

Original cases

Appendix F: Case Juxto @Service

Packaging of IT Services – Conceptual and Empirical Studies

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1 Introduction

“Home computers are being called upon to perform many new functions, including the consumption of homework formerly eaten by the dog.”

– DOUG LARSON

1.1 The subject of IT services – case in essence

This research (Appendix F) provides a detailed description of an empirical study called Juxto @Service. It is grounded on the researches by Kaitovaara (2001a; 2001b). Based on the successful experiences and worthwhile contributions gained with the previous Case Magnus^{F1} (discussed deeply in Appendix E, see also Nieminen 1997, Nieminen and Auer, 1998), the Case Juxto @Service followed it. The initial situation for this case was different because there was already an IT service product to start with and the target IT service provider organization was not anymore operating internally. The case did not happen in the monopolistic environment but in a real competitive market with external, real paying customers. In other words, the IT service provider was an (external) IT service vendor. Lastly, the appendix has been written intentionally in such a form that it can be read irrespective of the doctoral thesis. Of course, the readers will benefit from familiarizing themselves with the main research as well.

An effect of Sipilä’s (1996) writings on the packaging of professional services is shown, of course, in the original study. Case Juxto @Service is related to services that are created, delivered, provided, enabled, or used with information technology (IT). Hence, the IT artefact acts a tool for performing services communicating with others. It is about improvement of the current situation of customer services. Furthermore, the original paper written by the Consulting team (I was associated with this team) is not attached here as an appendix because it has been classified as confidential company information. I intentionally dismissed some pieces of detailed information in this appendix and also raised the level of abstraction in order to maintain confidentiality prerequisites of the case organizations. The detailed issues dealing with the future development of the IT service product are excluded here because of the competitors and their competing IT service products. Therefore, a detailed IS architectural illustration is excluded from this appendix.

This is not a longitudinal study covering the life cycle of IT service products and their success in the market after packaging. Professional packaging of IT services

^{F1} The main idea of the research case Magnus was to improve the internal customer’s personal productivity by offering a networked personal computer environment with a range of applications and various services. The IT service provider organization was the local IT unit which operated in the in-house market.

does not necessarily guarantee success, although it raises the probability of success. There can be many factors involved, such as an inappropriate choice of technology, the correct timing of the launch, a “badly chosen” price and the situation of the market and competition therein, which affect the eventual success of the IT product. This study does not focus on these factors. Instead, it focuses on the development and adaptation of the chosen approach to the packaging of IT products and of the organization that produces it. It is not essential to discuss the success of this IT service product in the long run, but rather whether the approach was practical and suitable to the IT service involved in the case.

1.2 Research interest – objectives and questions

As with this empirical study, it is important to achieve understanding both of how IT services are packaged and what an IT service product means in particular situation. Whether it is worthwhile to use the packaging of IT services is also being studied along with this case. In fact, these are issues that are of concern in the main research. On the other hand, this empirical study has been carried out in premises of its own and in accordance with its terms. That explains why it has slightly differently formulated research objectives.

Juxto @Service acts as an example of a packaged IT service for real customers (and their customers), which was originally developed by the responsible team. And as being the IT service product, a major part of it is formed on the IT artefact but part of it is dependent on people who deliver it to the customers. Initially, it was treated already more as a “ready-to-run” IT service product – not an existing IT service as such. In this sense, the actual case started where the former Case Magnus ended. On the other hand, according to the members of Juxto @Service team, there was a real need for change for the future development activities. An assignment of the case included that the guidelines were given for the IT Consulting team on how Juxto @Service can be designed, developed, and improved more holistically. One of the members of Juxto @Service team even stated: “Can you help us by offering the means to develop Juxto @Service?”. It is remarkable, that before the author was in touch with this case, the IT service product was not developed with these particular principles of the packaging of IT services. I introduced the principles of the internal description and the component view to the Juxto @Service team within the frames of this research, and the principles were systematically applied in this case. More specifically, if compared to the Case Magnus the ideas of the modularity of the component view were expanded more towards the domains of information systems (IS) design and development.

The main purposes of this research are to find the effects of the packaging of IT services on IS design and to study the differences in the outcomes of the packaging of IT services. Other more specific purposes are as follows; first, to seek the effects on the organization and its offering. Second, to discuss the potential benefits using the principles of the packaging of IT services. Third, to contrast an IT service

product that has already been packaged (not according to the principles of this research) with an IT service that would be packaged using the principles of this research. Fourth and finally, to study the possible varying degrees of the packaging of IT services between the internal customer and the external customer. Methodologically these will be achieved through action research (AR) with constructive research.

The empirical study appendix seeks to understand the following set of research objectives and questions:

1. How does the packaging of IT services affects the design activity in IS development?
 - 1.1 How do the principles of the packaging of IT services affect the IT service provider organization and its offering?
 - 1.2 What is the benefit using the principles of the packaging of IT services?
2. Are there any differences in the outcomes of the packaging of IT services?
 - 2.1 In particular, are there any differences between the IT service product that has not been packaged according to the principles and the IT service product that has been packaged according to the specific principles?
 - 2.2 What is the degree of the packaging of IT services for the purpose of the internal customer, if compared to IT services packaged for the purpose of the external customer?

1.3 Research process

This research can be divided into three major parts. This is the first part, "Introduction" (Chapter 1), which contains an introduction to the appendix as a whole. It also contains the basis for the research and the research problem as well as the purpose of this research. The part continues with the research methodology (Chapter 2) providing further insight into some issues related to the basis for this research such as grounds for selecting and anchoring AR as a method for this study. In addition, the research design of the case and the method are introduced. The research has evolved from the subject of a single-case study (Case Magnus) to a more participative approach of this case, as I was Head of a Team supporting IT packaging activities and thereby actively involved, with benefits for both me as a researcher and for the organization.

The second part is the empirical one, where the actual case is being introduced and studied. Chapters of the part are numbered from 3 to 5. It provides the initial situation of the case company and some discussion about its IT services dated back to the year 2000 (Chapter 3). The existing IT service product Juxto @Service is being analyzed (Chapter 4). The suggested new IT service product and in particular, an innovative application and extension of the component view in terms of the packaging of IT services are introduced (Chapter 5).

In the third part, the Appendix F of Case Juxto @Service will be completed with a different chapter for discussion and conclusions (Chapter 6). It includes research summary, some comparisons in the form of tables, research findings and contributions. Finally, the last Chapter ends with a discussion about the limitations of the research. Figure 1.A. depicts a completed research process as an empirical study of the Case Juxto @Service.

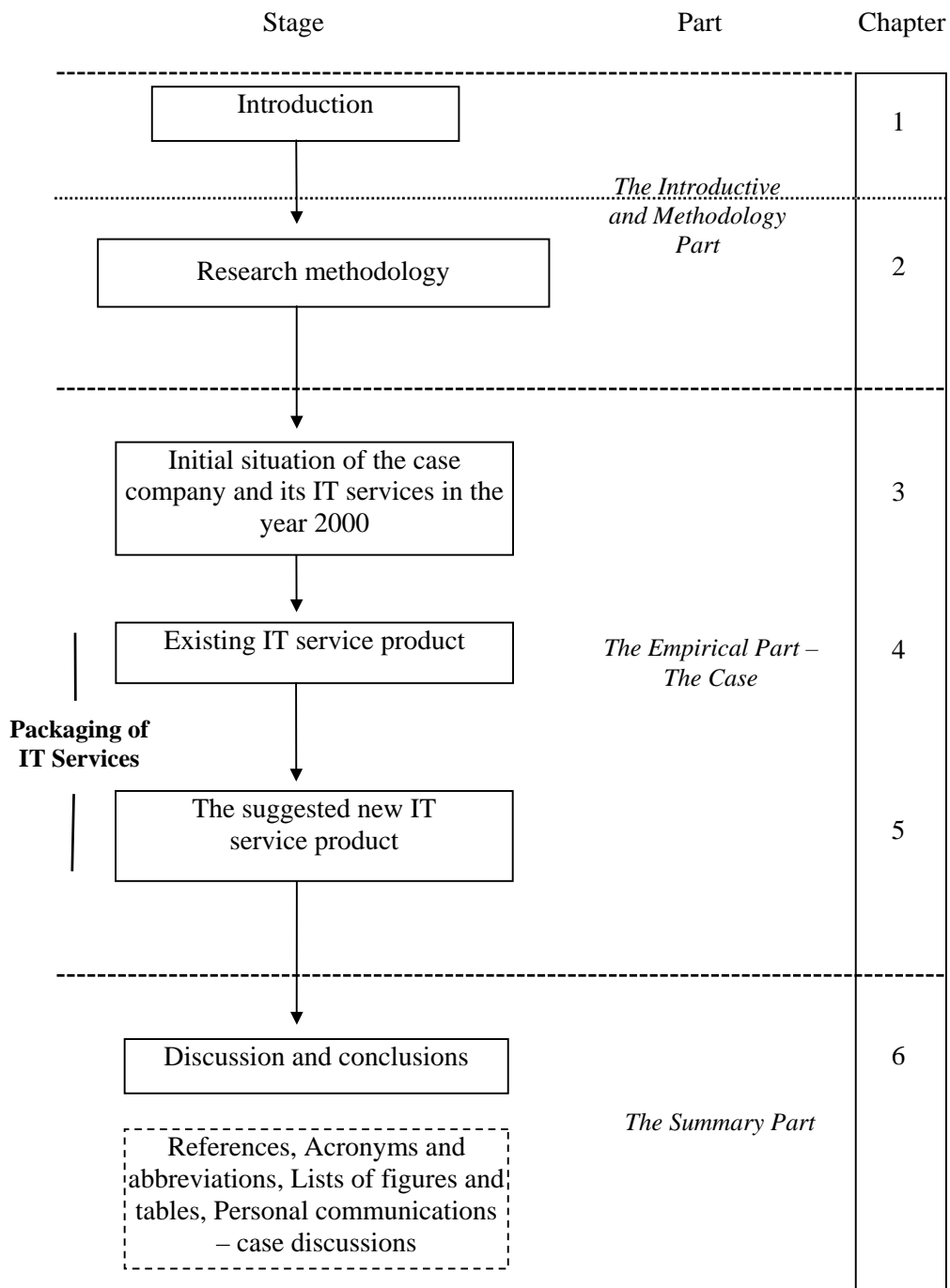


Figure 1.A. A completed research process of the Case Juxto @Service.

2 Research methodology

2.1 Selecting and anchoring methodology to research

Issues and grounds which have affected both the selection of research approach and the application of methods to the research are discussed within research methodology. Quality of research and threats to validity as well as rigor of research are also considered. Moreover, it is essential to understand that the research method for this particular case was AR, not case study. For the sake of simplicity, however, the project is called a case within the research methodology.

My intervention was needed for the development of Juxto @Service since I had a previous experience in the required field of IT service development, or so called “conceptualizing”. This case was not just an objective research project focused on collecting research data from the target organization and analyzing it. Neither was this just an IT service packaging-oriented consultancy project but a serious research project with more subjective participatory observation. There was a real intention of changing the circumstance of the case organization within a given time frame. Hence, a different research design and approach was required in order to make necessary changes to the initial situation. AR can address complex real-life problems (or problematic situations) and the immediate concerns of practitioners (Avison et al., 1999, p. 95). A primary reason for selecting AR as the method of this study is that it is a research method in which participative and action standpoints are combined. AR is typically used as a means of conducting IS research and also as a framework for information systems development (ISD) (Stowell et al., 1997). I was interested in both action and research simultaneously: I had a participative role as an employee of the company as well as a role of Ph.D. student of academia. This can also be referred to as a dichotomy between the roles of a business practitioner and a researcher. In addition, I was ultimately in charge of the project. Avison et al. (2001) call this responsibility pattern an identity domination, in which the researcher and the practicing organization professional were the same person. Specific and immediate action needed to be taken in the case organization because it had an original practical interest to be fulfilled – that is, how the current IT service product should be, so called, “conceptualized” in the near future. More specifically from a diagnostic standpoint, verbally given broad assignment included intention of their IT service concept development and how to approach the development. According to the terms of Avison et al. (2001), this makes my AR project a practitioner-initiated and in particular, a client initiated project. Based on the informal assignment (Avison et al., 2001 refer to informal control structures when no written agreements exist – as in this particular case), the set of research objectives were drawn on these premises. The original interest of problematic situation was discussed and approved by my team and the target case organization (the dedicated team). Above all, there was collaboration between research interests and practice in business which is emphasized in AR. Evidently, approved decisions and commitments were kept within the case and the common

goal for IT service development purposes was achieved. In the spirit of Lau (1997), the suggestion for solving a problematic situation was introduced for practitioners in the business, and at the same time, it contributed new knowledge for the theory of the packaging of IT services. There were limitations for the project which meant that some AR details suggested by the theories were not followed. For instance, AR is cyclical by nature but it was not possible to perform multiple iterative process cycles totally as proposed by Susman and Evered, 1978 (especially here, regarding to their whole process) in the given time frame. It can be stated, however, that during the research process other iterative cycles of activities were involved – as typically discussed in terms of AR. Sarah et al. (2002, p. 545) found in their business practitioner-researcher roles that “...it is more important to finish a cycle of research on time in accordance with the organization cycles, than to finish according to a complete or pure model of research”. It was especially true in this case because the business moves on and will not wait for my AR with multiple cycles to reach it. I also had to adapt to the prevailing context. And what is ultimately important to realize is that the methodological details of AR are not well-established in the IS yet (Lau, 1997). It is still an evolving research paradigm but I am trying to do my best to illustrate what happened in my AR project.

2.2 Research design and approach

In this empirical research, the research approach to IS is highly interpretive by nature. In Figure 2.A. an action-oriented approach is combined with constructivism in the research. This rich picture shows the actual story of my research. Hence, the illustration is divided into the views of researcher and practitioner. From the researcher’s viewpoint, my research aim described as how the theory from the previous Case Magnus can be applied to this new different Case Juxto @Service. From the practitioner’s viewpoint, the real-world process occurs in a multivariate social setting. There again, a neat research setting in the real-world view of Case Juxto @Service can be approached in two ways. First, an existing IT service product is the starting point for the construction process: it is “the situation before”. Second, the construction itself is a matter of interest. A constructive objective at conceptual level is to produce the concept of IT services development (application of the IT service design referred as the packaging of IT services). But more importantly as emphasized in the illustration below, another (yet conventional) constructive objective is the real-world construction of the suggested new IT service product developed on the grounds of an existing IT service product: it is “the situation after”. With my action intervention, the framework and approach together acted as a transformative experiment that changed, re-interpreted and reshaped the constructions.

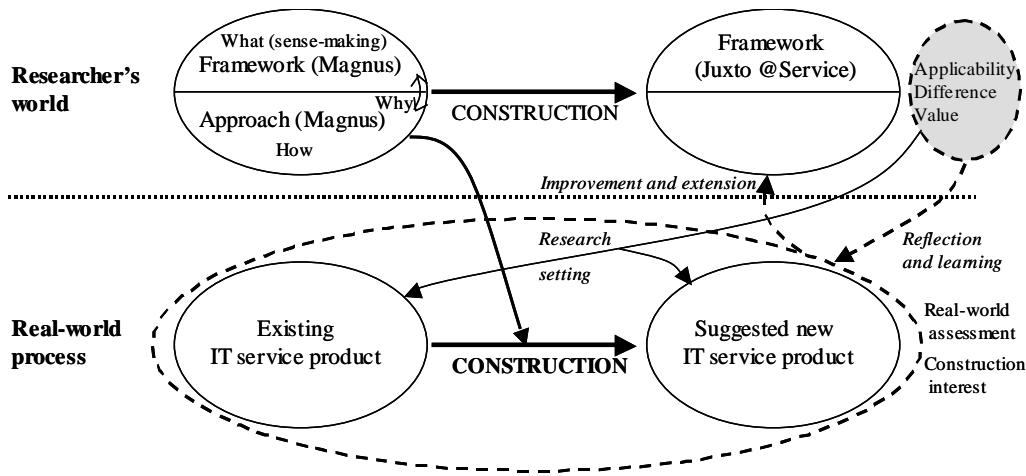


Figure 2.A. Action research combined with constructivism.

Theories originated from the Case Magnus formed a viable starting point for theories applied in the Case Juxto @Service. Sense-making for the framework is related to the theories of the internal description and the component view. They both answer to the question “what”. As the IT artefact is present in this kind of IT service (as in the previous Case Magnus), the technical description of the internal description is suitable for this purpose. An extension for the theory comes with the innovative idea of an evolution roadmap in terms of the component view. The approach is related to the program and the process of packaging IT services answering the question “how”. “Why” explains the relation between the approach and the framework: it is a reason for applying the theory to the real-world case. The actions were guided by the research framework and the approach originated from the previous experiments. I intervened in the research setting and my actions as a part of the team led to a favorable outcome and change in real business practises. As a reflection, the changes through intervention in the setting were observed and studied. This sense-making process – that is, reflection, learning, and improvement process cycle affected the framework as it was developed further. For the research setting, at least three criteria can be found: applicability, difference, and value. Applicability deals with the fact that the original theory based on the Case Magnus was an adequate baseline for the research, yet some improvement was needed and was achieved with a good effect. The theory was tested as was intended and found to be suitable for this new case with modifications and extensions. Especially the component view and its usage are extended with the Case Juxto @Service when compared to the know-how on the subject before. Also, applicability demonstrates the feasibility of the constructions. Difference criterion is related to applicability, as it was noted that the theory needed to be extended and reinforced. There were some differences between the theoretical framework of the existing and suggested a new IT service product. These differences emerged when I noticed that the baseline was neither totally satisfactory nor extensive enough to support the problematic situation characterized by the IT artefact-oriented service. Lastly, a

value criterion become evident since theory enables AR to advance both IS research and IS practice. Learning can be seen as a dual phenomenon consisting of the results generated from my actions and the AR research process itself. The reflection, learning, and improvement process cycle describes what was achieved as a result of my activities (constructions) and how was it accomplished (by applying knowledge on the subject, understanding insights better and thereby, cumulating knowledge on the subject). As an evaluation in the real-world, the immediate problematic situation was successfully solved. This can be proved from the positive feedback given by the case organization to my team about the realization of construction (referred in Figure 2.A. as real-world assessment and construction interest).

2.3 Research method

In this chapter the linkage from the research design and the chosen methods used are examined in more detail. The constructive approach of the research and the method of AR were applied in the empirical study. The selected methods for the research have a remarkable role because they affect the research targets in two ways: first, by reaching the research objectives and second, by carrying out the research process.

According to Kasanen et al. (1993), constructive research can be divided into the following six phases:

- (1) finding a practically relevant problem which also has research potential;
- (2) obtaining a general and comprehensive understanding of the topic;
- (3) innovating, i.e., constructing a solution idea (the core element of a successful constructive study: the innovation is often heuristic by nature);
- (4) demonstrating that the solution works;
- (5) showing the theoretical connections and the research contribution of the solution concept; and
- (6) examining the scope of applicability of the solution.

Kasanen et al. (1993) consider that there is no point in going on with the study, if the researcher is not able to produce any new solution to the problem. There were, actually, new solutions produced to the problems with these cases: the packaging of IT services – its theoretical framework are constructions and in particular, the suggested new IT service product – a construction also. In AR the aim is to support desired change in an organizational environment. The role of the researcher in AR is often blurred as the researcher is both an outsider and a collaborative partner (participant) in the change process (Braa and Vidgen, 1995). As noted, technically there are no strict definitions or agreed principles of AR – as there are many variants. Avison et al. (1999, p. 94) summarize these quite well by stating that AR combines theory and practice through change and reflection in an immediate problematic situation within a mutually acceptable ethical (i.e., no remarkable conflict between researchers and practitioners or among the practitioners

themselves) framework. Action researchers are encouraged to adopt an interpretive assumption and use more qualitative approaches. The method offers an opportunity to understand a phenomenon in its context. The general aim of the approach is to contribute the research and the practical concerns. In this way the theory leads to practice and vice versa: the researcher learns from the practitioners and the practitioners learn from the researcher. In other words, AR is a matter of collaboration with participants. (Baskerville, 1999; Baskerville and Wood-Harper, 1998; Braa and Vidgen, 1995; Checkland, 1981; Checkland and Holwell, 1998; Järvinen, 1999; Stowell et al., 1997; Susman and Evered, 1978; Yin, 1984)

AR can be viewed as a cyclical process with five phases (Susman and Evered, 1978):

- (1) diagnosing, identifying or defining a problem;
- (2) action planning, considering alternative courses of action for solving a problem;
- (3) action taking, selecting a course of action;
- (4) evaluating, studying the consequences of an action; and
- (5) specifying learning, identifying general findings.

The infra-structure within the client system and the action researcher maintain and regulates some or all of these phases jointly. Susman and Evered (1978) consider all five phases to be necessary for a comprehensive definition of AR. With regard to IS, there are a variety of different research forms within the class of AR approaches (see, for example, Lau, 1997) but the five-phase process was adapted. Multiple reflection, learning, and improvement process cycles were engaged.

In the beginning of the research process, the problem sketch was defined by the IT service product team (i.e., the Team responsible for Juxto @Service), the assignment was given to me with my team, and it was mutually accepted. Various kinds of internal documentation were provided in order to familiarize me and my team with the subject. In that time, there were also preliminary face-to-face interviews of the IT service product team in order to define the problem more accurately. In the action planning phase I tried to serve as a professional, providing leadership to guide the organization as well as its participants. It was known that I had experience with the IT service development. Thereby, some principles of packaging IT services seemed to be a suitable solution for the current situation because their potential was shown already during Case Magnus. In the essential phase of taking action, the decision was made based on my suggestion to proceed with the principles. Simultaneously, I reflected and learned from the experiences gained, and experiences modified the theory basis (i.e., the framework) of the research. The interviews of the members of the IT service product team gave me a view of the object, its services, and environment. Internet, Intranet, marketing material, and internal documentation were collected and analyzed in order to increase information. My involvement has allowed me access to confidential data, such as cost, pricing, and customer data as well as business, future development plans, and project plans. The gathered information from the face-to-face interviews was checked and re-checked by developing more specific questions. The key

members of both teams (i.e., those, who were supporting IT packaging activities and also those, who were the members of the IT service product team) reviewed and verified the draft papers during the research. In the evaluation phase the research case was supported by my knowledge of the principles of packaging of IT services. There was an evaluation meeting held, where my team presented the results of the study, and got positive feedback. Afterwards, there were some unofficial discussions regarding the results of the study and the given feedback was positive. Therefore, in the last phase, the problem was solved, and the two-way learning cycle was adopted by the responsible organizations. The illustration of personal learning and the learning of the case organization have a marked role in studying the high relevance subject. It gives us a set of usable knowledge and principles to approach, and most likely solve, a problematic situation of this kind in the future.

2.4 Quality of research design and approach

2.4.1 Empirical and validity challenges

Undertaking AR is difficult and establishing the validity is both time-consuming and challenging (Champion and Stowell, 2003). Validity regards the extent to which an observation measures what it purports to measure. Baskerville and Wood-Harper (1998, pp. 103-104) discuss possible validity criteria in IS AR. Thus, their five plus two characteristics argumentation are applied together with Yin's (1984) four criteria for judging the quality of research designs.

According to Baskerville and Wood-Harper (1998), the research should be set in a multivariate social situation where researcher action could intervene in the setting. Also, changes in the social setting were studied. All these criteria were met in the research. Yin (1984) lists four criteria for judging the quality of research designs: construct validity, internal validity (not for descriptive or exploratory studies like this one: on the other hand, Baskerville and Wood-Harper, 1998, argues heavily for internal validity in AR), external validity, and reliability. Construct validity is about establishing correct operational measures for the concepts being studied. To meet the construct validity criterion, a researcher has to select the specific types of changes that are to be studied, and demonstrate that the selected measures of the changes reflect the specific type of change that have been selected. The following criterion corresponds to internal validity in AR: "The immediate problem in the social setting must have been resolved during the research" (Baskerville and Wood-Harper, 1998, p. 104). Hence, the internal validity criterion can be seen to be fulfilled herein. The degree of external validity is the extent to which the causal analysis and explanations offered by the theory may be applied to similar phenomena, and thereby study findings are generalized. In the sense of AR and its external validity, this is a shared criterion with case study since the research illuminates a theoretical framework that explains how the actions led to the favorable outcome. However, it is often argued that high external validity in AR is quite hard to achieve. Reliability refers to the extent to which observations by

several researchers studying the same phenomenon with similar purposes will yield nearly the same results. Thus, the goal of reliability is to minimize the errors in a study. (Braa and Vidgen, 1995; Järvinen, 1999; Yin, 1984)

Consequently, there were issues focused in order to improve the validity. Probably one of the most essential establishments of validity was that the original problematic real-world situation was solved. However, the overall research design has its limitations to methods which can be addressed by the following criterion. Construct validity of the research was improved by discussions with a group of those, who participated in the case project. This validity criterion was improved by using multiple sources of evidence. In addition, the key informants reviewed the draft case reports and during the interviews there will be a possibility for the key informants to review and verify their own answers. Thereby, the method of data collection included participatory observation (Baskerville and Wood-Harper, 1998). The outcome of this empirical research has not been verified independently. A problem with the methods include different interpretations by different stakeholders. In the selection of the interviewees there were some refusals and without their contribution the results of the research study may lack some useful information. Representativeness of the study sample (13 key informants) and their willingness to answer the questions cannot be estimated beforehand but those who attended the study were interested in the subject. The observations were recorded and analyzed in an interpretive frame, as suggested by Baskerville and Wood-Harper (1998). From the reliability standpoint, notes were used during the research for improving the criterion. Reliability was also improved by archiving e-mails, interview notes, and documents. There are also some selected direct quotations presented in this research.

2.4.2 Rigor in action research

Rigor refers plainly how the research process is conducted. For the selected research method AR is typically associated with a symptom of a "more relevance, less rigor" method. In order to have more rigor in the action-oriented research approach, there are guidelines for controlling AR projects suggested by Avison et al. (2001). However at that time of active project I did not have an opportunity to familiarize myself with their later published research results. But as of this writing, similar control aspects can be found and they appear valid when reflected afterwards in my AR project. It is possible to derive from their writings that this project had the following characteristics: it can be referred to as a classic action research genesis, practitioner and researcher were the same person, and the agreement was defined broadly and verbally. Furthermore, Coghlan and Brannick (2001) also give some useful guidelines for improving rigor in AR projects.

3 The empirical part of the case

3.1 Initial situation of the case company and its IT services in the year 2000

As an introduction to the empirical part of the case, the initial situation of the case company and its service offering in the year 2000 are presented. The Sonera Corporation had a history long and rich in nuances as a government owned telecommunications company in Finland. It went public in 1998 and since then it has undergone major structural and colorful changes.¹ At the time of the research (May 2000 – June 2000), Sonera's operations comprised mobile communications, fixed network, the Internet, and a range of associated services. The corporation's business was divided into key areas, such as Telecom and Services. The Telecom business area was responsible for Sonera's fixed network operations in Finland and in regions neighboring Finland. The services business area comprised Sonera's service business and domestic mobile communications. As a result of changes in 2000, a subsidiary named Sonera Juxto Oy was formed, and it had around 450 employees with a turnover of 50 MEUR. Basically, it was more of a reorganization issue and the offered IT services and tasks continued somewhat the same – but with a new brand. The case company Sonera Juxto Ltd operated in the context of converging IT, telecommunications, and mobile industry. It was a wholly owned subsidiary of Sonera Corporation offering small and large companies applications to support their business as an Application Service Provision (ASP) service and related IT services, including IT service implementation, administration, care, and development. The main part of the case company's business, namely the application renting part or ASP, has in the recent past been hyped up to an almost ridiculous extent. Hence I prefer to state here that Sonera Juxto's business was IT business as it describes the whole concept better. Furthermore, the case company focused on delivering IT applications as comprehensive services over a fixed or wireless telecommunications network in Finland. The market where the case company operated was said to be service-oriented or solution-oriented. It was based on the business assumption that companies want to buy comprehensive services to their problems, not separate incompatible products or applications. These IT services were targeted at the whole business-to-business segment from small and medium-sized enterprises (SMEs) and to large enterprises. The market was characterized with a high speed of technological change and information density. The relationships to customers (or customerships) in this area were generally long term in nature. Length of the contracts is usually a minimum of two years and they often comprise several individual services. As the customership develops positively in time, more complex and sophisticated services are (hopefully) adopted by the customer.

¹ The merger between Telia and Sonera took place in December 2002. TeliaSonera offers a product portfolio in Finland under the Sonera brand. Number of employees in 2003: 6 661 (Finland), 26 694 (the TeliaSonera Group total)

The actual case called Juxto @Service^{F2} focused on the packaging of IT services and the IT service product's future development activities. According to the business plan, it was developed for the selected external customers of the company, such as small-to-medium travel agency businesses. Juxto @Service can support Internet-based electronic commerce solution by offering the possibility to have real time contact with the customer service. The main idea of Juxto @Service is to provide an access-independent, multi-channel contact center solution, which the customer company can offer to its customers, namely consumers or end users. In other words, it is a solution keeping close relationships with customers and their customers.

Initially, the case was already approached as more like a packaged IT service, because it has been marketed and sold by the dedicated team even before the research case was activated. For example, the market potential of the IT service product had been identified, it had some paying customers already, some of its IT processes were defined, and marketing and sales material were available. Juxto @Service was originally developed by this particular team, but they still needed support for the packaging of IT service as well as their IT service concept development. It was actually suggested by the Director (a person in charge for Juxto @Service) that the current IT service product should be, according to him, "conceptualized". Basically, the team had virtually no idea how to conceptualize the IT service product in terms on the future development activities – or at least, the ideas were not actively discussed nor written down in the specific document.

^{F2} The original name of Sonera @Service has been changed to Juxto @Service by Sonera Juxto Ltd on September 9, 2000.

4 Existing IT service product

4.1 The internal description

An assignment given to the Consulting team stated in short that “conceptualization is needed”. It was interpreted for developing more added value to the existing IT service product. Therefore, based on the previous experience on the packaging of IT services and its potentiality (i.e., Case Magnus), I dared to suggest the adoption of some or all of the principles of the packaging of IT services for this particular case. The existing IT service product’s main idea was to provide the same functionalities and information flows for every customer (and their customers). The challenge was that current functionalities of the IT service product did not answer some new emerging customer needs. In this research, I did not explore nor measure the customer needs specifically but they were concerned within some of the case discussions: needs ultimately affected the various design suggestions of the new potential IT service product.

An existing IT service is put through the internal description and in the spirit of the component view. As noted already in the Case Magnus, it is useful to try first to describe the existing IT services on the road to packaging of IT services with a means of the internal description. The entries are presented in their actual order as discussed in the original consulting paper with only minor changes and modifications such as ‘Market potential and customers’ was originally depicted only as ‘Market potential’, ‘Service description and effects on the processes’ is called here ‘IT service description: effects on the processes’ and so forth. As it can be easily noted, these variations do not affect substantially the results of the empirical study: their primal purpose is just to make this study easier to read than probably the original paper ever was. Originally some of the entries, such as ‘technical description’, were not examined as thoroughly as others but they were briefly discussed as they form a basis for the future suggestions.

Name of the IT service

The original for Juxto @Service was actually Sonera @Service, but it was changed later on (after the empirical study was done) in order to suit the IT service portfolio of the case company better. In this appendix F, however, the name of Juxto @Service is consciously applied. There were indications before the launch of the empirical study that there might be some changes to the name.

General description

According to the original business plan, the IT service product’s mission is to sell modular and scalable access-independent multichannel customer relationship management (CRM) services. In fact it was marketed by the case company and its Juxto @Service team as “The Customer Relationship Management Solution”. This kind of service is hosted from a service bureau through the Internet protocol (IP) network. Due to IP technology, the customer service representatives i.e., agents can

also be located anywhere, where the IP network is available. With Juxto @Service the customer gets the real-time multichannel management for the purpose of its customer care operations. In addition, Juxto @Service has its own internal HelpDesk functionality, which is created for supporting its customers. Figure 4.A. on the next page illustrates the environment in the existing situation.^{F3}

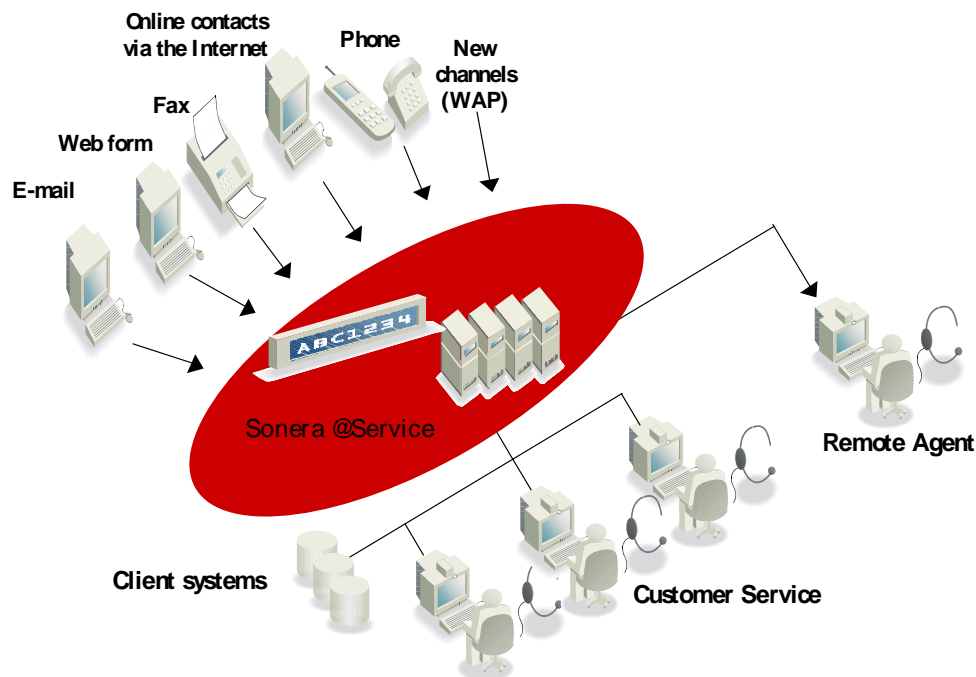


Figure 4.A. Multichannel service of Juxto @Service (erstwhile Sonera @Service).

There are several different parties involved in the operations of Juxto @Service, such as customers, consumers as well as vendors and other partners. It is also possible that the same partner could have more than just one role and relationship with it. “Customer” is defined here as the company that Juxto @Service is targeted to – that is, a business/corporate customer. “Consumer” means here the end user of Juxto @Service: the end user is the client of the business/corporate customer. So it can be stated that Juxto @Service improves customer services and thereby, it improves consumer services.

The use of IT service and added value for the customer

Juxto @Service creates added value for the external customers and their customers with its functionalities. From the case company standpoint, the initial IT service product idea was to provide the same IT services to every customer. From the customer standpoint, the customer has typically several channels for their consumer contact handling. With Juxto @Service these channels can be integrated

^{F3} Figure and part of the internal description’s issues and attributes were taken from the original marketing material, such as CD-ROMs.

into the similar consumer service process. Hence, the IT service product promises at least the following customer benefits:

- Implementing is easy, cost-effective, and fast;
- Consumers may choose the channel best suited to their needs and get personalized service;
- Consumer contacts are controlled, centralized, and easy to manage;
- Flexible reporting and contact monitoring functionalities (e.g., delivery e-mail routines of usage reports); and
- Development, implementation, management, and maintenance of the IT service product is taken care of by Sonera Juxto – that is, IT services are hosted by the case company.

Market potential and customers

The most potential customers are consumer-oriented companies that already have a customer register at some level, so the existing customer base was defined quite widely. This was based on a prediction that the contact center industry has huge market potential within years to come. The transformation towards IP-based customer service seemed to be going on rapidly. Also the companies were thought to be ready to outsource their mission-critical applications to ASP's.

IT services which compete with it and IT services it makes obsolete

For the moment there are no competing and substitutive IT services for the existing IT service product in Juxto's portfolio. These issues were dealt with already in a detailed business plan of the IT service product (the business plan is excluded from this appendix). On the other hand, at corporation level there is one project going on with some common operational features but it is targeted for different kinds of customers. And what is more important is that its platform is based on a different technological solution.

Fits for the strategies

The IT service product has to be in line with the strategy of the company and assist in achieving goals. For instance, it can be a source of competitive advantage or provide new opportunities for the business. It can also enhance company's image or reduce operating costs. In the long run, the IT service product should bring some long-term financial return. Juxto @Service existence should be justified in the strategy of the company.

Technical description

On the one hand, hardware and software and their fixed requirements and features are important issues for the implementation of the IT service product. The reason for importance can be found in the IT artefact-oriented service just as in this particular case. So there are technical issues of the IT service product which always need to be listed accurately for the packaging of IT services of this kind. From the technical point of view, the agent and consumer technical environments are separated. On the other hand, there are also marketing materials such as slides and documents, various offering documents, and contractual documents available. These materials – some of them developed for tangibilizing purposes – are already

created mostly by the Juxto @Service team. Furthermore, the IT service product's implementation process is based on the activities of the team members and their know-how on the subject. All detailed issues dealing with the technical description such as the delivery document are excluded in this appendix as well as those materials related to the marketing, pricing, IT service delivery times, and contracting (see a list in the section of Internal company documents).

IT service description: effects on the processes

There are as-is process descriptions available for most of the processes. The processes were not explored in this study so this appendix does not present the process illustrations. Leaving the specified illustrations outside has no affect on the contributions of this research whatsoever. In addition, the process illustrations and their descriptions are classified as internal information.

Versions

The versions can be examined from two perspectives: technically and from the customer perspective. From the technical point of view, Juxto @Service consists of several applications, and because of that, each of them has their own versioning. Together these different application components are integrated into a single version of the IT service offered. From the customer's point of view, different versions differ from each other by functionalities and performance. Typically, versioning complies with both, the technical and customer versioning. As a summary, the current version management of Juxto @Service has been found to be laborious. This is an observation that should be concentrated on in the future improvement projects.

The most important references

The most important references were listed for marketing purposes in order to get more credibility among the potential customers. The reference list consists of some companies e.g., a travel agency and a company operating in real estate business.

The price of the IT service

There are various pricing models applied to the existing IT service product. Basically no hardware or software investments are necessary for the customer, and only those channels that are used will be paid for. Invoicing is based on a fixed price. Fixed pricing offers cost predictability to the customers. However, the detailed issues dealing with prices are excluded here.

The IT service delivery time

Customers' questions concerning the IT service delivery time can be quite accurately answered based on the current IT service product and its implementation phases. However, the detailed IT service delivery times are excluded from the appendix.

People in charge

The Juxto @Service team is responsible for sales and development operations. There were agreed people in charge in the Juxto @Service team with personal duties and responsibilities.

Further actions plan and development suggestions

Before the empirical study and the project was launched, there were some development suggestions and ideas from the existing customers collected already, although this has not been a regular process. Simultaneously, there have been some “conceptualization” related development discussions held within the Juxto @Service team but no actual development roadmap has not been innovated or discussed extensively.

4.2 The component view

The component view consists of a standard part, a number of modules, and customized (tailored) parts. The service element is the function by which the IT service provider organization can offer added value. Actually, all the components of the different parts should provide services which are based on the creation of added value for the customers. The usage of the component view gives one the potential to adapt these ideas in the context of the IS development process. The standard part should be as large as possible. It forms a solid basis for the IT service product. In an operating IT artefact-oriented environment, technical objectives such as reliability, availability, and serviceability/scalability, have to be taken care of in the standard part. Thus, the standard part and its innermost technology has to be well-designed in order to develop the IT service product firmly in the future, while maintaining the long lasting relationships with the customers. For instance, the servers of web-based e-mail provider, such as Hotmail, must be online 24 hours a day, 7 days a week. In the perspective of the packaging of IT services, the software applications can be seen more like modules i.e., components providing services. Thereby, the ideas and thoughts of Component-Based Development (CBD) (see object/component pioneers like Bertrand Meyer e.g., Meyer, 1999a; 1999b or Clemens Szyperski e.g., Szyperski, 1999), which are originated in the object-oriented (OO) technology, fit in here as well. CBD is argued to offer the potential for rapid implementation and reusable software. However, the concept of the component is defined even more widely in this study. The component can be a packaged (IT professionalism-based) human service process that creates added value for the customer, such as user training on IT: it is not just a software unit. Furthermore, the customer approaches the IT service product from the direction of the customized part. This part should be available but minimized, because there is a need for unique tasks and services, which cannot be defined accurately in advance. The tailored part can play an important role in adding value for the customer. For example, the IT service product may require configuration and parametering to the customer's legacy systems.

The initial version of the component view (i.e., as-is version) formed a potential basis for the future development activities of the new IT service product. IT service features, functionalities and information providing opportunities were shortly identified in this case. For example, in the existing version of Juxto @Service, usage reports of the different channels are delivered regularly to the customers by e-mail as implicated in the standard part. The component view for the initial version of Juxto @Service is presented in Figure 4.B.

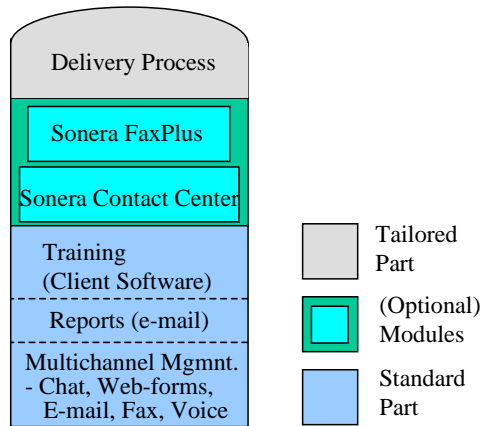


Figure 4.B. The standard part, modules, and customized/tailored parts of the existing version.

5 The suggested new IT service product

5.1 The internal description

This chapter deals with the suggested new IT service product and it is presented in the same logical (internal description) order as the existing IT service product. But more important than just carefully explaining the issues of the internal description is depicting how the component view can be innovatively applied in terms of development suggestions.

Name of the IT service

The name Sonera @Service was already quite familiar both internally and externally. But still, it was changed later on to Juxto @Service. The main reason for the replacement of the name was its better suitability to the IT service portfolio of the case company. This change took its place only a couple of months after the empirical study was done. Despite that previous name Juxto @Service is consciously applied here: it links the case company better with its IT service in question. However, it is possible that this assignment had an indirect – yet small influence on the change of name.

General description

There will be no substantial affects for the general description of Juxto @Service.

The use of IT service and added value for the customer

At the end of the empirical study, the future development suggestions were not implemented – as they were not meant to be within this project. Therefore, these value adding functions can be claimed to be quite artificial at this point. In other words, the benefits listed here are more convenient for actual marketing purposes than already valid issues that may directly benefit the customer:

- More sophisticated contact history management capabilities;
- Hence, improved capabilities for reporting (e.g., the customer can have the special usage reports of different channels through the Web-interface reporting system whenever needed: the reports can include data of the length of the customer contacts, average answer/response times, and queue times data. The customer is not dependent on regular delivery e-mail routines of usage reports anymore), data mining features, contact monitoring; and
- Supporting integration into customers' legacy systems: thereby, toward a more consistent consumer service process than with earlier versions.

Obviously, these benefits overlap with the benefits already mentioned in terms of the existing IT service product. The original benefits compose the solid basis for these suggested added values for the customer.

Market potential and customers

There were some potential customer segments found in this empirical study but no substantial changes were found. These few new segments were discovered on the feedback gathered from the customers before this empirical study took place. They were suggested together as a basis for the new IT service product development.

IT services which compete with it and IT services it makes obsolete

The situation could change dramatically afterwards if the suggested development plan is implemented in one form or another. So these issues need some reconsideration for the business plan if the suggested new IT service product will be developed and offered to the customers. Furthermore, there may be some competing as well as substituting IT services in Juxto's portfolio. Thus, the implications have to be carefully considered.

Fits for the strategies

The suggested IT service product is a logical continuation of Juxto's prevailing strategy.

Technical description

The technical description has a remarkable role of its own since the suggested track for the IT service product development will require several IT implementation projects in the forthcoming future – if they are accepted by the Juxto @Service team and the upper management level of the case company. In general, this kind of IT service product has a technical element strongly present which makes it possible to provide those functionalities promised to the customer. The IT service product has then, however, to be implemented with the support of the IT professionals.

IT service description: effects on the processes

Obviously if the IS development suggestions are to be implemented, they will affect the IT service processes. However, those were not innovated within this empirical study, partly because the tight time frame. However, in terms of innovating the processes it would be useful to underline making the operations more efficient, reducing the delivery times, and improving the quality of IT service.

Versions

The version management is not sufficient for suggested potential versions of the IT service product. This issue is not developed, however, within this empirical study as it is left for other projects to come. In terms of analyzing the existing IT service product, the version management is quite laborious. Therefore, versions could be managed by some sort of version and configuration management system. This would make it easier and more controllable to provide different versions based on various module combinations of the IT service product.

The most important references

There were no changes to the list of the most important references when compared to the existing IT service product. Hopefully, if development suggestions are partly or totally implemented in the future it is highly likely the list will become longer.

The price of the IT service

Based on the ideas of development suggestions of the IT service product, there will be more features, functionalities, roles, and information flows available. So more pricing models will be needed for the potential new IT service product as it matures. For example, it will ultimately give rise to a “utility” such as a pricing model: the pricing rates would be in the agreed service level agreements (SLAs) with each customer. However, this kind of pricing would need very sophisticated billing systems. Note that the issue of pricing model development is out of the scope of this particular empirical study. It is suggested that this issue will be explored and discussed more thoroughly along with the phases of ISD.

The IT service delivery time

Again, this issue depends on the implementation of development suggestions so the IT service delivery time is not estimated within this study. It is obvious that there will be changes to delivery times depending on the structure of the forthcoming IT service product. The IT service delivery time can create one of the competitive advantages in the future. It can be diminished by making the processes (i.e., “customer-delivery-in-a-box”) more efficient. One important issue in shortening the delivery time is clarification of the structure of the IT service product by keeping the standard part as big as possible. The customized/tailored part should be kept at minimum especially from the technical implementation perspective.

People in charge

There may be changes to the personal duties and responsibilities of the new versions of the IT service product. At this time, the changes to the team personnel are hard to estimate beforehand.

Further actions plan and development suggestions

Existing customers’ suggestions and ideas were a sort of starting point for the project team (the Consulting team) for innovating as well as suggesting further actions plan and ISD proposals. In this empirical study the focus was soon shifted from the internal description of Juxto @Service toward a thinking of the component view.

5.2 An extension of the component view – an evolution roadmap

IT service features, functionalities and opportunities to provide information were briefly identified. Based on these identifications as well as potential innovations by the Consulting team, the prospect component views (i.e., to-be versions) were designed. In the previous Case Magnus, the minor future development suggestions

were not based on the usage of the component view, but just on the entry of the internal description. Here the evolution roadmap illustrates how the IT service product can be developed further.

The packaging of IT services and the component view can be used as a basis for understanding Juxto @Service and its functionality in the upper level. Figure 5.A. illustrates the suggested complete evolution of Juxto @Service divided into three separate phases. In this time frame, the first phase illustrates the situation as an existing IT service product (in the first quarter of 2000), where it contains the channel management functionalities on behalf of the customer. In addition to the services provided in the first phase, the second phase takes over the contact management of the customer. The second phase is targeted for the near future. The third phase heads towards providing more “CRM”-related services to the customers – this phase can be reached later. All these phases are described more specifically in the following chapters.

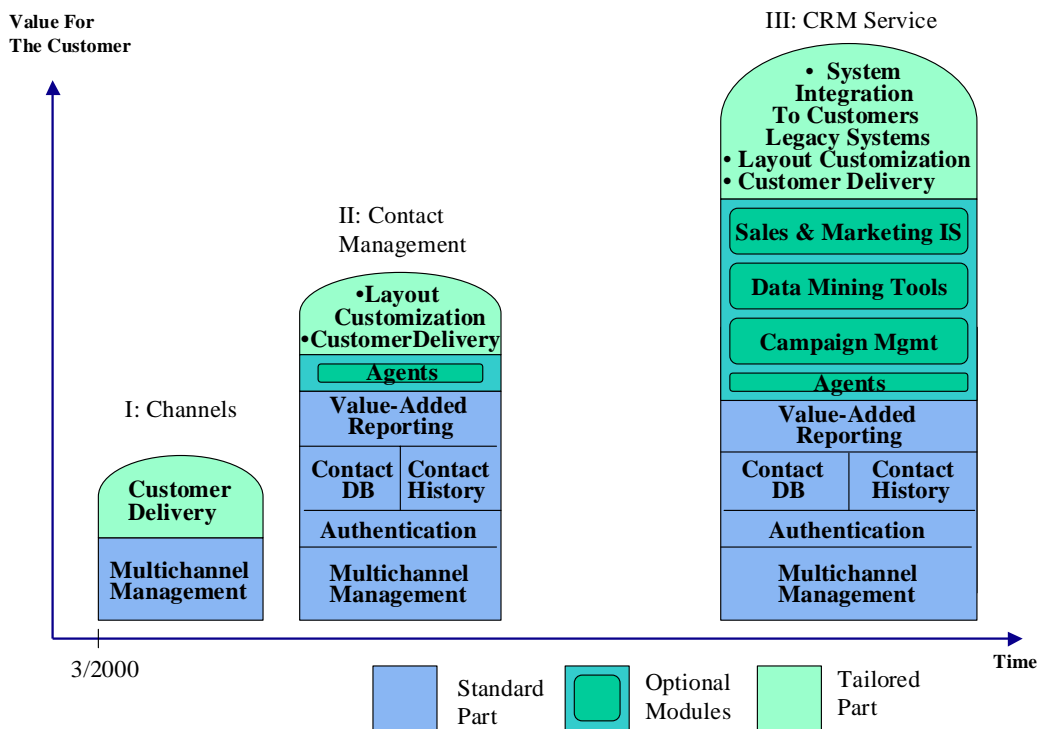


Figure 5.A. The complete evolution roadmap for Juxto @Service.

5.2.1 The standard part

In the first phase (cf. Figure 5.B.), the standard part includes only multichannel management functionality. In the later phases, the standard part should expand to

comprise also authentication and authorization, contact database, and contact history functionalities. Value-added reporting could be one of those new standard features as well.

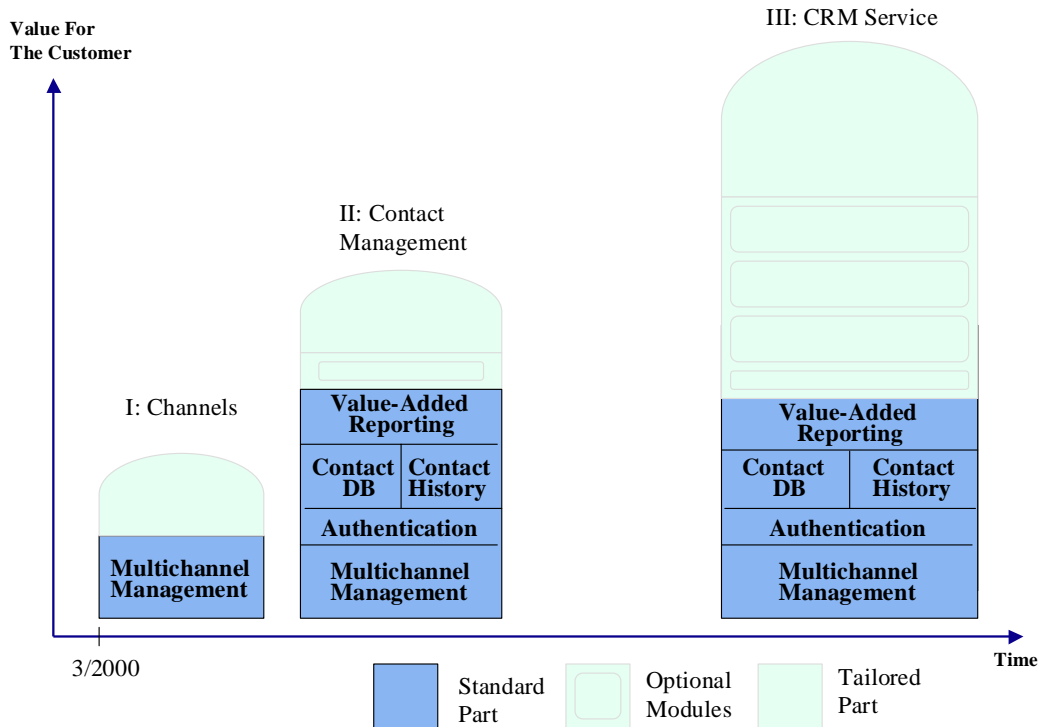


Figure 5.B. The standard part of the evolution roadmap for Juxto @Service.

5.2.2 The modules

From the second stage onwards (cf. Figure 5.C.), Juxto @Service evolution could bring some optional modules for the customer to choose from. For instance, the second stage would bring an option for leasing the agents from the case company. The modules in the third stage make it possible for Juxto @Service to provide a sales and marketing system, data mining facilities, and campaign management systems.

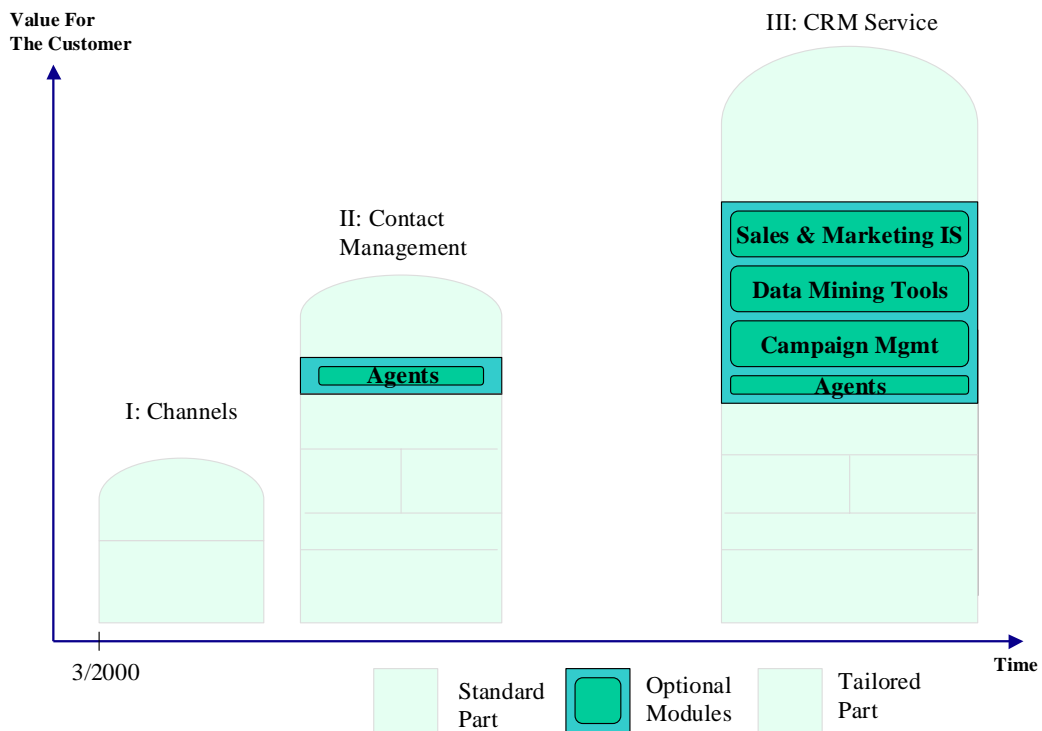


Figure 5.C. The modules of the evolution roadmap for Juxto @Service.

5.2.3 The customized/tailored part

The customer approaches the IT service product from the viewpoint of a customized/tailored part. This part is most visible to the customer. This is the reason why the customized proportion is essential. However, in an IT service approach like ASP the tailored part should be as simple as possible for the IT service provider. As presented in Figure 5.D., the customer delivery is the tailored proportion in the first phase. In the second phase, the layout will also be customized in addition to the delivery process. Lastly in the third phase, the system integration with the customers' legacy systems and the tailored services from the previous phases are part of the IT service product's offering.

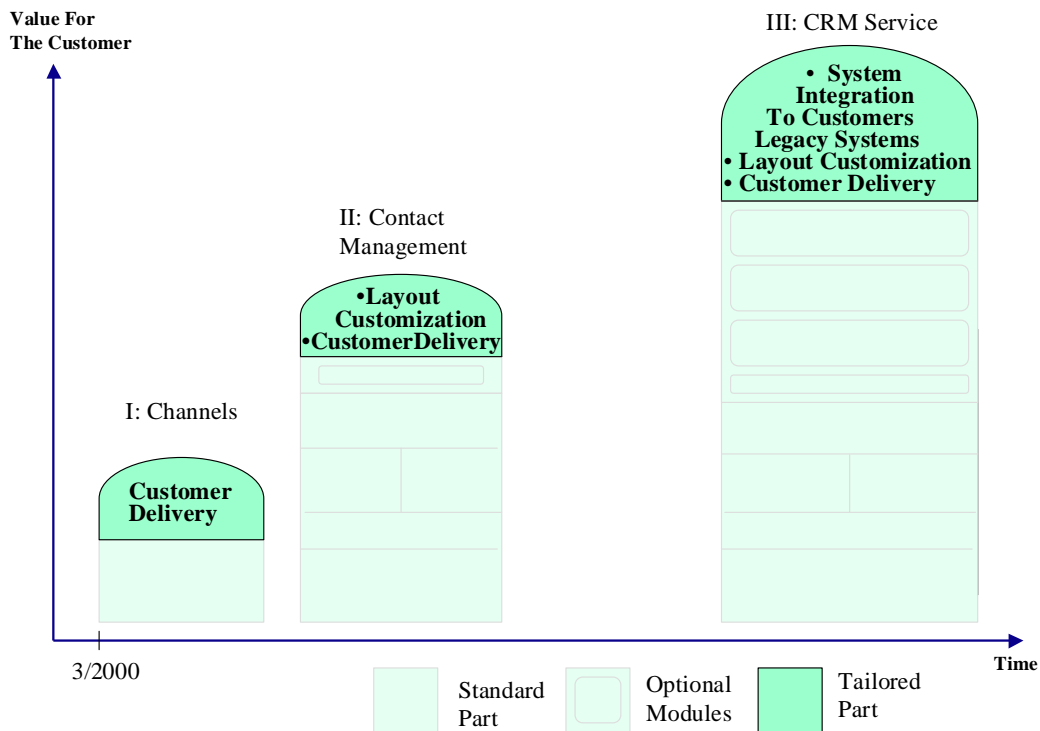


Figure 5.D. The customized/tailored part of the evolution roadmap for Juxto @Service.

In order to deliver all the promised on benefits of the suggested new IT service product, the evolution roadmap and its three phases have to be implemented into IS. According to META Group’s vision on “the full-spectrum CRM application architecture”; it should consist of operational applications (sales, service, marketing) and analytical applications (and integration between them), as well as integration among front, back, and mobile office. The evolution roadmap and the suggested IS architecture are also based on quite similar assumptions. Hence, systems are divided into operative, analytical, and customers’ legacy systems. It should be emphasized here that IS architecture development gains benefits from high availability and scalability (e.g., with clustering solutions), and also usability and flexibility. Figure 5.E. just demonstrates that the future prospect of the evolution roadmap can give the guidance for the design and development of different versions (from version one to version three) of Juxto @Service. In addition to this, it is possible to derive from the evolution roadmap a potential set of IS architecture for the IT service product (see e.g., Zachman, 1987 for the subject of IS architecture and integrative framework). IS architecture can be seen here as a blueprint that depicts how future IS will be designed and built around the same base line. This figure, however, does not represent an extensive and detailed IS architecture for Juxto @Service. The aim is rather to represent the application layer the authors analyzed during the prestudy, and form a base for further

discussion. Based on the IS architectures and their three implementation phases similar to the evolution roadmap, the set of IS projects (a project portfolio) can be created, in which the particular IS developments projects can be activated. Thereby, the results of internal IS development projects will increase the number of value-adding services to the customers and their consumers.

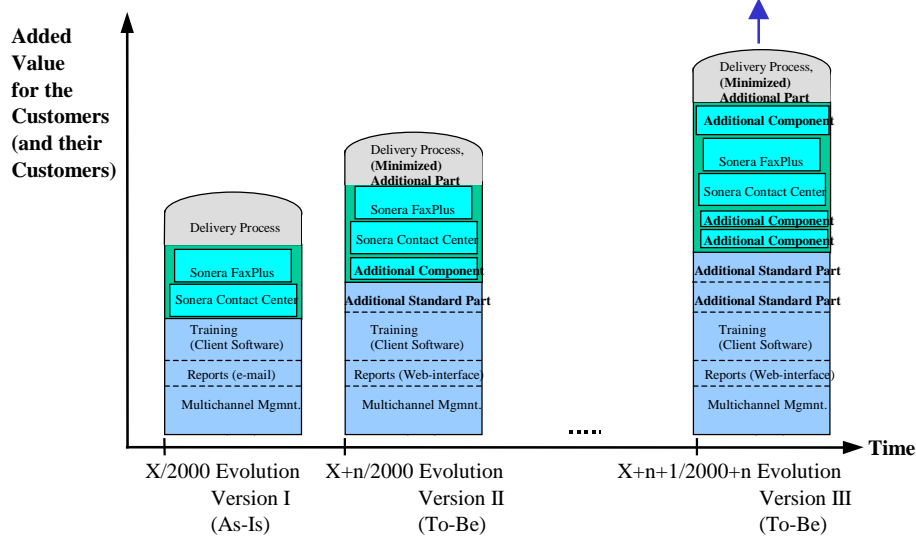
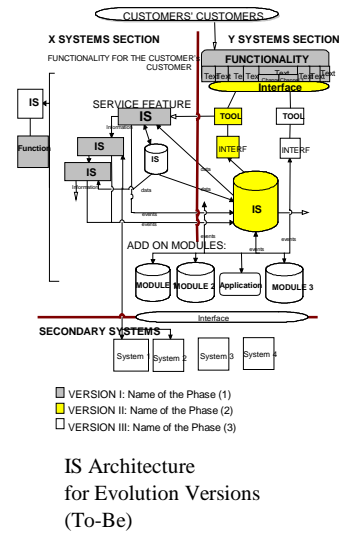


Figure 5.E. Juxto @Service: an example of the evolution roadmap linked with the IS architecture.

Figure 5.E. acts as an example of an extension to the principle of the component view. Note that the additional features in different versions, such as various applications, interconnection structures and interfaces between various software components, and detailed IS architecture overall are excluded here for

confidentiality reasons. One should bear in mind that the purpose of this illustration is only to give an example of the usage of the extended component view. Intentionally, it does not provide any classified information of the future development activities and their security-supportive architectural solutions. Showing the architectural illustration in its whole range may reveal too much about the IT service product and its current and suggested in-built technical solutions.

As presented above, dividing the offered IT service product into the standard part, modules, and customized parts was applied innovatively in this case. This realization launched the following statement by one of the members of the Juxto @Service team: "It gave a guideline to design and improve Juxto @Service". However, there were many suggestions for future development activities of Juxto @Service generated within this case. These suggestions had to be evaluated and iterated before the steps of implementation, so ISD is not over "until the fat lady sings". It was remarkable that the principles of the packaging of IT services were applied successfully to this kind of assignment.

5.3 From the internal description to the IS architecture – a process view

In this second case, the program and the process of packaging IT services are not illustrated. The decision not to depict the process is due to the nature of this case. Juxto @Service is distinct from the previous one (Case Magnus) and the third one (Case IT Consulting Services). The biggest distinction is that the existing IT service is already packaged, and it is also clearly focused on the IT service development in the future. The first and the last, on the contrary, are cases that concern transforming the existing IT services and tasks into the IT service products. The principle of the program and the process is mainly suitable for these kinds of situations, but not a situation like the Case Juxto @Service. Despite this, it is still advantageous to illustrate the realization of the phases from the customer requirements to the IS architecture toward ISD, as shown in Figure 5.F.

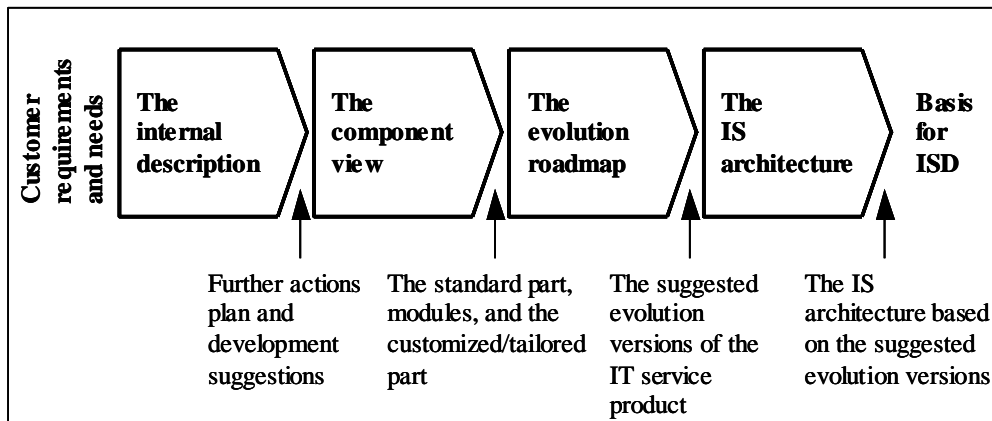


Figure 5.F. A process view: a relationship between the phases taken place in the Case Juxto @Service.

Basically, any successful approach for the packaging of IT services is (and should be) based on the established customer requirements. These requirements have their effects on various requirements such as technical requirements. This case shows the importance of the entry of further plans of action and development suggestions within the internal description. The internal description defines the detailed properties of the IT service product. It also assured me that the IT service was already packaged to some degree. On the other hand, the component view is a semi-structural and iterative blueprint that assists in composing and designing the architecture. The component view is the starting phase for the evolution roadmap (manner of representation), in which various versions of the IT service products are proposed for development. It is beneficial because it is visual, understandable, and marketable for many parties involved like the prospective and current customers. In addition, it is beneficial for the IT service providers and both their management and operative personnel as well. It supports the co-operation and relationship management between various parties. The IS architecture is related to the roadmap's versions and it is meant to be implemented in the forthcoming ISD projects such as accurate application integration projects.

As a closing discussion for the case, some business related issues that have taken place in the market are briefly mentioned. It will presumably give the reader some perspective of what has happened afterwards. Due to the fact that the economic situation and market environment have been and still are in the midst of radical change, some huge mergers took place. The case company Sonera Juxto Oy operated as a separate subsidiary to the end of June 2002. In July 2002, Sonera Juxto Oy was incorporated back into the Sonera Corporation. This parent company had around 7 000 employees and had a turnover of 2 187 MEUR in 2001. The merger between Telia and Sonera became a reality on December 9, 2002, and the company and share changed their name to TeliaSonera. The number of employees was 30 000 on June 30, 2002 and its Pro forma net sales in 2001 amounted to 8.9 MEUR.

6 Discussion and conclusions

6.1 Research summary

In this empirical study the targets were defined to explore the effects of the packaging of IT services on the design activity in ISD and to research the degree of the outcomes in the IT services packaging. More specifically, the sub-purposes of this study were related to the affects of the principles in terms of the organization and its offering. The possible benefits gained with applying the principles were also researched. Furthermore, the differences between the IT service product that is packaged with the principles and that to which none of them are applied and the degree of the packaging of IT services were matters of specific interest. In this Juxto @Service case, its customers were external “real” customers to whom the IT service provider organization sell their IT services. As I wanted to address a real external IT service provider organization, it partly affected the selection of the method. The method AR combined with constructivism acted on various activities, including research problem diagnosis, action intervention, and reflective learning. A given assignment, yet mutually accepted for the case was to suggest improvements for the external IT service and its development. In the role of Head of Consulting Team I introduced the ideas of the packaging of IT services to the team, and together with the team members applied the ideas to this case. As a result of empirical study, there were practical outcomes for practitioners and theoretical implications for IS researchers. The original problematic real-world situation has been solved as shown in Chapters 3 to 5 as well as in this Chapter. The case provided me with the opportunity to theorize research from reflection. It also reinforced the existing theory on the basis of the evaluation.

The first Case Magnus (Appendix E) was an internal case unlike this second case which was an external one. The IT service provider applied the approach of the packaging of IT services internally. Brännback and Nieminen (1998) argued that this process has been treated as an internal process, but it can be extended into the external business process aiming at long term relationships and creating competitive advantage. This research (Appendix F) finds and proves that the packaging of IT services can be applied externally to the target case organization, and even to those IT service products that are already packaged. It seems to be useful to go over the “existing” IT service product as a sort of check list in order to find issues that need to be reconsidered. In terms of further development plans, the research supports the notion that the principles, especially the component view and its extension can be adapted innovatively for ISD. The research shows that the evolution roadmap benefits both the customer and the IT service provider. An interesting, yet tentative finding can be made in the differences between the IT service product that is packaged using the principles and that to which these particular principles are not applied. As a researcher, I was not present at the time when Juxto @Service was originally packaged. If one compares the internal description and its entries with the reality that Juxto @Service already had (before

this empirical study was launched), it covers issues that had been already taken care of with the approach of the Juxto @Service team. In other words, this proves at least at some level that the principle covers most of the typical issues which have to be considered in a successful effort to package IT services. But that is not all because the study offers even more views on the matter. The empirical study also shows that there are some variations of degrees in the packaging of IT services between the previous Case Magnus with its internal IT service provider and the Case Juxto @Service with its external IT service provider. Business is obviously closer in this case and it thus affects the outcome.

6.2 The comparison between the existing and the suggested new IT service product

Being a packaged IT service, a major part of Juxto @Service is formed on the IT artefact but part of it is dependent on people. In other words, it requires special competence from the members of the dedicated team when delivering the IT service product to the customers. Based on feedback received from the existing customer installation sites, needs emerged for developing the existing IT service product further. The suggestions introduced within the empirical study will serve as guidelines for forthcoming ISD efforts. The comparison between the existing IT service product and the suggested new IT service product indicate no remarkable differences with most of the entries of internal description. However, one should bear in mind that the result for the case company with the empirical study was an innovated plan – although it has not been implemented within this project. If suggestions are implemented, there will be several direct effects on the following entries: IT services which compete with it and IT services it makes obsolete, the technical description, IT service description: effects on the processes, versions, the price of the IT service, the IT service delivery time, and people in charge. In more detail, for the entry of competing and substitutive IT services a need will emerge for reconsidering whether the new IT service product will be developed and offered to the customers. In terms of the technical description, there will also be heavy modifications and interpolations. Obviously if the IS development suggestions are to be implemented, they will affect the IT service processes: the to-be processes have to be innovated and engaged. Also a more sophisticated version with configuration management system will be needed in the case of enhanced Juxto @Service. And again, more pricing models will be needed for the potential IT service product as it matures in the long run. There will also be changes to IT service delivery times depending on the structure of the forthcoming IT service product. By the structure I mean the standard part, and especially the various modules and the minimized customized/tailored parts. Lastly, as for the arrangements for people in charge. The changes to the team personnel and their responsibilities and duties for individual jobs are hard to estimate beforehand for the new potential IT service product. Surely, changes are inevitable also in the fields of marketing and contracting.

There were some improved attributes with the case as well. The advantages and improvements for the suggested new IT service product are presented in Table 6.A.

Table 6.A. Advantages of the suggested IT service product compared with the existing IT service product.

Entry of the internal description	Advantage – specific improvements based on the customer requirements and needs
Name of the IT Service	<p>It is possible that this assignment had an indirect – yet small influence on the reason for changing the name quite soon afterwards</p> <ul style="list-style-type: none"> - The original name Sonera @Service was quite familiar but it was replaced by a new one - The main reason for the replacement was that it suited the IT service portfolio of the case company better: hence, the customer associates offerings better with the company - In addition, the case company had just been launched and it had to have IT service products of its own
Further Actions Plan and Development Suggestions	<p>This entry of the internal description shifted the focus toward a thinking of the component view</p> <ul style="list-style-type: none"> - Existing customers' needs were a sort of starting point for innovating and suggesting the build plans and ISD proposals - New advantages made possible such as improved capabilities for reporting and contact monitoring, supporting integration to customer's legacy systems and thereby, toward a more consistent consumer service process

Not that there are only advantages with the suggested new IT service product but also disadvantages can be found. They are presented in Table 6.B.

Table 6.B. Disadvantages of the suggested IT service product compared with the existing IT service product.

Disadvantage	Definition of disadvantage
Several Development Projects and Testing Phases Have to Be Conducted (each requires employment of professionals and resources)	It depends on whether this is considered in any way advantageous or disadvantageous: it reveals that in the near future lots of things have to be done. Clearly, it depicts needs for further development of Juxto @Service in order to stay competitive. - There will be substantial costs for implementing all the proposals into the evolution roadmap - Implementations have to be tested for readiness - As already discussed, there seems to be update and development efforts in the following issues: competing and substitutive IT services, the technical description, IT service description: effects on the processes, versions, the price of the IT service, the IT service delivery time, and people in charge
The Suggested IS Architecture May Be too Wide-ranging to Be Realized	It is possible that the ideas of the evolution roadmap are too wide-ranging to be carried out for this particular IT service product. So there could be considerations that proposals here are the beginning of some other kind of new IT service product in the future.

6.3 Research findings and contribution

As discussed, Sipilä's (1996) theories on the packaging of professional services are applied to the case, the findings are documented and interpreted for the specific field of IT services. The needs for the new IT service product have been met in the proposals and improvements and advantages can be found compared with the existing IT service product.

The summarized contributions of this empirical study can be listed as follows:

- Applying those ideas of the packaging of IT services that were developed and tested beforehand in the Case Magnus into design activity within IS development (an application and testing of the specific theory and its potentiality);
- Describing the effects and benefits from the case by applying the principles of the packaging of IT services (mainly associated with the component view and its usage: it is discerned that these constructions of the packaging of IT services are extended with this particular case); and
- Defining the differences in the outcomes of IT service packaging.

The packaging of IT services affected the IT service provider organization and its IT service suitability in many ways. The internal description and its technical description defines the detailed properties of the IT service product for the IT artefact-oriented services. There again, for the component view, some important extensions to the field of IT services are found when compared to the original

theory of Sipilä (1996). The component view offers a possibility for promoting innovative future development plans as rough build plans, such as evolution roadmaps and IS architectural considerations related to the different versions of the IT service product (cf. Figure 5.F. illustrating the process view on the essential subject as a whole). The evolution roadmap answers two relevant questions for the customers and the organization: what is the current offering of the IT service product and what kind of value adding functionalities may come next. It is a semi-structural and iterative blueprint that assists with composing and designing the architecture. Such future roadmap, based on the component views, can be shown in a concrete format to both prospective and current customers. It is beneficial because it is visual, understandable, and marketable. Particularly from a modularity standpoint, it can be estimated that squaring the amount of customers affects over-relatively the different combinations of the IT service product. That is the reason why the version and configuration management is important, since there can be a very different or even unique configuration for each customer. The ideal of modularity is that the construction and delivery process of the IT service product becomes more an assembly process, built on different and easy-duplicable components e.g., the packaged human IT service processes or packaged software. It is presumably a useful approach to combine the IT service product with the modules and customized parts for the individual customer organizations. This is also still a valid approach if the initial statement for the empirical study – that is, providing the same IT services to every customer, is in force. For each customer it is possible to implement a similar IT service package but modularity and customization also makes some variations possible. However, these IT service product variations are yet strictly delimited. They cannot be total “amoebas” fulfilling the needs of every situation – even if they have customized parts. Furthermore, the approach structures the IT service and task offering and its principles have effects on all parties; the IT service provider organization as the IT service product developer, the customer as a user, and the other parties involved. As an indication of the success of the empirical study and in terms of practitioner implications, the Juxto @Service team find it useful to utilize the proposals as a part of their own “conceptualization” efforts. So there were changes in terms of prevailing work practices among the members of the Juxto @Service team.

Finally, one of the (minor) contributions of the empirical study dealt with the differences in the outcomes of the packaging of IT services. Juxto @Service was already – so to speak, a “ready-to-run” packaged IT service – despite the fact that I did not participate in the process of IT service packaging. The Juxto @Service team had an active role in this similar approach earlier. It is hard to say in what kind of form the existing IT service product would exactly be, if it has been packaged with the principles of my research from the very beginning. Before the empirical study, the IT service product has been marketed with various kinds of support material (such as CD-ROMs), several sales and contractual documents and templates were available, its market potential has been identified earlier, it had some paying customers already, and its IT processes were defined, just to mention a few. However, some differences can be found between the IT service product packaged according these principles when compared to the IT service product that

had not these same principles applied to it. The differences discovered were chiefly related to the further actions plan and development suggestions as well as innovative application of the component view. The bottom line is that the case proves (at least tentatively) that the principle of the internal description and its various entries such as the technical description covering most of the typical issues have to be noticed in the successful approach to the packaging of IT services. It is about increasing the business-relevancy in the IT artefact oriented service.

Furthermore, based on the previous Case Magnus (Appendix E), there was already an interpretation suggested that the degree of the packaging of IT services for internal customer purposes was not so high when compared to IT services packaged for the external customer. Interestingly, some general differences can be found as the packaged IT services are compared between the Case Magnus and the Case Juxto @Service. An internal IT organization does not deliver such highly branded IT service products to its customers when compared to the organization that delivers IT service products to the real customers. Branding plays a much bigger role in the Case Juxto @Service. For instance, the delivery process can be seen more as a packaged IT service process. The designed roles of the personnel and their responsibilities, different phases, and requirements for the IT environment are applied more strictly by the organization of Juxto @Service as the technically advanced service product is delivered to the customer. The internal IT organization in the Case Magnus was not so interested in the interfaces between the billing systems and the IT service product, because the role of billing is different in a non-profit organization. In the Case Juxto @Service partner and vendor management, configuration management, legal issues such as legal evaluation of contracts and information ownership, and licensing for the bought-in technologies were also emphasized. These kinds of issues were not discussed almost at all in the previous Case Magnus, although the last two of them were present and taken care of as well. In the competitive market, the degree of the packaging of IT services – especially from the marketing and sales perspectives, seems to be higher when compared to the case in which the IT service product is targeted merely to the internal market without any real competition.

6.4 Limitations of the research

Several limitations need to be considered in this empirical study. The major empirical limitation is its sample of one case company and applying the principles only in one of its existing IT service product. There is again the challenge of generalization for the findings of empirical study. As a minor limitation it can be argued that excluding the IS architectural illustration here leads to a situation where the link between the evolution roadmap and architectural consideration is missing. Probably for some of the readers the situation seems to be like that. However, due to the classified case company information the illustration is not shown here. By no means am I suggesting a new highly formal method for IS architectural modeling but more like a new adaptive approach, which could be developed further if it is also found to be useful in cases other than just this particular one. On the other

hand, the evolution roadmap already showed most of the future development suggestions for Juxto @Service – whether they are implemented or not. That decision really did not belong to me as Head of Consulting team but the upper management level of the case company and the person in charge of Juxto @Service. It is highly likely that incremental or even radical changes for the IT service product in question will occur in future. Yet, paradoxically, one should bear in mind that Juxto @Service might be someday replaced by a new one. Volatile market situations, various environmental reasons, the contexts where the IT service product is used, and the strategy decisions of the company – just to name a few, have their effect on the IT service portfolio of the company. Lastly, only minor adjustments to the original paper written by the Consulting team have been made such as proofreading and terminology clarification.

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Acronyms and abbreviations

ad hoc	For this special purpose
as-is	The existing (initial) state of service processes
AR	Action Research
ASP	Application Service Provision, Application Service Provisioning, and often referred as Application Service Provider
CBD	Component-Based Development
CRM	Customer Relationship Marketing, often referred as Customer Relationship Management as within this case
DB	Database
DOS	Disc Operating System
IP	Internet Protocol
IS	Information Systems
ISD	Information Systems Development
IT	Information Technology
LAN	Local Area Network
OO	Object-Oriented
PC	Personal Computer
SLA	Service Level Agreement
SMEs	Small and Medium-sized Enterprises
TCP/IP	Transmission Control Protocol/Internet Protocol
to-be	The defined future (goal) state of service processes, which is based either on incremental improvement or radical transformation.

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Personal communications – case discussions

Case entry and exit: May, 2000 - June, 2000

Discussions held in May, 2000 (the first assignment meeting May 11th, 2000) - June, 2000 (end of the AR project: the project assignment presentation June 29th, 2000)

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