand combination permutations, as not all operating system ecosystems are closed and proprietary such as the Apple iPhone iOS (Kenney & Pon, 2011). Terminologically I will use mobile platform interchangeably with mobile phone, since for regular consumers there is no reason to make such a distinction between the two.

**Mobile Phone, Smartphone and Feature Phone.** There is no comprehensively accepted definition to divide mobile phones into smartphones and feature phones. In technical terms, the division is usually determined by a mobile operating system. However, this definition is on many occasions too obscure for regular consumers, as modern feature phones have seemingly same the features as smartphones, such as access to the Internet and in-built applications. Therefore, I will adapt Lee’s (2014) practical definition: a smartphone is a mobile phone that is not just limited to voice-over communication and text messaging, but offers a broad range of features in the form of applications as well as accessibility to mobile Internet and services. Conversely, a feature phone is a mobile phone predominantly confined to voice-over communication and text messaging with only a limited set of additional features. Consequently, a mobile phone is an overarching term for mobile communication platforms that include both smartphones and feature phones.

**Switching.** This term refers to a body of research in which the research interest lies in transitional interaction. Transitional interaction in information systems means that the interest is not the technology itself, but rather the movement from one technology product or service to another (Bansal et al., 2005). In the information technology context, the definition also includes a notion that while switching involves the full termination of using a certain product, it does not involve the end of using the technology that is packaged into that technology product (Ye & Potter, 2011).

**Incumbent and Alternative.** These terms refer to the examined artifacts that a consumer has in use at the start and end of a switching process, respectively (see Park & Ryoo, 2013; Ye & Potter, 2011). However, the alternative has more multifaceted connotations, since it can be also used to refer to other potential options that were considered during the switching process along with the one that was selected as a replacement for the incumbent. Analogous terms that have been utilized in human migration literature are origin and destination (Lee, 1966; Moon, 1995).
Forms of Switching. The degree of change between an incumbent and an alternative determines which type of switch is occurring. The degree of change can be expressed in terms of technological development or platform branding. In the context of technological development, Xu et al. (2010) recognized three forms: incremental, leapfrogging and transformational. Incremental refers to switching to a technologically subsequent generation, leapfrogging refers to skipping over one or more technological generations and transformational refers to paradigmatic technological change such as switching from feature phones to smartphones. Additionally, two further forms can be recognized: lateral and backtracking (Nykänen et al., 2015; Sell et al., 2012). Lateral refers to switching without technological transition and backtracking switching to anterior technological standards.

In the context of platforms, branding switching can occur either cross-platform or within-platform. Cross-platform as a term originates from technology platform research on distinct situations which encompass several independent platforms (see Wäljas et al., 2010). In the context of mobile platform switching, cross-platform switching refers to a mode of switching in which either the hardware or software platform differs between the incumbent and alternative. These types of switches include switching from an Android powered Samsung to an Android powered Nokia or an iPhone. Alternatively, within-platform switching refers to a scenario in which switching occurs within a single mobile platform. Usually within-platform switches refer to incremental or leapfrogging generational upgrades such as switching from Samsung Galaxy S6 to Samsung Galaxy Note 8.

Enabling and Inhibiting Influences. These influences refer to dichotomous effects on the outcome of switching that are adopted from Park & Ryoo (2013). Enabling influences are factors that encourage switching or make it easier, whereas inhibiting influences are factors that discourage switching or prevent it. These terms are also sometimes referred to as switching benefits or drivers and switching costs/barriers or inhibitors (Jones et al., 2000; Teng et al., 2009). In relation to loyalty studies, inhibiting influences have also been divided into dedication and constraint factors (Lin et al., 2015).

Network Effects. These effects are also known as network externalities (Parker & Van Alstyne, 2005). Generally, two types of network effects are recognized: same-side and cross-side – also known as direct and indirect network effects, respectively (Eisenmann et al., 2006). From a mobile phone user perspective, same-side network effects refer to peer influences. This makes them for the most part the same as social influences. However, social influences can be understood as a broader concept that includes marketing forces such as sales personnel influences as well as authority influences such as employer or family decision-makers besides regular peer influences such as friends, co-workers and family members. Cross-side network effects from mobile phone user perspective refer to other stakeholders affiliated with mobile platforms besides consumers. These stakeholders are most commonly associated with mobile application developers, but can also include other affiliated service providers, content format providers and mobile network operators.
**Lock-In Effect.** A type of inhibiting switching influence that prevents cross-platform switching. This effect can occur on a few different levels regarding mobile platform switching (Kenney & Pon, 2011). The most commonly regarded lock-in effect in the academic literature is a lock-in effect that prevents switching altogether. This means that a consumer is tied to their incumbent mobile phone and cannot switch it to another for one reason or another. Since mobile platform refers to a dual combination of a hardware platform and software platform, there are also more nuanced lock-in effects in this context. A lock-in may occur only in relation to the hardware or software platform. A software platform lock-in is perhaps the more common of the two, since a consumer may be tied to a software platform through habits, usage familiarity, app transferability or brand relationship, whereas a hardware platform lock-in is tied to more affective influences such as brand relationships and habits.
List of Publications

This doctoral dissertation consists of a summary and of the following publications which are referred to in the text by their numerals


Author’s Contribution

Publication 1: Synthesis of Consumer Switching Research: A Proposal for Comprehensive Framework

The author was the sole author of this essay.

Publication 2: Impact of Switching Costs and Network Effects on Selection of Mobile Platforms

The author was a lead author for this research essay derived from a Master’s thesis. He participated in scoping the essay to conform with conference article requirements, revising the theoretical framing and argumentation, reinterpreting the results and positioning the results within the extant research. He also took part in advising on the initial Master’s thesis in a role of secondary advisor contributing to the initial theoretical framing and interpretation of the results.

Publication 3: Social Influences in Consumers’ Mobile Phone Switching Behavior

The author initially contributed as a secondary supervision advisor for the Master’s thesis upon which this research essay is based. Before and during this process he contributed to the questionnaire design and data collection as well as advising on theoretical framing, data analysis and result interpretation. He also participated in framing the conference article and improving the narrative and argumentation.

Publication 4: Stages of Dichotomies in Consumers’ Mobile Phone Switching Process

The author was the lead author of this essay. He codeveloped the research idea and enhanced the initial coding framework. He also organized data validation, took a leading role in theoretical framing and data analysis, developed the theoretical model and built the initial research narrative and argumentation.
1. PART I: SUMMARY
1. Introduction

1.1 Research Positioning

As a discipline, information systems is diverse, which has led to debate on the proper scope for the field (Sidorova et al., 2008). However, it has been broadly accepted that at the core of the discipline is a focus on information technology artifacts and interaction with them (Orlikowski & Iacono, 2001; Benbasat & Zmud, 2003). This interaction ultimately boils down from the macro level such as markets and organizations to a micro level of human interaction constituting of interactions such as usage, perception or creation (Orlikowski & Iacono, 2001; Sidorova et al., 2008). Regarding information technology artifacts, I follow Sørensen and Landau (2015) in their request to examine information systems in a broader sense and especially to concentrate more on mobile contexts. Therefore, I consider all information and communication technologies to be studied as information technology artifacts.

In this case, the information technology artifact is a mobile communication platform or for short a mobile platform. This term refers to a combination of a physical product in the form of mobile phone hardware and a logical capability that it contains in the form of operation system software and affiliated service applications. The focus of this dissertation concentrates on individual-level interaction related to the mobile platform called switching. Switching refers to a process in which an individual moves from one mobile platform to another.

1.2 Motivation

The importance of this topic stems from two perspectives: first, mobile phones have become ubiquitous technology products in the whole world. Approximately ten years ago, mobile phones lost their traditional main purpose as voice-over communication devices. This was due to the emergence of smartphones that are affordable for average consumers. Smartphones have become convergent multipurpose devices interwoven into the everyday lives of consumers, allowing them to do multiple tasks simultaneously and in collaboration with others irrespective of their locations. Despite an obvious multilateral influence on individual behavior, information systems as a discipline has examined mobile technologies rather sparingly (Sørensen & Landau, 2015).

Second, the information systems discipline has traditionally overlooked switching, as it has been infatuated with new technology through the concept
of technology adoption. Compared to technology adoption, switching offers a more comprehensive lens to understand consumer decision-making in mobile phone acquisition decisions starting from a difference that switching studies a continuous series of similar transitional actions between examined products or services whereas technology adoption is more concerned with a singular and unique paradigmatic shift that materializes in a transitional process. Moreover, this issue also extends to several disciplines alongside information systems, such as marketing, psychology, decision sciences, consumer research and service research, most of which have built a backlog of studies aiming to understand the phenomenon of consumer switching in various contexts.

Conversely, despite the long multidisciplinary research traditions in consumer switching, there has not been an accumulation of a consistent and comprehensive theoretical core (Bhattacherjee et al., 2012). Particularly in the mobile phone context, most of the studies utilize variance-based models explaining behavioral intentions in relation to switching. This gives limited understanding of consumer switching process and actual switching behavior. Consequently, the level of explanation can be described as only weak to moderate in the few confirmatory studies examining actual switching behavior. Therefore, I feel that the current understanding of mobile phone switching from a consumer perspective has remained limited.

1.3 Dissertation Objective

The aforementioned issues need to be solved in order to elevate academic understanding regarding consumer switching, particularly in a mobile platform context. Therefore, I have set the following objective for this dissertation: to unify and improve the theoretical foundation for consumer switching using an empirically grounded mobile platform context. This objective is to be achieved by giving consumers themselves a platform to voice their views about major influences in their own switching behavior. In order to reach this objective I will seek answers to the following two research questions:

What is the process for consumer mobile platform switching?

What are the reasons influencing consumer mobile platform switching?

The first research question seeks to contribute by addressing the missing theoretical accumulation on the consumer switching process. Consequently, this research question is aimed to answer a call for higher abstraction level theorization (Grover & Lyytinen, 2015). From a process perspective, the mobile platform context is used as an instantiation to make inferences about a general consumer switching process with products and services. Subsequently, this process perspective also hopes to serve the research context beyond mobile platforms and information systems research.

The second research question addresses issues that are more contextualized to mobile platforms and hence also information systems. This question is aimed at addressing a general call for more contextualized research (Grover,
2014; Grover & Lyytinen, 2015) and particularly a request to understand consumer information technology switching through contextualized examples (Salo & Makkonen, 2018; Ye & Potter, 2011). Specifically, the second research question aims to find the most commonly mentioned reasons that influence switching mobile platforms expressed by consumers themselves without prescribed research frameworks.

Overall, the objective and research questions will contribute to the information systems discipline by integrating the theoretical basis for consumer switching phenomena specifically in the context of mobile platforms. The contributions will also serve a broader research context beyond and including information systems through the generalizability of the findings beyond mobile platforms.

1.4 Dissertation Structure

This dissertation is an essay dissertation containing four individual research essays related to each other through the theme of consumer switching behavior on mobile platforms. These essays are provided for the reader in the second part of the dissertation. This first part will provide a contextualized explanation of how these four essays relate to each other and extant, relevant academic literature as well as how these essays contribute to the information systems discipline.

The first part is divided into eight sections: in the second section the theoretical background of the dissertation’s key components is provided in three subsections. A detailed review is provided of the information technology artifact – the mobile platform – and the examined interaction – consumer switching – as well as the findings of studies examining mobile platform switching in terms of actual mobile platform switching behavior and behavioral intentions. The third section reviews a selected methodology connecting the four contained essays and explains the underlying philosophical assumptions and methodological principles influencing the development of this dissertation. The fourth section presents the four essays in terms of their methods and data as well as interpreting their findings in the context of this dissertation. The fifth section, the discussion, integrates independent findings from the four essays together with key perspectives from the extant academic literature. The discussion is divided into two subsections according to the research questions: from the process perspective and content perspective. The sixth section, implications, gathers the main contributions of this dissertation under two perspectives: research contributions and practice contributions. The seventh section discusses the limitations of this dissertation and possibilities for future research avenues that these limitations may open. The final, eighth, section summarizes the findings and contributions of this dissertation in terms of the research objective and research questions.
2. Theoretical Background

2.1 Information Technology Artifact: Mobile Platform

In this dissertation, mobile platform refers to a main access point to a layered service infrastructure that is represented to consumers through a physical device – a mobile phone. Consumer-level mobile phone research has been built upon the original purpose of the mobile artifact: mobile telephony service. Since the inception of the mobile telephone in the late 1980s, mobile artifacts and affiliated services have been researched frenetically throughout the evolution of mobile phones. While the research originally concentrating around the telephony service, the development of mobile devices has shifted the focus toward the mobile artifact and its impact on use and user behavior.

Concurrently mobile phones have become sophisticated, integrating multiple products into a single converged product (Bayus et al. 2000; Yoo et al., 2012). Thus, the use is no longer tied just to voice communication, but mobile artifacts have become ubiquitous multipurpose devices enabling capabilities for serving both work-oriented utilitarian and entertainment-oriented hedonic purposes (Gerow et al. 2013; Middleton et al. 2014). Hence, mobile phones have been labeled as dual-purpose systems (Wu & Lu, 2013). Consequently, a new term was adopted to describe mobile phones with multiuse features: smartphones. Conversely, a differentiating label was coined for mobile phones primarily still capable of only regular voice-over communication and text messaging: feature phones (Lee, 2014).

Empowered by smartphones’ capability to provide ubiquitous availability (Wu et al., 2010; Xu et al., 2017), high levels of usability (Ghose et al., 2013) and opportunities for personalization (Huang et al., 2016; Jung, 2014), mobile devices have become so entangled with ourselves – our behavior and personas. Consumers’ values determine what mobile phones mean to them rather than accommodating their own behavior to fit with given features of a mobile phone (Jung, 2014). Concurringly, the research focus has shifted away from the mobile device itself and toward the multipurpose features and services that these devices can provide in a unique mobile setting. However, despite excitement over smartphone capabilities and related user interactions, the depth of research regarding mobile communication technologies can still be considered inadequate (Sørensen & Landau, 2015).

To understand the range of perspectives that can be taken and the shifting focus, one must understand the surrounding technology infrastructure – or using a buzzword, ecosystem – within which mobile phones exist. Both Yoo et
al. (2010) and Xu et al. (2010) have described this infrastructure in broad terms which are summarized in Figure 1. A mobile platform is a combination of hardware and software platforms – referred to as physical machinery and logical capability, respectively, in Yoo et al. (2010). The hardware platform would refer in this case to a physical mobile phone device, whereas the software platform would be a mobile operating system such as Apple iOS or Google Android. These two platforms are inseparable from each other from a user perspective (Yoo et al., 2010).

Since a mobile platform is effectively a platform built upon a platform, there are complementary layers both above and below that can be viewed as influencing consumer perceptions of mobile platforms. A mobile platform is built on top of a network infrastructure that is comprised of physical transmitters and intangible network standards (Yoo et al., 2010). Network service operators manage this layer in order to provide ubiquitous connectivity and seamless mobility for consumers using mobile phones. Consequently, these companies can also influence consumer decisions regarding mobile platforms if mobile phone subscriptions are bundled with certain brands or models.

Equally, the layers above the mobile platform such as applications, services and content can influence consumer perceptions regarding the mobile platform itself. Applications refer to the proprietary and third-party programs functioning on a software platform. These applications serve as an entry point to services such as Internet browsing, mobile banking, navigation or sports tracking. Contents, on the other hand, refers to software content formats and standards such as image, video and text formats. Since access to other layers happens through mobile platforms, the presence or absence of certain applications, services, content formats or network capabilities on a particular mobile

**Figure 1** Mobile platform and descriptions for affiliated layered infrastructure adapted from Yoo et al. (2010) and Xu et al. (2010)
platform can have a substantial impact on consumer decision-making regarding which mobile platform to use. (Xu et al., 2010; Yoo et al., 2010).

Mobile phones are essentially technological platforms involving stakeholders such as users, device manufacturers, operating system developers, application and service providers and mobile network operators. Thus, mobile platforms are subject to influence dynamics called network effects (Parker & Van Alstyne, 2005). Network effects can be divided into two categories: same-side and cross-side. Same-side network effects refer to how members from the same platform stakeholder group influence each other (Eisenmann et al., 2006). Since this dissertation aims to understand the consumer perspective for mobile platform switching, same-side network effects will exclusively refer to consumers’ influence on each other. In this context, information systems have defined and examined a fitting concept: social influence (Venkatesh et al., 2003). Cross-side network effects on the other hand refer to influences that platform stakeholder groups have over each other (Eisenmann et al., 2006). In the context of this dissertation, these effects refer to how consumers are influenced by other stakeholder groups in the mobile platform’s complementary layers such as application developers and service providers (see Figure 1).

Network effects can be either positive or negative (Eisenmann et al., 2006; Parker & Van Alstyne, 2005). Therefore, network effects can either enable or inhibit consumer participation on a particular mobile platform. Traditionally the enabling influences of network effects on platform participation have been viewed through a “more is better” narrative. This means that size is a key factor for platform value; the more users and applications on a mobile platform, the better it is for the participants. However, this may not be always the case, as network structure, conduct and member quality also have significant impact on platform value (Afuah, 2013). Conversely, platforms can also exert inhibiting influences that prevent cross-platform movement to other mobile platforms. For example, a mobile platform may have exclusive rights to certain non-replicable applications or services which some consumers deem essential and thus prevents them from considering alternatives. This influence is generally referred as a lock-in effect (Kenney & Pon, 2011).

While mobile platform providers have considerable influence on platform participation and how the platform is used, consumers still tend to adapt their mobile phone usage to fit into their own values (Jung, 2014). Furthermore, social influences often also play a large role in these issues, as mobile phones can also be used to signal affiliation to relevant social groups (Kim et al., 2014). However, these values or influences are not always aligned with the controlling entities of mobile platforms. Similarly, application developers’ aspirations may also be at odds with those of mobile platform owners. This misalignment can lead to a tug-of-war between the liberating forces of the application developer community willing to serve all the different interest niches amongst users and platform owners such as Apple that have exert control over the platform to maintain brand image and subsequent cash flows (Eaton et al., 2015). As a result, mobile phones are not always used even for their original intended purposes set by manufacturers. Therefore, it also becomes increas-
ingly important to understand use contexts that consumers might have (Middleton et al. 2014) before inferring about, for example, consumer switching decisions. After all, mobile platforms are designed to enable the creation of meanings that are beyond external definitions or control (Jung, 2014; Eaton et al., 2015).

### 2.2 Information Technology Interaction: Consumer Switching

Information systems as a discipline has a tradition of studying human interaction with information technology at an individual level, especially related to technology adoption and use (see e.g. Venkatesh et al., 2003). However, largely this tradition has been restricted to organizational contexts. Only in the last decade or so have consumer contexts entered high-level research focus as some of the major theories in the paradigm of technology adoption have been updated to the consumer context (see e.g. Venkatesh et al. 2012). Technology adoption has been such a strong research paradigm within information systems that it has necessitated defining ex-post stage examination in terms of technology adoption. Hence, research conducted on already established technologies has been colloquially labeled as post-adoption research. This post-adoption research can be crudely divided into three branches: continued use, switching and discontinuance, as illustrated in Figure 2.

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**Figure 2** Adoption research and related research perspectives

The focus of this dissertation is on switching research, which lies at the intersection of adoption and post-adoption research. Switching is a process (Roos, 1999) that can be generally defined as a movement from one entity to another (Bansal et al., 2005). Therefore, this definition describes switching as an action taking place between two entities of which one serves as a starting point and another as an end-point. This movement analogy stems from human migration research that has a long tradition of trying to understand the motivations behind movement of people dating back even to the 19th century (see e.g. Ravenstein, 1885). In migration, these entities have been labeled with place-oriented terms: origin and destination (e.g. Lee, 1966; Moon, 1995). However,
in the subsequent product and service switching literature these two entities have been referred to using a multitude of terms depending on context and whether an examination is concerned with the past or present or predicting future events. In order to avoid using multiple terms and for the sake of clarity in this dissertation I will settle on the generic terms, incumbent and alternative, for these two entities illustrated in Figure 2 as Information System 1 and 2, respectively.

Switching research in information systems owes much to technology adoption research through sharing many constructs that influence both technology adoption and switching. Traditionally these constructs are structured so that they invoke change to the incumbent situation. Whereas technology adoption has had a considerable theoretical body accumulated over time, switching has not experienced such an achievement. The theoretical foundation for switching has been described as scattered and non-comprehensive (Bhattacherjee et al., 2012), although the Push-Pull-Mooring framework by Bansal et al. (2005) has been suggested as the best candidate as a high-level framework to organize switching studies (Bhattacherjee & Park, 2014). However, while this framework justifiably recognizes the importance of influences related to both the incumbent and the alternative as well as some other influences beyond these two core entities, the push-pull-mooring framework is not without its own blind spots, either.

What is not often recognized in switching research is that switching can occur in many forms. These forms can be determined by the nature of the relationship between the incumbent and the alternative. Xu et al. (2010) defined three forms in relation to technology generations: incremental, leapfrogging and transformational. Incremental switching refers to a gradual transition from generation to generation, whereas leapfrogging refers to transitions that skip technology generation(s). Transformational switching is similar to leapfrogging as it usually skips technology generations, but there is also a qualitative aspect that causes a radical difference between the incumbent and alternative technology generation. Thus, consumers facing a transitional switch will experience a paradigm shift in their technology use and often experience a much steeper learning curve compared other forms of switching. Consequently, from this perspective also, technology adoption research can be considered as part of the switching research spectrum, as the technology transitions examined in adoption can be categorized as transformational switching.

However, the categorization by Xu et al. (2010) cannot be considered collectively exhaustive for types of switches occurring even in a mobile phone context. Switching need not happen to along the lines of technological development as opposed to what is implied in the aforementioned categorization. Conversely, consumers can also refuse to use more advanced features or even backtrack their technological choices by, for example, returning from smartphones back to feature phones (Sell et al., 2012; Sell et al., 2014). In addition, there is also a more mundane variety of switching which can occur when there is no technological difference between an incumbent and an alternative. The incumbent and alternative can be the same mobile phone model.
These types of switches are more common in studies about brand switching and loyalty (see Bayraktar et al., 2012; Ebrahim et al., 2016). For the sake of clarity and in order to align with Xu et al.’s (2010) terminology, these two additional types will be subsequently referred to as lateral and backtracking.

Despite their prevalence and interest in issues that can be considered a part of the switching research spectrum, technology adoption models have not been sufficient for a comprehensive examination of consumer-level switching (Ranganathan et al. 2006; Kim et al., 2014). As the varying forms of switching illustrate, there is a need to broaden the horizons for technology adoption and understand some of the underlying assumptions. Adoption research generally contains an implicit assumption that the examination concerns a paradigmatic transition, as in transformational switching. Consequently, adoption research perceives the research setting as movement from either no technology or unequivocally inferior technology to new, unequivocally superior technology. Therefore, it rarely takes into account how the incumbent situation actually influences the transition process or perceptions of the new technology (Xu et al., 2010). Conversely, in switching research, the central focus is usually on perceptions regarding both the incumbent and the alternative.

Furthermore, technology adoption studies have a tendency to predetermine the scope of the examined technology and thus be limited by these preset boundaries (Jung, 2014). The predetermined scope in turn limits understanding of consumer considerations, especially in cases of more mundane types of switches such as lateral or incremental switches. Karjaluoto et al. (2005) resolved this issue by recognizing that there are actually two sets of considerations that consumers must make in terms of switching: reasons to change the incumbent situation and reasons to select an alternative. In other words, there needs to be a reason to initiate the whole switching process and a reason for selecting a particular alternative. The predetermined outcome in technology adoption research eliminates the need to examine selection behavior. However, this is not an ignorable omission in the context of incremental and lateral switching, considering that there is an entire stream of literature in marketing examining this issue (see Mehta et al., 2003).

The identification of two different consideration processes (Karjaluoto et al., 2005) leads to a question: do initiation and selection form the whole switching process? Switching is ultimately about change. Therefore, the Lewin-Schein model of change (Schein, 1996) stemming from the learning and education context can offer some insights into the question about the switching process. It is a very parsimonious and generic model examining the change process, which can thus be rather easily applied to other contexts, too. It contains only three stages: unfreezing, change and refreezing. Unfreezing can be regarded as largely analogous to initiation: reasons to provoke a change to a status quo. The change stage on the other hand can adapt selection: reasons to conduct the change in a particular manner or select a particular alternative among many other possible solutions. Ultimately, refreezing deals with confirmation: reasons to settle with the selected alternative.
Consequently, the Lewin-Schein model of change can be viewed as adding another stage to the switching process by bringing switching into a broader scope. From a more comprehensive and abstract perspective, the whole process of consumer switching can be viewed as a cyclical process during which consumers alternate between long and frozen stretches of continued use and short periods of actual switching action. The Lewin-Schein model ties these short periods of switching to the long periods of use by adding a refreezing stage to Karjaluoto et al.’s (2005) two-stage view. A connection between the unfreezing and refreezing stages has also been acknowledged in technology adoption research as the technology adoption model (Davis, 1989; Venkatesh & Davis, 2000) the derivative unified theory of acceptance and use of technology (Venkatesh et al., 2003; Venkatesh et al., 2012) extended their examination from adoption intentions to a continued use perspective.

Moreover, the additional refreezing stage makes this process perspective more compatible with another change model (Prochaska & DiClemente, 2005) and with the generic consumer purchase process model (Kotler, 2002) and innovation diffusion process model (Rogers, 2003). All of these more detailed models employ stages that are analogous to refreezing. Despite there being more detailed and contextually appropriate process models available, the Lewin-Schein model is retained as a further frame of reference due to its parsimony enabling simpler categorization of the extant literature related to consumer switching.

Technology adoption and switching research – illustrating primarily the unfreezing and change stages, respectively – examine primarily enabling influences, i.e. influences that induce commencing the switching process. However, the additional unfreezing stage also opens an avenue for more elaborate discussion about a somewhat overlooked set of influences on switching: switching costs, inhibiting influences preventing a switch from occurring. The refreezing stage is essentially about continued use or loyalty: influences that make an individual stick with their choices, i.e. influences inhibiting subsequent switching behavior. There are a few rather comprehensive typologies examining precisely switching costs (see e.g. Burnham et al., 2003; Jones et al., 2002) and switching costs have also been examined in the context of information systems as well as being tied to network effects (Chen & Hitt, 2006; Kenney & Pon, 2011). However, these inhibiting influences have usually been studied in isolation, whereas studies about continued use or loyalty are rarely seen as the flipside of technology adoption or switching. Broadening the scope of consumer information technology switching to technology adoption and continued use is beneficial – if not necessary – in order to conduct an adequate literature review, as a body of accumulated knowledge is still forming in the switching context. Therefore, studies examining relevant consumer technology adoption, continued use or loyalty are examined in parallel with “true” switching studies. These studies are only separated by the three-stage categorization derived from the Lewin-Schein model of change (Schein, 1996).

The discussion on the research foundations for switching can be continued with research performance. How well has extant switching research been able
to explain influences on actual switching behaviors in the context of information technology artifacts? In quantitative studies the extent of explanation can be estimated. One of the most commonly used measures that enables comparison across different research models is the coefficient of determination ($R^2$), which estimates how much examined variables explain variance in dependent variable, which is actual switching behavior in this context (Hair et al., 2014). Sadly, I could only find eight studies that examined actual switching behavior instead of behavioral intentions with methods and reporting measures enabling explanation-level comparison. These eight studies are presented in Table 1 and the explanation levels can be described as moderate at best (see Chin, 1998; Hair et al., 2014). Naturally, this outcome suggests that there is still room for improvement in explaining consumer switching behavior in relation to information technology artifacts.

Table 1 Level of explanation comparison in information system switching studies

<table>
<thead>
<tr>
<th>$R^2$</th>
<th>Study</th>
<th>Subject</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.52</td>
<td>Venkatesh et al. (2012)</td>
<td>Mobile Internet</td>
<td>Refreezing</td>
</tr>
<tr>
<td>0.48</td>
<td>Ye et al. (2008)</td>
<td>Web browsers</td>
<td>Change</td>
</tr>
<tr>
<td>0.39</td>
<td>Kim et al. (2014)</td>
<td>Smartphones</td>
<td>Unfreezing</td>
</tr>
<tr>
<td>0.33</td>
<td>Bhattacharjee &amp; Park (2014)</td>
<td>Cloud computing</td>
<td>Change</td>
</tr>
<tr>
<td>0.28</td>
<td>Hsieh et al. (2012)</td>
<td>Social media</td>
<td>Change</td>
</tr>
<tr>
<td>0.23</td>
<td>Ye &amp; Potter (2011)</td>
<td>Web browsers</td>
<td>Change</td>
</tr>
<tr>
<td>0.15</td>
<td>Bhattacharjee et al. (2012)</td>
<td>Web browsers</td>
<td>Change</td>
</tr>
<tr>
<td>0.14</td>
<td>Lai et al. (2012)</td>
<td>Mobile shopping</td>
<td>Unfreezing</td>
</tr>
</tbody>
</table>

An explanation for these insufficient results is most likely to be manifold: (1) in information systems there is a tradition of examining behavioral intentions instead of actual behaviors. Thus, many research models are optimized in terms of behavioral intentions, even in studies examining both intentions and actual behaviors. Behavioral intentions correlate with actual behaviors only in a low to medium influence range (Bhattacharjee & Sanford, 2009), and thus intentions do not equal actual behavior (Wirtz et al. 2014). Consequently, an accumulation of knowledge on actual switching behavior is still lacking. (2) Research on consumer information technology switching in general has not yet matured. The extant theoretical basis is still taking shape and in its current state cannot be considered a sufficient foundation for explanatory model creation (Bhattacharjee et al., 2012). (3) Ultimately, consumer behavior is difficult to model even in a context of much simpler products or services than those related to information technology. Interaction relationships among variables influencing switching behavior are more complex, especially in terms of their demographical moderating effects, compared to influences on behavioral intentions (Venkatesh et al., 2012).

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1 The threshold values for the descriptive terms substantial, moderate and weak are respectively: 0.67, 0.33 and 0.19 (Chin, 1998) or 0.75, 0.50 and 0.25 (Hair et al., 2014).
2.3 Research Context: Consumer Mobile Platform Switching

The evolution of mobile phones can also be expected to influence consumer decision-making regarding mobile platform switching. As mobile phones have begun to compress more and more features, the variety of use contexts has become more complex. The added complexity increases the consumer decision load, which has been shown to influence decision-making behavior. Consumers in general rely heavily on cognitively less demanding decision-making approaches such as heuristics in relation to product selection (Hauser, 2014). Consequently, an added decision-making load stemming from technological development in mobile phones can be expected to further contribute to decision-making that can be described at times from an objective perspective as even irrational (Baumeister, 2003). This is evidenced for example in studies reporting backtracking mobile phone switching, i.e. switching to a technologically inferior mobile phone (Sell et al., 2012), which can be viewed as irrational behavior.

This development requires a reiteration of Middleton et al.’s (2014) emphasis on the need for a thorough understanding of the mobile phone user context when examining mobile phones. A similar call for contextualized research has been made regarding studies focusing on consumer switching behavior (Salo & Makkonen, 2018; Ye & Potter, 2011). For the purposes of comprehending the current level of understanding regarding consumer mobile platform switching, a snowballing literature review was conducted on journal articles without domain restrictions. The emphasis was to find studies that examine actual consumer mobile platform switching, given that behavior and intentions are driven by different sets of influences (Wirtz et al. 2014). The literature review focused specifically on studies that examine a process in which a consumer gives up usage of a physical mobile platform – i.e. a mobile phone – and begins to use another one instead. Consequently, this focus limits the scope of this literature review by excluding, for example, studies concentrating on consumer switching in different products and services than mobile platforms as well as studies focusing on different parts of the switching process such as discontinuance, churn or attrition.

With this strict focus, mobile platform switching studies are not in abundant supply irrespective of their focus on examining actual behavior or behavioral intentions (Lee, 2014). Even when the literature search was extended to cover all three switching process stages, only five studies could be found to examine actual mobile phone switching behavior. Furthermore, since most studies examined the paradigmatic shift toward smartphone usage, the inclusion criteria must also involve studies examining phenomena that can be interpreted as proxies for smartphone adoption such as mobile Internet adoption (e.g. Venkatesh et al., 2012). The findings of the aforementioned five studies are summarized in Table 2.
Table 2 Extant studies examining actual mobile platform switching

<table>
<thead>
<tr>
<th>Study</th>
<th>Stage</th>
<th>Outcome variable</th>
<th>Examined variables</th>
<th>Key findings</th>
</tr>
</thead>
</table>
| Kim et al. (2014) | Unfreezing  | Smartphone adopter type comparison | - Personal innovativeness  
- Perceived ease of use  
- Perceived usefulness  
- Perceived price  
- Perceived cost  
- Affiliation  
- Perceived Image  
- Perceived popularity | - Value-based factors and especially social influences play a larger role than traditional technology acceptance factors in smartphone adoption.  
- Significant referents in person’s social network are a key social influence  
- Smartphone adopters, potential adopters and non-adopter are interested in different sets of content features. |
| Kim & Park (2014) | Unfreezing  | Smartphone early adopter classification | - Lifestyle characteristics  
- Mobile phone purchase behavior  
- Mobile phone usage behavior  
- Mobile phone characteristics | Four early adopter groups:  
- Trend makers prefer new-feature-oriented phones, and functions are the key factor in acquisition  
- Low income group prefers high-tech phones. Functions are the key factor in acquisition, but brand or popularity do not matter.  
- High-income group regards design as a key factor in acquisition. Exclusivity does not matter for this group.  
- Risk-averse group prefers popular phones. Price is a key factor, but novelty or exclusivity does not matter |
| Lee (2014)        | Unfreezing  | Utility for having a smartphone | - Perceived normative peer influence  
- Number of family members using smartphones  
- Self-innovativeness  
- Attitudes toward smartphones  
- Self-efficacy  
- Financial burden | Smartphone adoption among young adults is positively influenced by the example of family and friends and family members’ influence is stronger than that of friends.  
- Persons perceiving themselves as innovative are more likely to adopt smartphones.  
- Low financial status hinders smartphone adoption, but low self-efficacy does not. |
| Sääksjärvi et al. (2014) | Change | Mobile phone switching frequency | - Esthetic design  
- Functional design  
- Perceived ease of use  
- Usefulness  
- Satisfaction | Progressive functional and aesthetic designs in mobile phones as well as satisfaction correlate with more frequent switching. |
| Venkatesh et al. (2012) | Refreezing | Advanced mobile phone feature use frequency | - Performance expectancy  
- Effort expectancy  
- Social influence  
- Facilitating conditions  
- Hedonic motivation  
- Price value  
- Habit  
- Experience  
- Behavioral Intention | Comprehensive explanation for consumer switching influences is complex.  
- Facilitating conditions, price value and especially hedonic motivation influence behavioral intentions when moderated by age, gender and/or experience.  
- Behavioral intentions have an effect on mobile phone usage, but the effect is only relatively small share and corroded by user experience.  
- Habit and facilitating conditions also influence use behavior when moderated by age, gender and/or experience. |

A key general finding is that comprehensive modeling of consumer switching influences is a complex process that involves a wide web of relationships and moderating effects among diverse constructs (Kim & Park, 2014; Venkatesh et al., 2012). There is evidence of the effect of traditional technology adoption influences such as usefulness and ease of use (Kim et al., 2014; Sääksjärvi et
However, the key influences seem to lie elsewhere, especially in relation to switching process initiation at the unfreezing stage. Influences such as same-side network effects, i.e. social influences, and monetary influences such as financial status and value perceptions, emerge as key indicators affecting smartphone-related switching (Kim et al., 2014; Lee, 2014). Moreover, the influence of design aspects has been linked to frequent switching behavior (Sääksjärvi et al., 2014) and the high-income segment of consumers (Kim & Park, 2014), which may explain early developments in smartphone diffusion especially in relation to design-oriented Apple iPhone products.

An additional 38 studies examining behavioral intentions in relation to consumer mobile platform switching was found to supplement the initial aforementioned five studies. Even though intentions do not equal to actual switching behavior, there is a noteworthy correlation between behavioral intentions and actual mobile platform switching behavior (Venkatesh et al., 2012; Xu et al., 2010). The results for eight key influences derived from these 38 switching studies are presented in Table 3.

Table 3 Level of supporting evidence for key variables in relation mobile platform switching intentions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Unfreezing</th>
<th>Change</th>
<th>Refreezing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility</td>
<td>Usefulness, benefit or relative advantage of using a mobile phone or a feature</td>
<td>moderate</td>
<td>strong</td>
<td>strong</td>
</tr>
<tr>
<td>Ease of use</td>
<td>Effort required to use a mobile phone or a feature</td>
<td>moderate</td>
<td>moderate</td>
<td>strong</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>Positive emotional response</td>
<td>strong</td>
<td>moderate</td>
<td>strong</td>
</tr>
<tr>
<td>Monetary influences</td>
<td>Perception over mobile phone acquisition price, continuous usage costs or unredeemable monetary losses</td>
<td>moderate</td>
<td>strong</td>
<td>not examined</td>
</tr>
<tr>
<td>Same-side network effect</td>
<td>Social pressure to behave in a certain manner</td>
<td>moderate</td>
<td>moderate</td>
<td>strong</td>
</tr>
<tr>
<td>Cross-side network effect</td>
<td>Benefit derived from using a certain platform or services associated with it</td>
<td>weak</td>
<td>moderate</td>
<td>not examined</td>
</tr>
<tr>
<td>Surrounding conditions</td>
<td>External conditions influencing switching process or compatibility</td>
<td>weak</td>
<td>moderate</td>
<td>not examined</td>
</tr>
<tr>
<td>Procedural effort</td>
<td>Time and effort spent required to get accustomed to a new mobile phone</td>
<td>not supported</td>
<td>strong</td>
<td>not examined</td>
</tr>
<tr>
<td>Branding</td>
<td>Feeling or bond that connects an individual with a specific brand</td>
<td>not examined</td>
<td>strong</td>
<td>not examined</td>
</tr>
</tbody>
</table>

For readability, the results are condensed into summative concepts such as utility that contain common examined switching influences such as perceived usefulness, switching benefit or relative advantage. These summative concepts do not count separately if these influences are enabling or inhibiting or if the influences concern perceptions regarding an incumbent or an alternative mo-
bile phone. A full table of examined influences along appropriate references and support-level evaluation scheme is presented in the Appendix.

Traditional technology adoption concepts – ease of use and usefulness contained in the more summative concept utility – were among the most examined influences. Although supporting evidence for these influences was rather convincing, comparison among different forms of switching revealed important differences. In the case of transformational switching, i.e. switching from feature phones to smartphones, these influences performed as expected in the adoption literature. However, in the case of incremental switching, i.e. switching smartphone to another smartphone, the relationship between these influences and switching intentions became fully insignificant (Tseng & Chiang, 2013; Tseng & Lo, 2011) or, in the case of perceived usefulness, considerably less significant (Xu et al., 2010). A later addition to depict affective and hedonic influences in standard technology adoption models, enjoyment (van der Heijden, 2004), performed as expected in the mobile phone switching context. Support was strong across different switching process stages although at the change stage this influence has been recognized only in two studies (Hsu, 2014; Wilska, 2003).

Monetary influences concern issues that are measurable in financial terms such as price perceptions and various other monetary risks and switching costs. These influences have a mainly significant influence on behavioral intentions in the unfreezing and change stages. However, at the unfreezing stage there have been some context-dependent mixed findings in relation to price perceptions (Teng et al., 2009; Xu et al., 2010), financial risks (Kim et al., 2015c) and financial switching (Fan & Suh, 2014). Furthermore, the effect of these monetary influences on continued use intentions remains unexamined.

Extant research finds some differences among network effects’ influence on switching-related behavioral intentions. The support for same-side network effects is quite strong. However, Xu et al.’s (2010) findings at the unfreezing stage regarding contexts created by different forms of switching were quite curious. The influence of subjective norms, i.e. how people perceive other people around them, was found to be significant in terms of transformational switching and insignificant in terms of incremental switching. Conversely, the effects were opposite in relation to the influence of image, i.e. how people perceive themselves in relation to other people around them. There were similar findings at the change stage; behavioral intentions correlate with subjective norms in an insignificant fashion (Filieri & Lin, 2017; Lin & Huang, 2014), whereas correlation with image is found to be significant (Hsu, 2014; Park & Koo, 2016).

Whereas same-side network effects have been rather comprehensively examined, cross-side network effects have received much less attention. Consequently, cross-side network effects remain unexamined in relation to continued use intentions. The findings at other stages are not fully supportive either. Xu et al. (2010) was the only study to examine the unfreezing stage. While the findings were largely supportive of complementary effects between hardware, software, application and service platforms, in the case of transformational
switching, the complementary effects between hardware and software were found to be insignificant. At the change stage, cross-side network effects were more widely examined compared to other stages and the findings were largely supportive. However, separate studies found the complementary effects of network, application and service layers to be insignificant (Kim et al., 2015b; Kim et al., 2016).

Surrounding conditions, procedural effort and branding have been examined principally in the context of alternative selection or loyalty at the change stage and the findings were supportive. Findings related to surrounding conditions were mixed, suggesting a weak understanding of the influence of surrounding conditions on switching behavior. The findings related to procedural effort suggested that time and effort spent becoming accustomed to a new mobile phone do not influence the intention to initiate a switching process, but only the intention to select an alternative (see Fan & Suh, 2014; Kim et al., 2015c).
3. Methodology

Methodologically and philosophically, this dissertation is reflective of my formation as a researcher. The original plan was to blend both qualitative and quantitative research approaches and thus also apply different philosophical perspectives. However, mixed methods have not been equivocally accepted at least without heightened scrutiny in information systems (Mingers, 2001; Venkatesh et al., 2013). Therefore, a practical decision was made to ground this dissertation chiefly in a single branch of epistemology, although some of the studies involve aspects of the originally intended mixed method approach.

Traditionally in information systems, research three major epistemological branches have been recognized: positivist, interpretive and critical (Mingers, 2001; Orlikowski & Baroudi, 1991). Of these philosophical approaches, the studies presented in this dissertation chiefly adhere to the interpretive tradition. The selection of this philosophical approach is based on two practical reasons. Firstly, the data used in these studies is for the most part qualitative, which matches well, although not exclusively, with selecting the interpretive approach (Myers, 1997; Klein & Myers, 1999). Secondly, I find hermeneutics the most natural approach. Consequently, hermeneutics is the philosophical approach fundamentally tied to interpretive epistemology (Klein & Myers, 1999).

To evaluate underlying assumptions and methodological principles in the context of this dissertation, I will adhere to the typologies of Orlikowski & Baroudi (1991) on the higher level of abstraction, Myers (2009) in terms of epistemological assumptions, and Klein & Myers (1999) in terms of methodological principles. Orlikowski & Baroudi (1991) evaluated assumptions in research from three perspectives: beliefs about physical and social reality, beliefs about knowledge and beliefs about the relationship between theory and practice. These beliefs can be broken down into subcategories such as epistemology and methodology in beliefs about knowledge. Epistemology is further broken down into five assumptions (Myers, 2009) and methodology into seven principles (Klein & Myers, 1999) in the context of interpretive research. These typologies are summarized in Table 4 with a description of how they are adapted here.
Table 4 Summary of underlying assumptions and principles adapting typologies of Orlikowski & Baroudi (1991), Klein & Myers (1999) and Myers (2009)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
<td>Social and physical world is subjective and exists through human action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rationality</td>
<td>Humans aim to act rationally, but often fail to do so due to existing internal and external conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social relations</td>
<td>Social influences are intrinsically dynamic and conflicting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epistemology</td>
<td>Nature of objectivity and empirical reality</td>
<td>Data and theory are inseparable and facts are reconstructed interpreting data using theory</td>
<td></td>
</tr>
<tr>
<td>Nature of theory</td>
<td>Theories are mimetic reconstructions of facts that aim to understand meanings and actions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of generalization</td>
<td>Generalizations require logical reasoning and are subordinate to the researcher, methods and study subjects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language of science</td>
<td>Language is ambiguous and continually changing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of data</td>
<td>Meanings are constitutive of facts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hermeneutic circle</td>
<td>Understanding is achieved through iteration between independent meanings and the whole that they create</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextualization</td>
<td>Critical reflection on the research setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction between researchers and subjects</td>
<td>Critical reflection on how interaction between the researcher(s) and research subjects constructs research material or data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstraction and generalization</td>
<td>Relating contextual interpretations to theoretical concepts in order to generate a general understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dialogical reasoning</td>
<td>Sensitivity to contradictions between preconceptions and actual findings that are resolved using cycles of revision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple interpretations</td>
<td>Sensitivity to differences in interpretations of multiple narratives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspiccion</td>
<td>Sensitivity to systematic biases in research material’s narratives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theory and practice</td>
<td>Narratives can be described without directly enacting reality, thus different philosophical approaches are complementary to each other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Orlikowski & Baroudi (1991) divided beliefs about knowledge into two aspects, epistemology and methodology, whereas Myers (2009) adapting Bernstein (1983) divided epistemology into five further assumptions. Myers (2009) inferred that in the interpretive approach; (1) data and theory are inseparable and facts are reconstructed by interpreting data through a theory. (2) Theories are mimetic reconstructions of facts that aim to understand meanings and actions. (3) Generalizations are subordinate to the researcher, methods and study subjects and achieving them requires logical reasoning. (4) Language is ambiguous and continually changing. (5) Meanings are considered constitutive
for facts. In this dissertation, I will subscribe to these five epistemological assumptions, as the voice in the data is given to the research subjects, individual consumers, who also form the base units of analysis. Across the different studies, the research subjects were given the chance to voice freely their own perspective with minimalized prescriptive structures. Therefore, the theoretical claims made in this dissertation reflect meanings interpreted from the data and produce claims that are rather contextual and generalizable only in moderatum (cf. Williams, 2000).

The language is interpreted in the context of a Finnish researcher examining data that is both produced and interpreted largely as secondary language for each actor in this research setting. Consequently, the base interpretive research setting forms a structure that Giddens (1976) described as a double hermeneutic: research subjects produce interpretations of an examined situation or behavior and a researcher produces a secondary interpretation to derive theoretical inferences from that data. Conversely, this dissertation also contains two studies that can be viewed to produce a third round of hermeneutical interpretation – and thus could be described as “triple hermeneutic” – as these two studies are adapted from Master’s theses. Therefore, (1) the research subjects interpreting and describing their own behavior assign the first meanings. (2) The Master’s thesis students making sense of the data for their theses assign the second meanings. Ultimately, (3) my coauthors and I assign the third layer of meanings by adapting relevant meanings from the theses to be presented in an academic research work. Naturally, this additional layer of interpretation increases the possibility of misinterpretations. However, this issue is addressed from a methodological perspective. The final interpretations for the adapted research essays have gone through several examinations among me and my coauthors starting from the supervision process for those Master’s theses in order to conform to the principle of dialogical reasoning and adapt the principle of multiple interpretations at the researcher level (Klein & Myers, 1999).

In Orlikowski & Baroudi’s (1991) evaluation, methodological assumptions dictated the appropriate methods for data collection and analysis. Klein & Myers (1999) defined seven methodological principles to be taken into account in order to conduct interpretive research of good quality. First, the fundamental principle of the hermeneutical circle requires understanding of qualitative research material to be generated through altering iteratively between interpretation of meanings of independent parts of the material and the whole that these independent parts will form. Second, contextualization clarifies for an audience what kind of assumptions the scope of the research setting can lay down for the whole research process and findings. Third, it is necessary to elaborate on the interaction between the researcher(s) and research subjects during data collection in order to be open about potential biases that might have influenced the data. Fourth, in order to create generalizations from contextual interpretations, the findings must be associated with abstract, theoretical concepts to extract information that would be useful beyond just narrow and localized descriptions. Fifth, dialogical reasoning requires a negotiating
dialogue regarding contradictions between preconceptions and empirical findings to ensure that these potential preconceptions have not biased the interpretation of data. Sixth, multiple interpretations advise of the aggregation of multiple interpretations of a single phenomenon and sensitivity to potential differences among those narratives so that a generalizable picture of the phenomenon can emerge. Seventh, the principle of suspicion is a general sensitivity to any potential systemic biases that can be present in the data.

As a response to these principles from Klein & Myers (1999), I have tried to adopt them in my research according to my best capabilities. The hermeneutical circle also forms the backbone of this dissertation since I feel it is a natural way of working, as mentioned earlier. Descriptions of relevant information about the research setting and data collection process have been taken into account in the research essays and particularly in this methodology section of this dissertation, since space for these explanations is much less constrained than in form-fitted research essays. Generalizations of the findings were conducted following logical argumentation, associating interpretations with concepts found in the research literature, yet still keeping the generalizations modest or tentative as per Williams’ (2000) instructions on interpretive research. Regarding sensitivity to any kind of biases as described in principles five, six and seven, there is no demonstrable way to apply these other than that I have been aware of these principles during the research process and exhibited the required sensitivity according to the best of my capabilities.

According to Orlikowski & Baroudi (1991), for an interpretive approach, appropriate methods would optimally research study subjects in their own social setting and try to derive concepts of interest through in-depth exposure. However, in this dissertation this in-depth exposure was not fully possible as highly ethnographical participation in multiple mobile phone switching decision processes is very inefficient. Nonetheless, the data collection was conducted principally through retrospective narratives by the study subjects in either interviews or surveys with open-ended questions with minimized prescriptive structures. Consequently, through these narratives the in-depth exposure could be gained as a secondhand exposure. The data analysis followed inductive logic that fit well with the interpretive approach since prescriptive structures such as hypotheses and pre-existing concepts were minimized. Consequently, an interpretative perspective on a process of consumer switching will also yield analytically process frameworks instead of variance models, which are more commonly associated with positivist approaches. Generally, the methodological approach in the studies contained in this dissertation can be associated with both grounded theory and case studies, although not subscribing to either exclusively. Nonetheless, the contributions were built in the form of process models in which influences on consumer switching were derived from meanings in research subject-created narratives, which were subsequently examined through theoretical lenses provided in the extant literature.

In the context of interpretive research, Orlikowski & Baroudi (1991) defined a maxim for beliefs about the relationship between theory and practices: value neutrality cannot be achieved because researchers’ prior experiences, values
and beliefs shape their interpretations. There are two approaches to this belief in interpretive research: the weak and strong constructionist positions. In the weak constructionist position, researchers describe and conceptualize studied narratives to their best abilities, whereas in the strong constructionist position researchers also intervene in the creation of social reality with their descriptions and conceptualizations. This dissertation follows the assumptions of weak constructionism, mainly due to the original roots of the studies contained in this dissertation in mixed method research. As Orlikowski & Baroudi (1991) described, the weak position assumes different philosophical research approaches – such as interpretive and positivist – to complement each other by being able to answer different types of questions as opposed to the strong position, which assumes the interpretive approach to surpass the necessity to use a positivist approach.
4. Individual Studies

This dissertation contains four individual research essays that are summarized in Table 5. Study 1 is a literature review, which lays a conceptual foundation for this dissertation and the rest of the studies. Consequently, the subsequent studies are empirical research essays examining mainly qualitative data about consumer switching behavior. Study 3 stands out from the rest as it utilizes mixed methods. By using the classification logic of Venkatesh et al. (2013) for mixed methods studies, Study 3 approached the mixed methods with a complementarity strategy comparable to Cao et al. (2006) which also utilized quantitative survey instruments along with open-ended questions. However, the difference lies in the analysis philosophy and methodological orientation; Cao et al. (2006) leaned on a positivist philosophy and quantitative orientation, whereas Study 3 is interpretively and qualitatively oriented. In addition, Study 4 applies content analysis, which has been described as bridging quantitative and qualitative methods, especially from a quantitative perspective. However, the analytical approach leans toward an interpretive philosophy.

Table 5 Summary of four studies contained in this dissertation from a methodological perspective

<table>
<thead>
<tr>
<th>Study</th>
<th>Data Collection</th>
<th>Data</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Systematic literature review</td>
<td>41 studies on consumer switching</td>
<td>Hermeneutical analysis (Myers, 2009) and concept matrices (Webster &amp; Watson, 2002)</td>
</tr>
<tr>
<td>2</td>
<td>Qualitative survey and group interviews</td>
<td>4 focus groups, 18 individuals</td>
<td>Qualitative data analysis following Malhotra and Birks (2007)</td>
</tr>
<tr>
<td>3</td>
<td>Qualitative and quantitative longitudinal survey</td>
<td>216 consumers</td>
<td>Inductive analysis supported by a reference theory and quantitative data triangulation adapting Myers (2009) and Venkatesh et al. (2013)</td>
</tr>
<tr>
<td>4</td>
<td>Qualitative cross-national survey</td>
<td>218 consumers</td>
<td>Content analysis following Krippendorff (1980)</td>
</tr>
</tbody>
</table>

The rest of the methodology section reviews all four studies individually. Each of the studies is described according to the nature of the data, data collection process and analysis process and ultimately the findings.

The objective of this study is to establish an extant literature foundation for consumer switching studies in an information systems context. Generally, the theoretical foundation in consumer switching can be described as scarce, scattered and lacking a comprehensive theoretical framework (Bhattacherjee et al., 2012; Bhattacherjee & Park, 2014). This study responds to these concerns by refining extant theoretical perspectives into a conceptual framework. Subsequently the framework is used to review examined extant empirical studies. A systematic literature review approach was selected to achieve these objectives following the search process and result illustration guidelines by Webster & Watson (2002) as well as the reporting guidelines of vom Brocke et al. (2009). Arguably this literature review can perhaps be best described as a theory-based explanatory review, although it does not exactly follow the archetypical structure of Rowe (2014). The data collection and analysis processes for Study 1 are summarized in Figure 3 and described in detail in subsequent paragraphs.

**Data.** The literature search process was anchored to already established but related information system concepts of technology adoption and post-adoption due to unfocused results with searches using switching or consumer switching as search keywords. The search was conducted using the Scopus bibliographic database as it provides larger coverage compared to Web of Science and provides consistent results compared to Google Scholar (Falagas et al., 2008). However, the initial systematic search approach yielded only six articles that could be labeled as examining consumer switching in an information systems context. Therefore, the search process was supplemented with organic forward and backward searches to accumulate a more comprehensive body of literature (Webster & Watson, 2002). Furthermore, due to initial scarcity of consumer switching studies within the information systems domain, the search was broadened to cover publications beyond that domain. However, studies published prior to 1995 were only examined to a limited extent, as it was found during the search process that before 1995 switching studies mainly concentrated on brand switching of frequently purchased consumer products while examining only a narrow scope of explanatory factors (Ye & Potter, 2011). Therefore, the organic search was conducted with the following inclusion criteria:
Peer-reviewed articles published in academic journals or international conference proceedings after 1995 including publication outlets beyond the domain of information systems.

Articles examining consumer switching of products and/or services either empirically or conceptually.

Articles describing components of consumer switching in a clear and understandable manner.

The organic search yielded 35 additional articles of which 17 can be considered to belong conceptually to the information systems domain. Therefore, the full data set consisted of 41 academic articles examining consumer switching with 23 examining switching of information systems products and/or services.

**Analysis.** The analytic approach in this literature review can be viewed to follow a four-step hermeneutic analysis applying concepts of the hermeneutic circle, prejudice, appropriation and engagement (Myers, 2009). (1) The first step of the analysis was a review of conceptual research frameworks presented in the examined body of literature. (2) The second step consisted of identifying the push-pull-mooring framework (Bansal et al., 2005) as the best candidate to address the initial problem of lacking an overarching framework. (3) Then came a critical evaluation of the framework. This involved identifying the framework’s weaknesses and supplementing it with perspectives derived from the reviewed switching literature and human migration research (Lee, 1966; Moon, 1995). Then these supplementing perspectives were used to refine the push-pull-mooring framework into a more holistic and comprehensive framework to describe different influences on the consumer switching process. (4) As a last step the examined body of literature was evaluated with the now refined push-pull-mooring framework in order to better identify the limitations that extant switching studies have in general and in the context of information systems research in particular. The findings were then summarized in a form of concept matrix as per Webster & Watson (2002).

The analytical process can also be described also in terms of hermeneutic analysis concepts. The first step can be viewed as a form of engagement – i.e. a critical process of hermeneutic analysis to familiarize oneself with the studied material and begin transforming meanings to serve another purpose or context than originally intended. The second step portrayed a concrete form of prejudice – i.e. prior knowledge playing role in interpretive process. I was already aware of the existence of the push-pull-mooring framework and regarded it already as one of the most appropriate ways to comprehensively describe and classify influences related to switching behavior especially at the individual level of examination. Therefore, this step was rather a confirmatory step than an exploratory step. The third step can be viewed as a continuation of first step’s engagement which transcended into appropriation – i.e. the studied material is appropriated to make a meaning for an interpreter – as the push-pull-mooring framework begun to transform through supplemental knowledge into a refined framework more suited to the intended switching context. The last step closed the final loop of the hermeneutical circle – i.e. a process of al-
ternating between interpretations of the whole, which was the body of literature in this case, and parts of it, which were the individual frameworks. The first was about interpreting the whole, whereas the second step focused on a singular part. The third step involved multiple loops of the hermeneutical circle to refine a singular framework by sourcing the whole body of literature. The last step closed the hermeneutical loop by returning to reinterpret the whole by using the accumulated understanding condensed into a singular, refined part of the literature.

**Findings.** The literature review unraveled a general tendency in switching research to examine influences on switching inconsistently and non-comprehensively. Generally, there are two parallel streams of literature: switching research, which mainly studies switching enabling influences, and switching cost research, which chiefly studies inhibiting influences. Although there are number of studies that examine these influences in tandem, such as most studies using the push-pull-mooring framework as a reference theory, the examination is usually inconsistent and asymmetric.

The inconsistency is revealed when the push-pull-mooring framework is supplemented with anterior theoretical perspectives such as Lee (1966), especially relating to switch inhibiting influences. The push-pull-mooring framework recognizes three types of influences on switching: negative influences relating to the incumbent (push), positive influences related to the substitute (pull) and all “personal, social and spatial issues that act to facilitate or hamper the migration decision” (mooring; Bansal et al., 2005, p. 98). Consequently, this framework was built on asymmetry that recognizes inhibiting influences only in relation to mooring influences. Conversely, it can be learned from switching cost research that inhibiting influences can also exist in relation to the incumbent and alternative (Burnham et al., 2003). Furthermore, mooring influences – in spite of its definition – have been applied only as switch inhibiting influences as opposed to as switch enabling influences as well (see Chang et al. 2014; Hsieh et al. 2012).

The literature review also revealed how both influences relating to the incumbent and alternative have been examined with a rather narrow scope. Usually the examination is constrained to a single measure: satisfaction in relation to an incumbent and alternative attractiveness in relation to an alternative. Although both satisfaction and alternative attractiveness can be viewed as compound variables covering quite a broad variety of associations related to the incumbent and alternative, they cannot cover all potential variances related to these two key entities of switching. Therefore, other measures have also been used such as pricing, quality and inconvenience for the incumbent and ease of use and usefulness for the alternative. Furthermore, the examination of the alternative dimension is often deterministic; an end-point for a switching process has already been determined even when the examination is not retrospective. As a result, most of the studies disregard the influence of multiple potential alternatives on a consumer’s switching process.

When looking into the methodologies of switching studies, a general observation is that their examination is concentrated on variance-based approaches
as opposed to process-based approaches. Variance-based approaches in technology adoption research might be well-justified; the examination concerns a unique, transformational paradigmatic shift between nominally different forms of technology. However, in the case of consumer switching, the examination usually concentrates on lateral and incremental technology transition processes. In these cases, experience plays a considerably larger role compared to technology adoption. Hence, it becomes important to understand sufficiently the premise for switching, i.e. the relationship to the incumbent, as well as what happens after the switch. A singular consumer switching process is usually a long continuum of comparable switching events, which highlight comparisons between anterior experiences and potential alternatives. This cyclical continuum is also present implicitly in the concept of the feedback loop, which postulates that perceptions of potential alternatives also shape perceptions of incumbent products or services (Njite et al., 2008).

As a remedy for these identified issues, this study provides a conceptual framework (see Figure 4) which effectively portrays an extended and enhanced version of a push-pull-mooring framework. The framework, besides elaborating the inhibiting sides of push and pull effects, disentangles the often confusing mooring dimension. Mooring can affect switching decision with both enabling and inhibiting influences, as the original definition states (cf. Bansal et al. 2005), but it is also a multidimensional component of the framework that can be elaborated further beyond the original description. The mooring di-

<table>
<thead>
<tr>
<th>Origin Factors</th>
<th>Mediator Factors</th>
<th>Destination Factors (for each potential destination)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Process of renunciation</td>
<td>• Process of identifying personal preferences and conditions affecting the switch and destination options</td>
<td>• Process of selection</td>
</tr>
<tr>
<td>• Describes factors related to the service or product of origin</td>
<td>• Describes personal, social, informational and circumstantial factors related to conditions outside the origin and destination. Determines also which are viable destinations from all of the potential destinations.</td>
<td>• Describes factors related to all the potential substitute services and products of destination.</td>
</tr>
</tbody>
</table>

**Figure 4** Extended framework for switching presented in Nykänen (2014)
The extended framework presented in the study also differs from the original push-pull-mooring framework with a process perspective, which involves two different actionable stages for switching: initiation and selection. Initiation – which is referred to as the process of renunciation in this study – is a stage in which an individual begins a switching process by recognizing the incumbent mobile phone as insufficient and replaceable. Selection, on the other hand, is the stage in which an individual evaluates the alternatives for the incumbent mobile phone and makes a decision to acquire one of them as a replacement.

Study 1 provides four key contributions to this doctoral dissertation. First, the identification of deficiencies in the theoretical basis of switching lays the foundation for this dissertation as it serves as an indication why anterior studies may not have been able to create very comprehensive explanations for consumer switching behavior. Second, the elaboration of the inhibiting influences and mooring factors of the push-pull-mooring framework can be used to build a more comprehensive theoretical foundation for consumer switching research in information systems. Third, the proposed process model separates processes related to the incumbent, i.e. origin factors and alternative, i.e. destination factors, as separate stages. Fourth, the process model also involves the concept of the feedback loop which gives an alternative perspective on how experience dynamically influences the whole switching process compared to traditional technology adoption and switching research perspectives.

4.2 Study 2: Impact of Switching Costs and Network Effects on Selection of Mobile Platforms (Dzhain et al. 2015)

This study examined the influence of switching costs and network effects on mobile platform switching in relation to the usage of affiliated information technology products and cloud services. The objective was to evaluate the size of the impact of various switching costs and how they interact simultaneously with network effects. The study was conducted as a qualitative data analysis of four focus groups based in Finland following the guidelines for focus groups by Krueger & Casey (2008) and for qualitative data analysis by Malhotra & Birks (2007). The study itself was based on a Master’s thesis which I was cosupervising at the time. My role in the study concentrated principally on the analysis process of drafting a research article. In this role, I participated in research scoping, reconfiguring the theoretical framing, argumentation development and results interpretation and positioning. The overall data collection and analysis processes for Study 2 are summarized in Figure 5 and described in detail in the subsequent paragraphs.
Data. The data collection was conducted through four facilitated focus group interviews collected during summer 2013. Each group interview had four to six participants besides the facilitators and lasted from one hour to an hour and a half including the participants completing a related questionnaire. The questionnaire contained open-ended questions related to switching costs and network effects and background information such as demographic details and current ownership and usage of mobile communication devices and services. Consequently, the questionnaire served both to facilitate discussion and to provide relevant background information regarding the participants. The data collection design followed the multiple category design by involving four different focus groups.

The focus groups were composed using a marketing segmentation maxim: maximize intragroup homogeneity and intergroup heterogeneity. This maxim also aligns rather well with the multiple category design guidelines by Krueger & Casey (2008). The composition of the four focus groups was as follows:

**Digital native group:** The first focus group consisted of four young university students with native capabilities to use information technologies, yet without a necessarily expert level of understanding of them or a clear-cut necessity to use those technologies.

**Tightly communicating group:** The second group consisted of six female team athletes of varying ages whose sports activities required tight communication and coordination through mobile communication technologies, but did not necessarily necessitate a very thorough understanding of information and communication technologies overall.

**Academic researchers:** The third group consisted of four academic researchers of varying ages possessing a high level of knowledge regarding mobile communication technologies and understanding of digital platforms, but no clear necessity to constantly utilize the possibilities of these technologies.

**Information technology professionals:** The fourth group consisted of four professionals of varying ages representing an expert level of knowledge and understanding of information and communication technologies with work that required them to use those technologies and build their knowledge even further.

Analysis. As per the recommendations by Malhotra & Birks (2007), the qualitative data analysis process consisted of four stages. The first, data assembly, involved data collection, described in detail in the previous section. The second stage, data reduction, consisted of data transcribing, coding, categorization and discarding of data parts deemed irrelevant for the study purposes. Coding and categorizing the data was based on extant literature on
switching costs and network effects. The switching costs searched for among the focus group participants’ responses were search costs, contractual costs, learning costs, complementary investments and brand relationship costs. The list of switching costs was mainly based on the switching cost categorization by Chen & Hitt (2006) along with supplemental perspectives drawn from other sources such as Burnham et al. (2003). Similarly, both same-side and cross-side network effects as well as the lock-in effect were drawn from extant literature (Afuah, 2013; Eisenmann et al., 2006). All these concepts guided the discussion facilitation in the focus group interviews and inferences from them were subsequently coded in the data analysis phase.

The third stage, data display, involved the transformation of the raw data into a presentable format. As opposed to the recommendations of Malhotra & Birks (2007), the data was not summarized in tables or charts but the qualitative richness was embraced by displaying the data through example quotes formatted according to concepts of various switching costs and network effects. In the fourth and last stage, data verification, the findings were verified by comparing them to extant literature on the topic. In the case of this study, this step was a little redundant considering that the coding process was already heavily guided by anterior theoretical perspectives. Consequently, the comparison of the empirical findings and extant literature was conducted with the literature review taking a slightly broader spectrum than just the original theoretical background utilized for coding. As a result, no evident inconsistencies between the anterior theoretical perspectives and empirical results of the study were identified.

Findings. The study found that search costs do not inhibit consumer mobile phone switching, implying that mobile phone market is working efficiently in terms of information gathering. Learning costs and cross-side network effects on the other hand were found to have a mixed effect on switching. Learning costs were not an issue for most features that mobile phones offer, but some advanced features may create switching costs. This was even true with consumer groups that can be considered to have an expert level knowledge of these devices, such as IT professionals who have an interest in using mobile phones in a versatile manner in both work and leisure environments. In the case of cross-side network effects, the inhibiting influences were conditional, similarly to learning costs. The overall quantity of the applications did not affect switching decisions. However, the availability of a critical mass of particular applications that an individual finds subjectively crucial can create considerable switching costs unless those applications are easily transferable to another mobile phone. It seems that learning costs and cross-side network effects influence in an inhibiting manner switches that are conducted between software platforms. Conversely, platform providers have tried to make within-platform switches as smooth as possible for consumers by creating low learning curves between different operating system versions and enabling easy-to-use application transfers to the new mobile phone.

The study also concluded that contractual costs, complementary investments and brand relationship costs could create considerable switching costs in cer-
tain situations. Contractual costs create a natural financial lock-in effect, which can be described as rather strong in the case of mobile phone switching. The strong lock-in effect is most likely due to the rather short contract periods that align rather well with consumer switching cycles. In the case of brand relationship costs, the switching cost is usually rather affected by driven inhibiting influence rather than cognition driven influence. This finding gives a hint that consumers do not always base their decision-making regarding mobile phone switching on rational reasoning, but rather cope with the abundance of information needed for cognitive decision-making with more emotional reactions. Naturally, brand relationship cost is an inhibiting influence that primarily affects cross-platform switching, as within-platform switching would occur within a single mobile phone brand. Moreover, complementary investments can also create a strong lock-in effect, which is mainly tied to sunk costs that have already been invested in the complementary products. However, this inhibiting influence may also be tied to more affective influences such as brand relationship costs that are being exhibited in a more comprehensive fashion also covering devices beyond the examined mobile phone switch.

Regarding network effects, the influence on switching seemed to be conditional in terms of both effects. Same-side network effects such as peer influence and decision-making gatekeepers exerted the strongest influence on consumers groups with less technological knowledge – namely the tightly communicating group. While the influence was also recognized in other groups, its practical effect was regarded as weak at best. In the case of cross-side network effects, the influence was manifested through a critical mass of subjectively important applications. This means that neither the sheer volume of available applications nor general perceptions of application quality create lock-in or exclusion effects. Rather, only an absence of subjectively important applications can create an exclusion effect for certain manufacturer brands or operating systems and their presence can create a lock-in effect.

The main contribution that this study offers is an in-depth examination of inhibiting influences and network effects in the context of mobile platform switching. Although switching costs have been studied in the anterior academic literature with similar findings to this study, the inhibiting influences have been rarely examined in conjunction with the enabling influences. Consequently, network effects were not viewed exclusively as inhibiting influences in the context of this study. Furthermore, the contribution and novelty of this study becomes more obvious when the scope is narrowed to switching mobile platforms. Whereas there is a substantial body of research on the influence of switching costs on other levels of mobile phone technology infrastructure (see. Yoo et al. 2010), there is still rather little in-depth understanding of those influences at a personal mobile platform level combining both the hardware and software layers. However, the generalizability of these findings is curtailed by the convenience sample, which limits inferences beyond the Finnish mobile phone market context. Thus, further research is required to understand how inhibiting and enabling influences interplay on the global scale of consumer mobile platform switching.
4.3 Study 3: Social Influences in Consumers’ Mobile Phone Switching Behavior (Nykänen et al. 2015)

The objective of this study was to evaluate how social influences affect consumer mobile platform switching using a longitudinal student survey. In order to make a rich evaluation of how these social influences manifest in this context, the study triangulated using both qualitative and quantitative material with a help of the push-pull-mooring framework (Bansal et al., 2005) utilized as a reference theory. The study did not explicitly follow any prescribed analysis approach. From a data collection perspective, this study could be viewed as a mixed method study following the classification of Venkatesh et al. (2013). However, generally the analysis process can be likened to hermeneutic analysis, thus making the whole paper heavily lean on a qualitative orientation with an interpretive approach (Myers, 2009).

This study was also based on a Master’s thesis as was Study 2. I acted as a co-supervisor for this Master’s thesis and my role in this study was similar but more comprehensive than in Study 2. I took part in the data collection process by participating in questionnaire refinement in its latter iterations. In the analysis process I participated in the theoretical framing, reinterpreting the analysis and results and improving the narrative and argumentation. The overall data collection and analysis processes for Study 3 is summarized in Figure 6 and described in detail in the subsequent paragraphs.

![Image of Figure 6](image)

**Data.** The data was collected in the form of a questionnaire as part of the Master’s level Information Economy course at Aalto University School of Business in Finland. The collection was organized over three consecutive years around January from 2012 to 2014. The students responding to the questionnaire were each rewarded with a few additional points on their final course grade in order to motivate them to give thorough and comprehensive answers especially to many open-ended questions. The questionnaire yielded responses from 216 college student respondents. The first year produced 69 responses and the subsequent years 84 and 65 responses.

The questionnaire itself experienced slight evolution over the three-year period with a few questions added and some questions reformatted to better convey the original idea behind the question. Both qualitatively and quantitatively oriented sections were present in the questionnaire along with basic demographic questions. In addition, some background information questions asked about affiliated device and service ownership and usage along with the
time of their latest mobile phone switch and any potential challenges that oc-
curred during that switch.

The qualitative section used mainly open-ended questions and inquired
about liked and disliked aspects of both the incumbent and previous mobile
phone as well as the conditions and reasons how and why the switch occurred.
The quantitative section was aimed at estimating the importance of different
factors affecting mobile phone switching in general and in the context of the
latest switch in particular. The questions targeted perspectives on mobile
phone functionalities and esthetics, subjective usage and usability perspectives
and surrounding conditions such as social influences. The importance of these
factors was estimated using a five-point Likert scale.

**Analysis.** The analysis of qualitative data begun from selecting the push-
pull-mooring framework (Bansal et al., 2005) as a theoretical lens to guide the
axial coding process, qualitative data coding integral to the grounded theory
approach (Myers, 2009). The framework was used principally at its highest
abstraction level, i.e. involving push, pull and mooring constructs. The axial
coding process targeted the reasons why respondents had switched mobile
phones and particularly aimed to extrapolate how various social influences
affected the switching process.

Initial axial coding produced 26 inductively emergent variables, each of
which could be associated with contributing to the higher abstraction level
constructs: push, pull and mooring. These 26 variables were subsequently
generalized in the second iteration of axial coding into nine established vari-
ables derived from the push-pull-mooring framework (six variables; Bansal et
al., 2005) and the second iteration the unified theory of acceptance and use of
technology (two variables; Venkatesh et al., 2012). Generally, this resulting
process of variable generalization can also be viewed as a form of data verifica-
tion against the established theoretical background.

The second part of the analysis involved triangulation with the results from
the quantitative part of the questionnaire. The rationale behind this triangula-
tion was to find nuanced differences among different switching influences and
to better evaluate the strength of the impact of these influences compared to
just using a qualitative analysis approach. The quantitative data was analyzed
using basic statistical methods such as means and standard deviations from
responses to Likert-scale questions, and the results were then compared with
the aggregated findings from the qualitative analysis and extant literature to
find any considerable inconsistencies and noticeable tendencies inferable from
the longitudinal data set. After triangulation analysis, the results of this study
were reported in the form of tendencies that will emerge as a major influence
on future mobile phone switching.

**Findings.** In most cases a mobile phone switch cannot be deduced into a
single reason. Rather a switch is caused by a collection of reasons. The single
most prevalent self-expressed category of reasons contributing mobile phone
switching was related to device characteristics. Device characteristics refer to
functionalities and features in either the incumbent or alternative mobile
phone. This influence remained the most prevalent reason that explained con-
sumer switching decisions over the three-year examination period. However, the study also highlighted a largely unexplored influence: involuntary switching. This category refers to situations in which switching process is initiated when an incumbent mobile phone becomes unusable or an external influence significantly lowers possible switching barriers. This category accounted for approximately 25% of all reported switches during the examination period and up to 40% for a single year.

In particular, the study concentrates on examining how social influences affect consumer mobile phone switching decisions and reports an increased frequency and importance for social influences. Despite the increasing trend, social influences were not very explicitly acknowledged nor reported. Rather, respondents mentioned these influences in passing among other factors. In quantitative measures respondents even played down the explicit importance of social influences.

Social influences can take two broad forms: direct persuasion and advice and indirect observation of incumbent status and changes in surrounding personal social environment or a broad social context involving general trends. Whereas indirect social influences were rather frequently observable in the data, direct influences were mentioned very rarely. Naturally, these findings seemed to corroborate with the findings of the quantitative measures triangulation.

Over the examination period of this study, many respondents were observed to conduct a paradigmatic shift in their mobile phone use as they switched from feature phones to smartphones. This shift also had an impact on social influences; indirect social influences seemed to be a key factor in conducting this shift. References to social trends were particularly prevalent, whereas direct social influences were negligible in this context.

Whereas social influence in a broad sense is synonymous with same-side network effects, the other half of network effects, cross-side network effects, were also observed in this data set. Cross-side network effects are actualized through the importance of mobile phone applications in switching decisions. However, the importance of usually applications coincided with a shift from feature phones to smartphones, which implies that the importance might be partly influenced by an apparent novelty value that the application opportunities exerted. Furthermore, network effects in general, both same-side and cross-side, seem to be only associated with certain mobile phone manufacturer brands, principally Apple iPhone, which further implies that the paradigmatic shift to smartphones has had a huge impact on prevalence and importance of network effects on consumer mobile phone switching.

As a key contribution for this dissertation, this third study conducted an in-depth analysis of switching enabling influences in a longitudinal setting. Moreover, this study examined an interesting window in the mobile phone market as it exposed a mass of switches from feature phones to smartphones along with other comparable types of switches during the same period. The self-expressed data highlighted especially the prevalence and importance of an often-ignored causation category for consumer switching, forced and assisted switching, which can help create better explanations and predictions for actual
consumer switching behavior. In addition, while the study conceded that capturing social influences affecting switching behavior tended to elude observations, the study still found evidence for an increasing effect over time for social influences. This finding became more interesting in a broader information systems research context as in adoption research settings social influences have conventionally been found to diminish over time (e.g., Venkatesh & Morris, 2000).

4.4 Study 4: Stages of Dichotomies in Consumers’ Mobile Phone Switching Process (Nykänen et al. 2019)

The objective of this study was to elaborate on consumer decision-making processes in mobile phone switching context with a dual-process theory (Kahneman & Egan, 2011) serving as a theoretical lens. Specifically, the study aimed to establish how consumers alter between dichotomous thinking modes during switching and to find out what kind of implications this altering might have in different market contexts. Consequently, this study built a descriptive theoretical framework which from a process perspective drew parallels to generic buying decision processes (Kotler, 2002) and adapted decision-making dichotomies for each process stage from the push-pull-mooring framework (Bansal et al., 2005), self-determination theory (Ryan & Deci, 2000) and elaboration likelihood model of persuasion (Petty & Cacioppo, 1986).

To conduct this qualitative study, cross-sectional questionnaire data from three countries was used for content analysis (Krippendorff, 1980). Generally, the analytical process in this study could be also associated with the qualitative data analysis process described by Malhotra & Birks (2007), although their guidelines were not used as an explicit analysis process reference. Moreover, the study utilized the same data set used in my Master’s thesis (Nykänen, 2013), although the analysis evolved in completely another direction. The data collection and analysis processes for Study 4 are summarized in Figure 7 and described in detail in the subsequent paragraphs.

**Figure 7** Study 4 data collection and analysis process

**Data.** The data was collected as a student questionnaire in three countries, Finland, the United States and India, during the first half of 2012. The Finnish sample was collected at Aalto University School of Business and the University of Oulu; the American sample was collected at the University of Nebraska – Lincoln; and the Indian sample was collected at the Punjabi University. The Aalto University and University of Nebraska samples were collected electronically during a course in which participants could earn a few extra credits by
answering the questionnaire. The University of Oulu and Punjabi University samples were collected manually at the campus from student volunteers.

The Aalto University data in the Finnish data set was the same data examined as the first-year sample in Study 3. Therefore, the deployed questionnaire in Study 4 was the same as the first questionnaire iteration in Study 3. The deployment of questionnaires in the three countries yielded 249 responses: 69 from Aalto University, 13 from the University of Oulu, 81 from the University of Nebraska and 86 from the Punjabi University. Overall, the sample represented a young population with an average age of 25 years. Moreover, the average time since the last switch for respondents was rather recent: approximately 18 months.

**Analysis.** The analysis process applied content analysis techniques (Krippendorff, 1980) by starting with data reduction as the first stage of analysis. Despite the comprehensiveness of the questionnaire, this study focused only on a single open-ended question: *explain in your own words, what were the reasons for the switch?* This question referred to the most recent mobile phone switch the respondent had conducted. Furthermore, due to insufficient answers, the examined sample was reduced to 218 responses: 81 from Finland, 78 from the United States and 59 from India.

The second stage was axial coding in which dichotomies emerged inductively in two stages of the switching process. The first dichotomy concerned whether a respondent had engaged in the switching process due to actual and concrete need or based on internal desires. The second dichotomy examined the logic for the switching process justification: whether the respondents were justifying their switching using rational reasoning or referring to affective, more feelings-based arguments. A further examination of the dichotomies revealed that justifications in the first dichotomy did not happen at the same level across the sample. Some respondents discussed the reasons why they initiated the switching process to replace their then incumbent mobile phone, some why they had selected a particular mobile phone as a replacement and some both of these issues. Therefore, the first dichotomy was split into two so the first stage examined why a respondent had engaged in switching using a division into need and want logics and the second stage examined why a particular replacement was selected using the use value dichotomy: utilitarian value and hedonic value. Consequently, the analysis was conducted in a structure with three switching stages, which would be later labeled as pre-switch, switch and post-switch stages.

As the third stage of analysis, the emergent framework was developed into a codebook to aid validation of the original coding. The validation was conducted in two iterations. In the first, a student recoded all 218 responses using the three-stage dichotomy structure. However, inconsistent results required clarification for the codebook. Consequently, the second validation iteration utilized the refined codebook and two non-academics to recode the data. This recoding round provided sufficient validation results which were illustrated with Krippendorff’s alpha (Krippendorff, 1980). The results conformed to either adequate (0.800 > α ≥ 0.667) or excellent (α ≥ 0.800) instructional val-
ues for data reliability, as the alpha values varied between 0.72 and 0.81 for each stage and country subset.

The last analysis stage involved the creation of a theoretical framework to describe the findings. This was accomplished by comparing the coding framework to extant theoretical works on human decision-making and consumer switching. This process can also be viewed as a form of external validation. As a result the examined dichotomies embody dualistic thinking processes described in dual-processing theory quite well (Kahneman & Egan, 2011). However, as it is a general theory on human thinking, the process is not a fully sufficient theoretical comparison to a thinking process contextualized on the consumer mobile phone switching process. Consequently, a theoretical operationalization was found for the dichotomies in each stage.

The first stage’s dichotomy was comparable to the push-pull-mooring framework (Bansal et al., 2005), as push and pull effects can be viewed as analogous to needs and wants, respectively. The second stage examined motivations to select a particular replacement and adapted self-determination theory (Ryan & Deci, 2000). The last stage took a retrospective look at the formation of the justification of the whole switching process which derived its general idea for the dichotomy from dual-processing theory (Kahneman & Egan, 2011). However, this justification process can be viewed as a form of self-persuasion, and thus the elaboration likelihood model of persuasion (Petty & Cacioppo, 1986) provides contextualized operationalizations for the last dichotomy: cognition and affect. In addition, the whole three-stage switching process was theoretically framed with the buying decision process (Kotler, 2002).

Whereas the ties between the dual-processing theory and the elaboration likelihood model are quite obvious, as both divide mental processing into deliberating cognition and an associative affect, an explanation of the logic as to how it ties in with the push-pull-mooring framework and self-determination theory might be in order. The adopted division from self-determination theory is utilitarian value and hedonic value, which in this context determines what qualities consumers seem to prefer when selecting an alternative to their incumbent mobile phone. While utilitarian value indicates that a consumer has a deliberate and defined purpose for which they wish to use the mobile phone, hedonic value refers to undefined leisure activities that give a sense or feeling of pleasure. This dichotomy ties in with the logic of dual-processing theory as one mode of mental processing that has its foundation in deliberate cognition that uses the rational causation of actions to plan and execute behavior, whereas the other mode of mental processing trusts feelings and intuition for decision-making.

In the case of the push-pull-mooring framework, the connection to dual-processing theory was based on an observation from the data. The respondents tended to be more precise regarding the causation of their actions when they were discussing issues related to the incumbent mobile phone, whereas when the reasoning was based on desires projected toward a potential alternative, it usually utilized an unelaborated and emotion-laden lexicon. Therefore, the
reasoning at this stage was also dichotomously based on rational causation as in cognitive deliberation or emotion-laden projections of desires, as in affective heuristics – similarly to dual-processing theory.

Ultimately, the analysis was reported with traditional qualitative research reporting methods using rich in-text quotes. The findings were subsequently summarized with a theoretical framework illustration, which will also be presented along with the discussion about the findings below.

**Findings.** This study took an in-depth look into internal decision-making processes and switching reasoning by presenting a three-stage model which combined elements from the prior situation (pre-switch), switch actions (switch) and ex-post considerations (post-switch). The study wove multiple theoretical perspectives together to describe consumer mental processing during the act of switching mobile phones. The three-stage process framework presented provides a more parsimonious perspective on consumer switching processes compared to generic buying decision processes (Kotler, 2002). The framework with dichotomies in each three stages is illustrated in Figure 8.

![Figure 8 Process framework for reasoning switching presented in Nykänen et al. (2019)](image)

The presented framework portrays three archetypical decision routes for consumers. Two of these routes follow consistently either of the mental processing logics of dual-processing theory, whereas the third is a conjoint route that portrays various permutations in which a consumer alternates between these two decision logics during different stages of the switching process. In the data, three of the potential six conjoint route permutations were not observed as transitions from pre-switch stage pull to switch stage utilitarian value and from utilitarian value to post-switch stage affect. The study does not claim that these potential route permutations would not be possible for consumer switching decisions, but due to their absence in the data, my coauthors and I suspect them to be rare or to require special conditions to occur.

At the route level of examination, archetypical cognition and affect routes respectively account for approximately 30% and 20% of all decision-making routes by respondents. However, the conjoint route is most prevalent, accounting for approximately 50% of all respondents. This illustrates that con-
Consumers have a tendency to draw reasoning for their consumption decisions from both forms of mental processing logic. The most common permutation within the conjoint route was want-hedonic-cognition as it accounts for approximately 70% of respondents using the conjoint route to reason their switching decisions. In this permutation, switching decisions seemed to be driven originally by a desire to acquire a new mobile phone for hedonic purposes such as entertainment, but the justification was framed with seemingly reasonable cognitive arguments such as keeping up with technological development.

At the process stage level of examination, the study found that consumers are most geared toward cognitive reasoning in the post-switch stage and least in the switch stage. This finding can be interpreted as that when consumers face uncertainty selecting a new mobile in the form of an abundance of new, previously unknown information and evaluation attributes, they are less likely to perform fully cognitive decision-making (Petty & Cacioppo, 1986; Tversky & Kahneman, 1974). Furthermore, this mode of reasoning is shifted heavily afterwards toward cognition as ex-post there has been time to absorb the new information to better justify the switching behavior. This shift has been labeled so-called post-hoc rationalization behavior (Connolly & Zeelenberg, 2002) in which a consumer rationalizes their actions ex-post while simultaneously masking undesired explanations such as using heuristics to cope with uncertainty.

This study also made a cross-country comparison involving Finland, the United States and India. The main finding in this comparison was related to market structures. The United States represented a service market in which consumers could acquire new mobile phones without up-front acquisition costs through mobile network operator bundles. Finland and India on the other hand represented product markets in which consumers were required to pay the full up-front acquisition cost themselves. The lack of acquisition costs in the American service market induced more frequent switching and affective reasoning across all stages of the switching process.

The key contributions that this study offers lie in the process framework that it presented as it completed the process perspective in this dissertation for consumer mobile phone switching and tied together multiple anterior theoretical perspectives. The process framework showed empirically that consumers’ internal reasoning mode can vary during a switching process and in fact this type of altering reasoning is more common than consistently maintaining either a cognitive or affective mode of reasoning. The study also suggests that ex-post rationalization of switching actions seems to be rather common amongst consumer mobile phone switching. Furthermore, it suggests that the service market seems to induce affective reasoning. Ultimately, when these findings are brought into the broad context of information systems research, a critical examination for applying common adoption and post-adoption frameworks in consumer information technology switching is suggested. The assumptions that these models make may not be fully compatible when the whole switching process is examined comprehensively.
5. Discussion

The findings of the contained four studies are summarized in Table 6. While all the studies produced individual findings that explain consumer switching behavior principally in the context of the studies themselves, these studies also served a greater purpose. Each study produced key contributions that form together a backbone for the overall contribution of this dissertation.

Table 6 Summary of individual studies’ findings and key contributions

<table>
<thead>
<tr>
<th>Study</th>
<th>Findings</th>
<th>Key Contributions</th>
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| 1     | • Non-comprehensive and inconsistent examination of switching influences in extant literature  
• Best candidate for overarching framework (PPM) is not sufficient due to structural asymmetry  
• Examination of origin and destination influences has been generally narrow and often consisting of only one variable  
• Extant examination is mainly cross-sectional with variance-based approaches as opposed to process-based approaches, which leads to disregarding considerations of what has happened before and after the switch | Process perspective  
- Separation of initiation and selection processes  
- Tentative theoretical framework proposed  
Content perspective  
- Shortcomings in extant literature identified and improvements proposed |
| 2     | • Search costs have no real influence on mobile phone switching  
• Learning costs do not affect casual use, but advanced features may require additional effort even from more experienced users  
• Contractual costs, complementary investments and brand relationship costs can create a strong lock-in effect  
• Same-side network effects influence indirectly all examined consumer groups, but directly mainly less experienced users  
• Cross-side network effects influence through the critical mass of subjectively important applications | Content perspective  
- Monetary factors and brand influences create strong lock-in  
- Network effects influence largely through conditional influences |
| 3     | • Forced or assisted switching influenced at least a quarter of switches (25-40%) over time  
• Device characteristics most prevalent and stable switching reason over time  
• Social influences not very explicitly acknowledged and reported, but on the rise over time  
• Technological paradigm shift driver for indirect social influence, whereas direct influences rarely observed  
• Applications exerted cross-side network effects that influenced switching  
• Network effects particularly associated with certain brands | Content perspective  
- Recognition of involuntary switching  
- Increasing role of social influences  
- Network effects’ association with branding |
| 4     | • Identified three decision-making routes; in one consumers alternate between decision-making modes during the switching process  
• Consumers are most geared toward cognition in the post-switch evaluation stage and least during the actual switch stage where an alternative is selected  
• Unobserved altering reasoning permutations: from affective in pre-switch to cognitive in switch stage and from cognitive in switch to affective in post-switch stage | Process perspective  
- Revised theoretical framework with empirical validation  
- Inclusion of Post-Switch stage  
Content perspective  
- Elaboration of internal reasoning process |
The contributions of these four studies can be divided into two broad categories: the content and process perspectives. In the content perspective, the focus is on influences affecting switching, whereas in the process perspective, the main contribution lies in the descriptions of the stages in the switching process. Studies 2 and 3 portray their main contributions from a content perspective, whereas Studies 1 and 4 represent the process perspective, although both also provide some contributions to the content perspective.

I will begin with the process perspective since it will frame the whole discussion surrounding the content perspective. As the process perspective sets out the different stages that occur in a switching process, each of those stages is comprised of nuancedly differing motivations and hence also contains influences that are not completely alike across the process. The discussion is then wrapped up with a section that integrates the separately discussed process and content perspectives into a single table. The table shows how each examined content perspective concept is positioned in the consumer switching process.

5.1 Process Perspective

The process that emerged from Study 4 can be described in three stages: pre-switch, switch and post-switch. These stages also closely resemble a generic change model derived from a context of education and learning: the Lewin-Schein model of change (Schein, 1996). As far as I know, this model has not been applied to consumer switching research before. The model stages are labeled unfreezing, change and refreezing. The unfreezing stage is similar to the pre-switch stage, characterized by detachment from the incumbent through dissatisfaction and disconfirmation. The change stage is analogically somewhat different from the switch stage described in Study 4. Schein (1996) described this stage as change what it needed to be changed, although when adapted to the switching context a more appropriate focus concerns how the motivation to select a particular alternative among many options is in fact formulated. The last stage, refreezing, is analogous to the post-switch stage as both deal with the process of normalizing the new status quo. However, in the switching context this stage might require some personal cognitive adjustments if subjective disconfirmation occurs (cf. post-hoc rationalization; Connolly & Zeelenberg, 2002).

For the sake of clarity, I will subsequently adapt Schein’s (1996) terminology for the switching process, as it is more descriptive. Consequently, as the terminology of the Lewin-Schein model also implies, the described process is in fact cyclical. This perception of time and process run counter to a traditional research view of transitional periods in information systems. The traditional view has been predominantly preoccupied with mapping single events without consistent consideration of what is has happened ex-ante and what would happen ex-post. When the Lewin-Schein model is adapted to the mobile platform switching context, the model actually describes altering between frozen periods of use and short transitional events. More specifically the model de-
scribes a single transitional event in relation to frozen periods both ex-ante and ex-post. This way of formulating the switching process also echoes the self-expressed responses of consumers in Study 4, as these responses are rooted to the examined switching event.

In Study 1 the process perspective was more constrained. Although the proposed framework also contains three stages, functionally it lacks the last, refreezing, stage since the framework is based on the push-pull-mooring framework (Bansal et al., 2005) and theory of migration (Lee, 1966). Neither of these theoretical frameworks was originally intended as a process framework although both, especially theory of migration, contain an implicit order of constructs. However, this comparison illustrates the deficiencies of these theoretical perspectives; they focus primarily on a brief transitional event while disregarding the influence of events ex-ante to a certain degree and ex-post by a large degree. Therefore, the proposed process model in Study 1 focused only on the process of switch initiation at the unfreezing stage and the process of selection of an alternative at the change stage. The separation of these two processes may not seem too unintuitive, but consideration of these stage processes as separate entities is seemingly absent from traditional adoption frameworks. Furthermore, the model also contains a hint of the cyclical nature of the switching process by connecting different stages using the concept of the feedback loop (Njite et al., 2008) which describes how acquired knowledge selecting an alternative also influences the dynamically individual perception of the incumbent mobile phone involved in the switching process.

Study 4 also added theoretical depth to the empirically emergent switching process model – which is now identified as an instantiation of the Lewin-Schein model – by comparing the framework with three other process models: the innovation diffusion process model, (Rogers, 2003) buying decision process model (Kotler, 2002) and transtheoretical model for stages of change (Prochaska & DiClemente, 2005). This comparison is illustrated in Figure 9. Consequently, these process models can be utilized to clarify what is really happening within each of those three stages. Given that the original manuscript gave only a limited comparative review, the comparison is now expanded in order to ground the proposed switching process model more comprehensively with extant theoretical views.

The transtheoretical model begins with precontemplation in which cognitive recognition of an urge to change is still arising. A transition to active consideration – or contemplation in Prochaska & DiClemente’s (2005) terminology – is triggered after a problem or a need is recognized. Kotler (2002) and Rogers (2003) began their comparison from need recognition, followed by information search and persuasion, respectively. All these aforementioned process steps can be used to elaborately describe what is happening during the initiation of the consumer switching process at the unfreezing stage. A frozen period of mobile phone usage is thawed after alertness during precontemplation leads to recognition that an incumbent mobile phone might not be fully sufficient anymore. This recognition initiates an information search process, con-
temptation and ultimately internal persuasion in the form of a tradeoff evaluation of whether it is viable to commence switching or not.

Figure 9 Lewin-Schein model adapted for switching process in comparison with the transtheoretical model for stages of change, the five-stage adoption process and the buying decision process

In Study 4, this problem recognition was operationalized by the push-pull dichotomy derived from Bansal et al. (2005) to determine whether an urge to switch is related to a known and familiar incumbent or an initially unknown and enticing alternative. Consequently, Study 4 explained the confounding reasons why consumers initiate the switching process. Study 1 on the other hand viewed the first stage through the process of giving up the incumbent mobile phone during which an individual balances between the beneficial and disappointing qualities of the incumbent phone. As a result, this study offered a narrower perspective than Study 4 as the proposed examination only concerned need recognition without any external tradeoff evaluations.

For the change stage, the transtheoretical model (Prochaska & DiClemente, 2005) has the steps of preparation and action, the adoption process (Rogers, 2003) has decision and implementation, and the buying decision process (Kotler, 2002) has evaluation of alternatives and purchase decision. These process steps lead to selection of an alternative to an incumbent mobile platform. From these processes it can be deduced that the change stage involves three steps that begins with evaluation of alternatives and determination of a consideration set. The consideration set refers to a group of potential alternatives considered as a replacement for the incumbent mobile platform (Hauser, 2014). Once a best candidate sufficient to replace an incumbent mobile platform is determined, an individual can commit to implementing a switch.

In information systems research, the unfreezing and change stages are not examined separately, but rather assumed to be the same. One explanation for this assumption can be derived from the highlighted role of technology adoption and diffusion research. These research domains have two inherent as-
sumptions in this regard. (1) A new, adopted technology is assumed to be unequivocally superior to the anterior technology and (2) there are no alternatives to consider at the time the adoption process commences. These assumptions can and have led to a deterministic view that the adoption process can only commence once an all-around superior alternative has been identified. Thus, there is no reason to explore why one alternative would be selected over another.

In the case of consumer switching, the situation is much more muddled and nuanced compared to technology adoption. Consumers usually have an opportunity to select from multiple alternatives, but only rarely does an alternative emerge that would be unequivocally the optimal solution. Therefore, switching often involves diligent comparisons among the incumbent product and potential alternatives. Besides these comparisons, consumers also need to determine whether conducting a switch altogether is reasonable or not after learning about the potential alternatives.

The distinction between how adoption and switching research view this process is actually rather beautifully present in the data of Study 4. In the data, there were two types of respondents: those whose switching decision was based on the identification of a replacement mobile phone and those who first identified a reason to switch before they started searching for alternatives. The former can be likened to the study subjects of adoption research, as the alternative had been decided deterministically beforehand and discussion only concentrated on the advantages of that alternative over the incumbent. The latter on the other hand can be viewed as research subjects more ideal for switching research as they first explicated the process why initiation of the switching process was deemed worthwhile in the first place and then explained the process how and why a certain alternative was selected to be the best possible replacement. Consequently, the latter type of respondents in Study 4 showed that there were in fact two separate processes in the early parts of switching: initiation and selection. Despite traditional adoption research not necessarily recognizing the separation of these two process stages, this type of process perspective has not been completely unnoticed in academic research. There are marketing studies exploring switching from this perspective, even in research on mobile phone switching (see Karjaluoto et al., 2005).

Regarding the refreezing stage, the transtheoretical model has maintenance and termination steps that refer to the stabilization of the situation after the change and ultimately ending of the behavioral change that has occurred during the change process. In the adoption process, the ultimate stage is limited to confirmation, which is another instantiation of accepting the occurred change and stabilizing the situation for continued use. The buying decision process on the other hand divides post-purchase behavior into four different outcome states: post-purchase satisfaction, actions, use and disposal. These outcome states refer to confirmation of successful switch, revoking of the switch immediately after, stable post-switch use and eventual termination after long-term use, respectively.
From these theoretical perspectives it can be deduced that a key component in the refreezing stage is the **confirmation** of switch sufficiency. In the expectation-confirmation theory (Bhattacherjee, 2001; Oliver, 1980) this stage has had noticeable attention in information systems and the theoretical foundation can be considered relatively matured. Furthermore, at this stage confirmation can be viewed to be followed by continued use behavior, which has also been studied increasingly in information systems (see e.g. Jung, 2014). Ultimately, what this stage will see is the end of a particular switching cycle as subsequent urgency to conduct a switch emerges. This is also what is referred to as termination in the transtheoretical model (Prochaska & DiClemente, 2005) and post-purchase disposal in the buying decision process (Kotler, 2002) as well as being implied with terminology in the Lewin-Schein model (Schein, 1996).

### 5.2 Content Perspective

#### 5.2.1 Modes of Reasoning

The process stages identified in Study 4 can be also used to structure findings from the content perspective. In Study 4 a dichotomous distinction was made based on dual-processing theory (Kahneman & Egan, 2011) and operationalized as cognitive and affective decision-making. In the study, it was found that cognitive decision-making was most prevalent in the last stage, unfreezing, whereas affective decision-making was most prevalent in the change stage. These findings can be explained by extant consumer behavior research findings and concepts. Study 4 itself found an explanation for the relatively high concentration of cognition-based reasoning at the refreezing stage in the form of post-hoc rationalization (Connolly & Zeelenberg, 2002). A tendency for consumers to find rational arguments to justify their actions is potentially amplified due to the setting of Study 4, which employed retrospective narratives. As time passed from the examined most recent switch, consumers’ capacity for conjuring rational arguments to justify their behavior also increased.

Study 2 added depth to the findings regarding the tendency toward cognitive reasoning at the unfreezing stage as monetary factors such as complementary investments and contractual costs can create a strong lock-in effect. Consequently, these arguments can be used not only to abstain from certain types of switching such as cross-platform switching but also to justify within-platform switching. Furthermore, these findings also concurred with anterior mobile phone switching studies regarding the influence of monetary factors.

The division into cognitive and affective decision-making in Study 4 produced mixed results at the unfreezing stage. Cognitive decision-making can be associated with Study 3’s findings on device characteristics and involuntary switching, whereas affective decision-making can be associated with the same-side network effects in Studies 2 and 3 and branding in Study 2. These findings complemented Karjaluoto et al. (2005) from multiple perspectives:
They found technical problems as the strongest influence on initiation intentions. Involuntary switching as a concept includes technical problems – as a matter of fact technical difficulties are the most prevalent component in involuntary switching – but this expanded Karjaluoto et al.’s (2005) perspective by also including cases where mobile phones had been misplaced or rendered unusable. Although involuntary switching has been very rarely examined in switching research, it is not entirely a new concept either (see Handel, 2013). Consequently, the findings in Study 3 also lent credibility that Karjaluoto et al.’s (2005) findings seem to be still largely valid in the contemporary setting where the majority of the population already owns a smartphone. At a higher abstraction level, involuntary switching can also be viewed as a situational influence, which has been linked to consumer switching in other contexts (see Roos & Gustafsson, 2011; Salo & Frank, 2017).

Study 3 also found device characteristics to be an important reason for switching. When related to Study 4’s dichotomies, device characteristics can be seen as a cognition-based concept. These characteristics are associated with tasks serving some identifiable utility. However, device characteristics can also be an affect-based concept if the characteristics serve as an object of desire without a connection to utilitarian tasks, similarly to the findings of Karjaluoto et al. (2005) regarding the influence of new mobile phone features on switching.

Same-side network effects in this context refer largely to social influences, which were categorized as affective influences in Study 4. Studies 2 and 3 found these social influences to affect switching behavior. Similarly, Karjaluoto et al. (2005) found that image, i.e. how an individual perceives themselves in relation to relevant social groups, was an influence on initiating the switching process. Consequently, the findings of Studies 2 and 3 overlap with Karjaluoto et al.’s (2005), although the concept of social influences was more encompassing in Studies 2 and 3. Consequently, these studies further validated the findings of Karjaluoto et al. (2005) in a contemporary setting.

Branding is a switching influence that is not often associated with the initiation of the switching process and consequently Karjaluoto et al. (2005) found it an influence on selecting an alternative rather than initiating switching. Similarly, Study 2 associated branding with change stage selection rather than unfreezing stage initiation. However, Study 4 bridged initiation and selection together in situations where consumers initiate the switching process by identifying an alternative. On those occasions where consumers are pulled toward an alternative, branding played a notable role. Therefore, branding was one of the most noteworthy influences driving affective reasoning in both the unfreezing and change stages in Study 4.

The change stage was different from other stages due to its heavy reliance on affective reasoning. However, this finding is uncommon in anterior consumer research literature. Consumers have been found to rely on non-conscious influences and heuristics when selecting an alternative for an incumbent product (Fitzsimons et al., 2002; Hauser, 2014). Specifically in the mobile phone context, consumers are also found to be driven by hedonic considerations (Wilska,
which falls perfectly in line with the change stage operationalization to hedonic and utilitarian motivations in Study 4. Moreover, affect-based influences such as attachment (Kim & Sundar, 2014), affective inertia (Lin & Huang, 2014; Lin et al., 2015) and familiarity and brand perceptions (Karjaluoto et al., 2005) have been found to influence consumer mobile phone selection and use behavior. Study 3 concurred with these findings as brand relationship was identified as a strong switching cost. Therefore, brands can also create a strong lock-in effect that influences mobile phone selection behavior by inducing within-platform switching.

5.2.2 Network Effects

What has been examined almost religiously in relation to mobile phone switching is traditional technology acceptance influences: perceived usefulness and perceived ease of use. A large portion of these studies has found these to correlate significantly with either switching intentions or actual switching behavior. However, the empirical studies contained in this dissertation did not find ease of use or usefulness particularly important, which could imply that in the context of more mundane mobile phone switching, these influences are rather factors that are taken for granted as long as perceptions of them remain within tolerable boundaries. Consequently, extant studies have also found this same effect, as these two factors’ influence has been found to be either less significant or completely insignificant in the case of incremental switching when compared to transformational switching (Tseng & Chiang, 2013; Tseng & Lo, 2011; Xu et al., 2010).

It has been suggested that value perceptions and especially same-side network effects in the form of social influences play a considerably larger role in mobile phone switching compared to traditional technology acceptance influences (Kim et al., 2014). Other studies have also recognized the influence of same-side network effects on actual consumer switching behavior (Lee, 2014) and especially on switching intentions (see e.g. Chun et al., 2012; Jung et al., 2015). Similarly, same-side network effects have been linked to continued use intentions, in which case they can be perceived as inhibiting switching influences, too (see e.g. Kim et al., 2013; Park et al., 2013). Consequently, it can be deduced that social influence is important and context-dependent for consumer switching. Study 2 supplemented these findings by anchoring the development over time: the range of impact of social influences was found to be on the rise. Similarly, Study 3 supplemented these findings by linking same-side network effects to certain smartphone brands.

Although in the extant academic literature, same-side network effects have been rather comprehensively studied in the form of various social influences, cross-side network effects have received relatively little attention. No studies have been found to examine cross-side network effects in the context of actual switching behavior, and the evidence from studies examining behavioral intentions has remained mixed in both the network layer (Kim et al., 2015b) and application layer (Kim et al., 2016; Xu et al., 2010) of Yoo et al.’s (2010) mobile platform infrastructure. Study 2 may offer some insights especially on the dis-
crepancies in the application layer’s cross-side network effects. These network effects were shown to operate principally through conditional situations in which only the contextually dependent mass of subjectively selected key application had a considerable influence on mobile platform selection. This finding of Study 2 also ran counter to a contemporarily contested insight of network effect research that network size – or breadth of application variety in a mobile platform context – is the key determinant of platform value from the consumer perspective (Afuah, 2013). While this perception of the importance of network size may still be valid from a platform or application developer perspective – i.e. the supply side – the issue does not seem to be so straightforward from the consumer perspective – i.e. the demand side.

While network effects stem from stakeholders outside the platform, from the consumer perspective the value of the whole surrounding infrastructure is still concentrated on the mobile platform itself and especially on the associated brands. Study 3 underlined this perspective by finding an association between network effects and certain popular brands. A similar finding was echoed in Lin and Huang (2014), as a mobile platform brand’s future prospects were found to have a significant correlation with intentions to remain loyal or switch to another brand.

5.3 Integrated Contributions

This section presents integrated process and content perspectives to summarize the contributions. Consequently, this section also serves as a summary of how the findings of this dissertation contribute to the call to push to the edges the expansion of knowledge in information systems by producing contributions both on the data-driven contextualized level as well as on the general and abstract theoretical levels (Grover & Lyytinen, 2015).

Table 7 shows how the different content concepts discussed in each of the individual studies are positioned in the adopted switching process. Each study examined a different set of theoretical concepts and certain concepts may cover several process stages. For example, same-side network effects and social influences in Studies 2 and 3, respectively, influenced both the specific point in time when an individual’s switching process began and the manner in which a particular mobile phone was selected as a replacement. Consequently, Studies 2 and 3 provided lower-level concepts that gave a more context-specific view on consumer mobile platform switching. Hence, these studies responded to the request for data-driven contextualized contributions.

Studies 1 and 4 on the other hand responded to the request for generalizable theoretical contributions as they brought forth more summative concepts. Consequently, these summative concepts may include a combination of several lower-level concepts. For example, an individual may find a certain brand relevant to a certain social reference group to be a key determinant in a switching decision. In Study 4 this would be labeled as an example of hedonic value justification, whereas in other studies this would be associated with multiple con-
cepts such as same-side network effects and brand relationship costs in Study 2 as well as social influences and alternative attractiveness in Study 3.

Table 7 Integrated process and content perspective concepts

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
<th>Study 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfreezing</td>
<td>Change</td>
<td>Refreezing</td>
<td></td>
</tr>
<tr>
<td>Origin Factors</td>
<td>Destination Factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mediator Factors</td>
<td></td>
<td>Feedback Loop</td>
<td></td>
</tr>
<tr>
<td>Same-side network effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-side network effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contractual costs</td>
<td>Search costs</td>
<td>Learning costs</td>
<td></td>
</tr>
<tr>
<td>Complementary investments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand relationship costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced or assisted switch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switching costs (Personal attitude &amp; pricing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social influences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low satisfaction</td>
<td>Prior experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward switching</td>
<td>Variety seeking behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative attractiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitating conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Push</td>
<td>Utilitarian value</td>
<td>Cognition</td>
<td></td>
</tr>
<tr>
<td>Pull</td>
<td>Hedonic value</td>
<td>Affect</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-hoc rationalization</td>
<td></td>
</tr>
</tbody>
</table>

This integrated perspective for contributions also echoes fundamental issues in the extant switching research: hardly any study grasps the whole process of switching from unfreezing to refreezing. Rather, the extant research is still confined to silos based on process stages. As a result, the studies reviewed for this dissertation addressed only one of the three process stages, Karjaluoto et al. (2005) being the only exception to this rule (see Appendix). Furthermore, the difference between the unfreezing and change stages has not been well-recognized. Studies examining these two stages cannot be differentiated through research titles, key words or even examined construct labels, but rather through measured variable descriptions.

This dissertation contributes to the aforementioned issues by providing four studies that cover perspectives across several switching process stages at the same time. These studies present concepts that span different stages or that are confined only to a single process stage. While Studies 1 and 2 examine concepts pertaining to all of the three process stages, a holistic process presentation is fully realized only in Study 4. This is the only one to have a comprehensive perspective on the refreezing stage as well.
6. Implications

6.1 Theoretical Implications

From a research perspective, this dissertation offers a more comprehensive perspective on the consumer mobile platform switching processes than anterior research has been able to offer. Contrary to traditional research views in this domain, this dissertation concentrates exclusively on actual switching behavior as opposed to behavioral intentions. Thus, it gives a more grounded view of the real world compared to the large body of anterior research perspectives. Consequently, this dissertation also challenges some of the assumptions related to consumer switching of information systems. While extant research has relied largely on snapshot-like, variance-based perspectives heavily leaning on the legacy of technology adoption research, a comprehensive process understanding of switching has remained underdeveloped. Technology adoption is usually assumed to be a unique occurrence which is not easily fully replicable. These same assumptions also follow through to consumer mobile platform switching through the theoretical framework of technology adoption.

Adapting terminology from Ancona et al. (2001), time is assumed as linear time with a beginning and an end, starting from the identification of a superior technology and ending with the implementation of a transition to that technology. While switching can be perceived similarly as a single event, in a broader context, consumer switching is usually an event in a long stretch of similar events. Essentially, consumer switching is actually a continuous alternating between long stretches of continued use and short events of switching. Depending on the regularity of these switching events, one could perceive switching to form a cyclical time perspective in which a switch starts a new cycle of continued use. Consequently, due to the influence of the time perspective, consumers may experience switching events differently depending on which form of switch is occurring. In transformational switches – analogous to technology adoption in this context – there has not been a similar build-up of experience and familiarity, which on the other hand is usually present in the case of more common, mundane switching situations such as incremental or lateral switches. Consequently, the important moderating influence of experience has been recognized to some extent in consumer mobile platform switching (Venkatesh et al., 2012).

As a remedy, this dissertation presents a process model for consumer mobile platform switching that is derived from an established change process model (Schein, 1996) and rooted in actual consumer switching behavior (Study 4).
This model can be used to help understand which process stages and which forms of switching are actually affected by which influences. Consequently, we can see that in the consumer mobile platform switching context, traditional, context-independent technology adoption measures are experiencing waning explanatory power in comparison to other influences such as network effects. While the findings of this dissertation do not nullify the usefulness of the technology adoption legacy in the context of consumer mobile platform switching, it does point out an urgency to re-examine the underlying assumptions that it contains. Consumer switching is usually more nuanced compared to the paradigmatic shifts of technology adoption. As there are already less than substantial levels of explanation of consumer switching behavior (see Table 1, p. 12), there is a need to find new influences explaining switching behavior. This dissertation offers some directions in the form of affective modes of reasoning and network effects, which helps to deepen understanding of consumer mobile platform switching, but may not provide a comprehensive answer in itself.

The presented process model is not confined to mobile platform switching, either. It should be generalizable to other contexts as well. Consequently, it provides a high-level theoretical integration that brings together already established and connected research streams – technology adoption, switching and post-adoption continued use – that are not confined to the mobile platform switching context. Therefore, the process contributions can be viewed as a response to the call to create an overarching theoretical framework for switching (Bhattacherjee et al., 2012) as well as the call to create high abstraction level theoretical contributions in information systems research (Grover & Lyytinen, 2015).

Besides general contributions, this dissertation also makes contextual contributions, which have been requested in information systems research generally (Grover & Lyytinen, 2015) and in the consumer switching context in particular (Salo & Makkonen, 2018; Ye & Potter, 2011). For example, the inductive approach in Study 3 highlights the importance of recognizing the influence of involuntary switching, which has not been recognized in consumer mobile platform switching research before. This influence may not be as important in other switching contexts such as mobile application switching. It is rarely the case that a mobile application would not be available for re-downloading if the originally downloaded version became corrupted. Similarly, concepts that are common in mobile application switching – such as multi-homing and trialing behavior (Salo & Makkonen, 2018) – are not easily transferable to mobile platform switching. Therefore, these contextual findings are not straightforwardly generalizable to all the possible switching contexts, but rather they contribute to the accumulated knowledge regarding consumer mobile platform switching.

### 6.2 Practical Implications

From a business practice perspective, the contributions of this dissertation remain in the context of consumer mobile platform switching. For mobile platform companies, it is important to recognize that consumer reasons for initiat-
ing a switching process and for selecting an alternative might be completely different. A key generalized difference is that consumers have a tendency to refer to affective reasoning and hedonic motivation when selecting an alternative, whereas cognitive reasoning plays a larger role at other stages of the switching process. While the branding and functionality of a mobile platform still play a role, especially in the case of selecting an alternative, network effects have also emerged as important switching influences.

Value for consumers has shifted to the upper layers of the mobile platform infrastructure such as applications and services, as long as certain subjective basic requirements are fulfilled. At the application and service layers the traditional wisdom of network effects that more is better does not apply from the consumer perspective. Rather, these effects are conditional to a subjectively defined amount of key applications that need to be fulfilled before a mobile platform becomes a viable alternative.

In addition, same-side network effects, i.e. social influences, have an increasing influence on consumer mobile platform switching. Mobile platforms are essentially ubiquitous connection platforms through which consumers can interact with each other. Therefore, application and service compatibility among close social networks such as friends and family become an important influence on switching behavior. Since optimal compatibility among several social networks may not always be possible, consumers have a tendency to cope with this complexity by observing and seeking advice from other people. This finding would suggest that there is still room for improvement in network marketing in consumer mobile phone markets.
7. Limitations and Future Research

In their review, Orlikowski & Baroudi (1991) included four disregarded perspectives to criticize interpretive research. These criticizing perspectives are summarized in Table 8 along with explanations of how these perspectives have been considered in this dissertation. The discussion is then continued on how these perspectives might still limit understanding regarding consumer mobile platform switching and how they could be addressed in future research.

Table 8: Critique of interpretive research, adapted from Orlikowski & Baroudi (1991)

<table>
<thead>
<tr>
<th>Disregarded perspectives</th>
<th>Description</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surrounding conditions</td>
<td>Certain meanings can become accentuated in data, yet causing external conditions are rarely examined.</td>
<td>Study 1: Proposed framework designed to cover external conditions more broadly than anterior frameworks. Study 3: Highlights the presence of switching influence that is commonly framed out of scope in switching studies. Study 4: Explores differences in three market settings; provides a comprehensive perspective on the whole switching process.</td>
</tr>
<tr>
<td>Unintended consequences</td>
<td>Actions can lead to unintended consequences such as enforcing existing behavioral and social structures (Giddens, 1979).</td>
<td>Study 4: Concept of post-hoc rationalization explains post-switching behavior and can be used to mask cognitive dissonance associated with buyer’s remorse (Bell, 1967; Festinger, 1957).</td>
</tr>
<tr>
<td>Structural conflicts</td>
<td>Structural contradictions in social behavior may eclipse an individual’s self-understanding and explanations for inconsistencies between intentions and actions.</td>
<td>Studies 2, 3 and 4: Examine actual consumer mobile platform switching as opposed to behavioral intentions. Study 2: Explores social realities among four different Finnish consumer groups to verify how the main study subjects, students, might differ from other consumer groups.</td>
</tr>
<tr>
<td>Historical change</td>
<td>Behavioral structures have taken shape over time, but historical influences and possible changes over time are often overlooked.</td>
<td>Study 3: The switching behavior development of students is evaluated over a three-year period.</td>
</tr>
</tbody>
</table>

**Surrounding conditions** are addressed particularly in Studies 1 and 3. The presented framework in Study 1 includes a dimension which specifically urges research to examine surrounding conditions called mediator factors. Study 3 sharpens this picture by identifying involuntary switching as a key influence on switching initiation and expands anterior findings (Karjaluoto et al., 2005) into situational contexts. Furthermore, Study 4 explores market settings in three countries and finds differences stemming from the market structures. Despite their examination of surrounding conditions, these studies do not provide a comprehensive picture of how external conditions might influ-
ence consumer mobile platform switching. Furthermore, there are only a few studies to supplement these findings. Therefore, Kim and Park’s (2014) call for further cross-country examinations is still valid and can be expanded to call for more comprehensive research on how surrounding conditions influence consumer switching.

Furthermore, Study 4 is also the only study in this dissertation to examine comprehensively the switching process from the unfreezing stage to the refreezing stage. This kind of comprehensive process perspective is still lacking in the extant consumer mobile platform switching research and thus the study responds to Grover & Lytytinen’s (2015) call to formulate a high-level theoretical model to provide an abstract and comprehensive picture of the examined phenomenon. However, the more contextualized Studies 2 and 3 do not extend their examination comprehensively to the last stage of switching: refreezing. Consequently, this dissertation does not collectively manage to fulfill the other end of the call for improved contributions in information systems research (Grover & Lytytinen, 2015). Although Studies 2 and 3 provide data-driven contextualized contributions for consumer mobile platform switching at the unfreezing and change stages, similar contextualized contributions are left very narrow at the refreezing stage. However, this limitation in the contributions opens an avenue for future research as there is still room for studies examining the whole switching process at a data-driven contextualized level.

Unintended consequences are addressed in Study 4, which explains the shift in the mode of reasoning at the unfreezing stage through the concept of post-hoc rationalization (Connolly & Zeelenberg, 2002). This concept is a coping mechanism for the psychological discomfort resulting from initial intentions and expectations not meeting the ensuing reality (Bell, 1967; Festinger, 1957). However, the question of how the coping mechanism influences subsequent switching behavior remains unanswered. Extant research recognizes the influence of prior experience on consumer mobile platform switching (Venkatesh et al., 2012), but does not explore the intricacies of how these experiences form and how different experiences influence mobile platform switching. Therefore, there is an avenue for future research to understand how coping mechanisms such as post-hoc rationalization influence subsequent consumer switching behavior around complex technology products.

Structural conflicts are addressed in a way in all the empirical studies of this dissertation, as Studies 2, 3 and 4 examine actual switching behavior as opposed to behavioral intentions, which has been a standard way of studying switching behavior in information systems. Study 2 sharpens the understanding regarding these potential structural conflicts through its research design. Focus group discussions can help participants to reflect critically on their behavior when it is compared to others in facilitated discussion. Furthermore, comparison among four different consumer groups can reveal differences in group-level dynamics which can also further understanding of individual-level structural conflicts. Such group-level differences are found in Study 2 as well in extant research (Kim & Park, 2014; Sell et al., 2014). However, the overall
understanding is not yet very comprehensive, which suggests avenues for further research.

The discussion about structural conflicts also has a methodological aspect in relation to the intention-behavior gap. Most of the extant research on consumer mobile platform switching is conducted as ex-ante analysis, whereas the studies in this dissertation were conducted as ex-post analysis. Both of these analysis approaches have caveats; ex-ante intentions do not always result in the intended actions, whereas ex-post accounts may give a sugar-coated picture of actual reality due, for example, to post-hoc rationalization behavior. Therefore, there is an opportunity for future research to bridge these methodological perspectives with a longitudinal study that follows through all the three stages proposed in the consumer switching process model.

**Historical change** is an issue that partially relates to the aforementioned methodological dilemma. However, here the issue is to follow through multiple switching cycles as opposed to just one in order to gain a comprehensive understanding of the longitudinal development of consumer mobile platform switching. Study 3 addresses this issue by examining switching over a three-year period that catches the transition toward more comprehensive smartphone penetration in Finland. However, Study 3 does not follow individual research subjects for the three-year period, but rather examines comparable batches of individuals at one-year measurement intervals. There are currently no comparable studies in the extant body of research to examine historical change in consumer mobile platform switching. However, following an individual over multiple mobile platform switching cycles would give a more comprehensive understanding of individual-level mobile platform switching influences. This type of examination could also better account for the role of unintended consequences and experience than the extant research perspective. Hence, there are avenues for future research that would particularly account for individual-level development over multiple switching cycles.
8. Conclusions

This doctoral dissertation contributes to the discipline of information systems by fulfilling the initial research objective to **unify and improve the theoretical foundation for consumer switching using an empirically grounded mobile platform context**. Fulfilling this objective required answering two research questions that were targeting understanding the switching process and the main reasons influencing consumer mobile platform switching.

This dissertation’s contribution to the first research question is to provide a three-stage process model for consumer mobile platform switching that was based on the Lewin-Schein model of change and rooted empirically in actual consumer switching behavior. This model provides the unification and improvement for the theoretical foundation of consumer switching research by integrating aspects from technology adoption research, consumer switching research and post-adoption continued use research.

The findings on the process perspective provide structure for the second research question regarding the main reasons influencing consumer switching decisions. The reasons to initiate switching are distributed quite equally between needs and wants. Needs-based reasons can be associated with important mobile phone device characteristics or influences that cause involuntary switching. Wants-based reasons are related to brands and same-side network effects, i.e. social influences. The selection of an alternative is more often justified with affective and hedonic reasons stemming also from branding and same-side network effects. However, monetary influences and both cross-side and same-side network effects play a role at this stage, preventing cross-platform switching by locking consumers into a mobile platform that is compatible from both the social and technological perspectives. Once a switch has been made, consumers have a tendency to confirm that the switching decision was correct through rationalized argumentation. This tendency is so frequent that it can be viewed as post-hoc rationalization behavior, i.e. rationalized arguments coined post-hoc that were not available during the actual switching process.

The research objective of this dissertation is fulfilled in the form of a developed process model that integrates extant theoretical frameworks. Generally, a pleasant structure has also emerged for the whole dissertation. Study 1 introduces the underlying problem or lack of understanding and provides a crude theoretical framework to improve understanding of the examined phenomenon. Studies 2 and 3 examine the issue inductively at a very detailed and con-
textualized level, although from inhibiting and enabling influence perspectives, respectively. Study 4 ultimately brings everything together with a data-driven and comprehensive high abstraction level framework for structuring the process of consumer mobile platform switching. The process model is validated with empirical research perspectives that expand extant understanding on consumer mobile platform switching, particularly in the information systems context.
References


## Appendix

### Table 9 Full table of studies examining key variables in relation mobile platform switching intentions

<table>
<thead>
<tr>
<th>Variable Description</th>
<th>Level of supporting evidence by switch process stage*</th>
<th>Refereed studies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unfreezing</td>
<td>Change</td>
</tr>
<tr>
<td>Utility</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
<tr>
<td></td>
<td>Lin et al. (2017)</td>
<td>Kim et al. (2015b)</td>
</tr>
<tr>
<td></td>
<td>Teng et al. (2009)</td>
<td>Kim et al. (2016)</td>
</tr>
<tr>
<td></td>
<td>Tsai &amp; Ho (2013)</td>
<td>Lin et al. (2015)</td>
</tr>
<tr>
<td></td>
<td>Tseng &amp; Lo (2011)</td>
<td>Sell et al. (2014)</td>
</tr>
<tr>
<td></td>
<td>Xu et al. (2010)</td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>or a feature</td>
<td>Jung et al. (2015)</td>
<td>Sell et al. (2014)</td>
</tr>
<tr>
<td></td>
<td>Lin et al. (2017)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tsai &amp; Ho (2013)</td>
<td></td>
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<tr>
<td></td>
<td>Tseng &amp; Chiang (2013)</td>
<td></td>
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<tr>
<td></td>
<td>Tseng &amp; Lo (2011)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Xu et al. (2010)</td>
<td></td>
</tr>
<tr>
<td>Monetary influences</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
<tr>
<td>phone acquisition</td>
<td>Kim et al. (2015c)</td>
<td>Hsu (2014)</td>
</tr>
<tr>
<td>price, continuous</td>
<td>Teng et al. (2009)</td>
<td>Karjaluo et al. (2005)</td>
</tr>
<tr>
<td>usage costs or unre-</td>
<td>Tseng &amp; Chiang (2013)</td>
<td>Kim et al. (2016)</td>
</tr>
<tr>
<td>losses</td>
<td>Xu et al. (2010)</td>
<td>Lin &amp; Huang (2014)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Park &amp; Koo (2016)</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>Strong</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Xu et al. (2010)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Weak</td>
<td>Strong</td>
</tr>
<tr>
<td>Feeling of satisfaction or dissatisfaction gained from using a mobile phone or a feature</td>
<td>Fan &amp; Suh (2014)</td>
<td>Hew et al. (2017)</td>
</tr>
<tr>
<td></td>
<td>Tseng &amp; Lo (2011)</td>
<td>Kim et al. (2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kim et al. (2015b)</td>
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<tr>
<td></td>
<td></td>
<td>Lin et al. (2015)</td>
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<tr>
<td></td>
<td></td>
<td>Lin &amp; Huang (2014)</td>
</tr>
<tr>
<td>Variable Description</td>
<td>Level of supporting evidence by switch process stage*</td>
<td>Referred studies</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Variable Description</td>
<td>Level of supporting evidence by switch process stage*</td>
<td>Unfreezing</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Uncertainty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative psychological reactions to new and/or unknown situations</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td>Kim et al. (2015c)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teng et al. (2009)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cross-side network effect</strong></td>
<td>Benefit derived from using a certain platform or services associated with it</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Surrounding conditions</strong></td>
<td>External conditions influencing switching process or compatibility</td>
<td>Weak</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expectations</strong></td>
<td>Pre-consumption belief about the performance of a product</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Promotion</strong></td>
<td>Influence by media, reviews, advertising, news, sales or promotions</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Innovativeness</strong></td>
<td>Willingness to try out any new information technology</td>
<td>Weak</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Descriptive label definitions

**Strong**
study n > 3, insignificant relationship share < .15 of studies

**Moderate**
.15 ≤ insignificant relationship share < .50 OR study n < 4, insignificant relationships share = 0

**Weak**
insignificant relationship share ≤ .50

**Not supported**
no significant relationship found between examined variables

**Not examined**
no study examined variable in given context

Insignificant relationship share = \( \frac{\text{number of studies finding relationship insignificant}}{\text{number of studies examining relationship}} \)

Studies with partially insignificant relationships counted as 0.5