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Launch management of a global IT-system

-A case study at Volvo Cars Customer Service

Key words: launch, launch management, roadmap, IT-system, launch control plan

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Abstract

This thesis focuses on the launch of a global IT-system within the automotive industry. When searching for and studying the literature in the area of launch and launch management, we found that this area was clearly under-researched. Also, the studies done in the launch area are mainly quantitative by nature, which called for a qualitative approach that could lead to a conceptual framework for *how* such a launch should be done.

As many authors conclude, the launch process is the single most costly step in new product development, which implies that more knowledge about this area would be most valuable. We have been examining the launch process regarding an IT-system at Volvo Cars Customer Service called VADIS2004 from a qualitative point of view. The roadmap that we produced focus on critical success factors and the management of the whole launch process.

The most important issues in the management of a launch that we found during our empirical and theoretical studies, was the creation of a Launch Management roadmap. Creating and using such a roadmap would facilitate the work of launch management and could be used in similar industrial settings. Also, we found that the steps actually included together with the internal structure of these steps in the roadmap to be crucial. This in order for the launch manager to get a good and necessary overview of how the work should be carried out. Implementing a launch control plan would help managing the risks that are found in the launch process. Last but not least, important is also the organization's built-in awareness of managing previous launch experience in a planned way, being that of the learn-loop. This to seek the benefits such as decrease in time, cost savings and lowering the chance of risks to occur.

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Definitions and abbreviations

The subject of this thesis ranges over several disciplinary areas such as computer science, marketing, product management and systems information management and it has the common thread of IT-management. Therefore, we want to clarify some of the terms and definitions we write about in this thesis. The key term of our study is “launch”, and by this we mean not only the release of the product into the market but merely the process behind the launch. In the language of computer science, the late phase of the launch would be called implementation. The terms “product”, “service”, and “IT-system” are used interchangeably in our thesis as these definitions are used in the various literature that we have been studying.

Sometimes we use the terms “producer” and “manufacturer” interchangeably, and these terms can be seen as one and the same. The terms “workshops” and “repair shops” are also used interchangeably. “Dealers” are Volvo sales sites and some times repair shops are incorporated in the business of Volvo dealers.

VCC – Volvo Cars Corporation

VCCS – Volvo Cars Customer Service

VADIS – Volvo Aftersales and Diagnostics Information System

VADIS-NG – Volvo Aftersales and Diagnostics Information System Next Generation (the name of the project developing VADIS2004)

SR – Sales Region

SC – Sales Company

TIE –Technical Information Exchange

ABE – Automotive Block Exemption

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1. Introduction

In the context of IT-management, we wanted to study a real-life case at a company that where in the midst of working with the process of product development. After serious searching in both the literature and among companies, we decided to examine the work with launching an IT-system within Volvo Car Customer Service (VCCS). Soon enough we discovered that the area was clearly under-researched in the literature, and this led us to working close with the project members at VCCS, trying both to understand and clarify what was so important in the work with launching a global IT-system. This thesis focus on both the structural factors related to the work of launch, and process behind a successful launch.

1.1 Background

Our study focuses on the launch of a global IT-system within the automotive industry. The evolution of the car industry is an everyday ongoing process. The new cars that are being developed are more and more advanced in terms of security, engine capacity, and comfort etc. One characteristic is the increasing part of, and importance of software included in today's cars. The software makes possible a long range of improvements both for car owners and the automotive industry itself. The inclusion of software elements in the classical industry product forces the car producer to also act as a kind of software supplier. Spare parts and other supportive repair functions are now also including non-physical items, thus the limit between physical and virtual spare parts is becoming more and more diffuse.

It is a well-known fact that cars are being sold all over the world, and that the selling companies and repair workshops not always are owned by the producing firm. This leads to a semi-independent relationship between the car manufacturer and the sales companies / car repair shops. To increase independence and competition among these firms, countries and trade unions (i.e. European Union) are now deregulating the aftersales automotive market. The deregulation makes it possible for a wider range of independent car repair shops to maintain and repair cars, and the manufacturer will not be able to dictate who may or may not repair their cars or have access to information about the car. Also, the new regulations concerning spare parts sales and distribution are by time providing opportunities for a more intense competition between spare parts manufacturers and dealers. This new legislation at interstate level pushes the automotive industry to make product development for the aftersales market. As car manufacturers of today get their largest profits from the aftersales market and selling spare parts, this means they must be careful to maintain and enhance the relationships with their dealers and repair shops around the world. The deregulation leads to an opening of the market which in turn leads to an increased need for identifying independent sale companies and auto repair shops that constitute a potential future customer group. For the automotive industry this means that it will be harder to identify and communicate to all possible target groups, and thus to sell and distribute products to these potential buyers of aftersales products.

As to the cars being produced, both the number and importance of hi-technical components in modern cars are increasing. For each year a new car model is being produced, the features of both the engine and the interior are increasingly being controlled and steered by electronic components integrated in the car. This means that the traditional way of repairing and fault

tracing a car is being altered, and thus the way this work is done and the tools being used are being altered as well.

This leads us closer to the origin of this study, namely that a step in this evolution increases the need for sales companies and repair shops to upgrade their equipment. This in order to be able to repair and work with newly produced cars where a monkey wrench is surely not enough. The electronic components and thus the software that is also included in the car in an increasing manner, calls for a sophisticated way of working with cars in the aftersales market.

An example of this kind of equipment is the VADIS (Volvo Aftersales and Diagnostics Information System) used by repair shops to trace and detect errors in the car, and to upgrade necessary software. For several reasons, which will be described later in this study, a serious upgrade of this system is now necessary and thus Volvo Car Customer Service is now developing VADIS2004. VADIS2004 is a new step based on the original VADIS being introduced in 1995. After some troubles with the introduction of VADIS in 1995, Volvo's ambitions with the launch and execution of VADIS2004 are set very high. We will in this thesis study the launch process regarding V2004, as it clearly constitutes an *IT-managerial issue* tightly connected to the courses we have undertaken at the Department of Informatics.

According to several authors (e.g. Hultink et al. 1998), the single most costly step in new product development is the launch process. The same authors conclude that in spite of this empirical evidence, the launch process is clearly under-researched. This might be due to the complexity and unpredictability of the launch process, where the roles and issues highly depend on the industrial context. The studies done in the launch area are mainly quantitative by nature, trying to generalize strategies and tactics in the launch process from studies made on a large amount of companies. These studies mainly illuminates *what* should be done, but not specifically *how* the work with launching a product is being done. This calls for a qualitative approach that can lead to a conceptual framework for *how* such a launch should be done and what roles are connected to it. The launch process that we have been studying concerns one specific industry, namely the automotive industry. Our result and findings should thus lead to.

1.2 Purpose and question at issue

The purpose is to create a better understanding of the critical issues when launching an IS-based product, and the launch process itself from a qualitative point of view. To do this, we want to develop a roadmap based on theories within marketing, project management, process and IT-system management, *together* with the specific conditions found at VCCS. The roadmap that we aim to produce focus on critical success factors and the management of the whole launch process, thus not on the actual implementation of the system. We also want to show the necessity of a qualitative approach in research when it comes to understanding the launch process as a whole. This leads to the following definition of the problem area:

What are the critical parameters during a launch process and how should these be managed?

1.3 Delimitation

The focus area in this thesis was the launch-process of a global IT-system. Launch of a product is an extensive process that intertwines with and is depending on the other sub-projects during the product-development stage. Although, a limitation was necessary and therefore we chose to focus on mapping critical activities during the launch phase of a product, and the roles connected to these important issues. Our study, both empirically and theoretically, was limited by factors that must be taken under consideration. The time aspect was one, namely that we conducted this thesis during 20 weeks. For us this meant no time for doing thorough research about similar rollouts in the globalized business of services and IT-systems. The focus was thus on clarifying the structure of the work surrounding and interconnecting with the launch-process, and also the roles that had to be appointed, actions to deliver and the risks concerning the launch activities. Important was also to declare that we were doing this study in the beginning of the VADIS-NG project, and thus the actual rollout was still to come.

2. Method

Our method chapter clarifies what scientific standpoints have been taken and what methods are used in the study. We are going to give a description about different perspectives and methods that can be used in different types of studies and our motivation for using them. The method chapter is a guideline of how our study was done.

2.1 Scientific standpoint

Our scientific standpoint is that researcher's thoughts and experience will affect the choice of research method. This means that the research is depending on the researcher's interest, experience, worldview and knowledge about scientific methods (Johansson-Lindfors 1993).

2.2 A phenomenological approach

According to Easterby-Smith (1993) there are three main reasons why an understanding of philosophical issues could be very helpful. Firstly, it can help to clarify research design, which means the overall configuration of the research. Secondly, knowledge of philosophy can help the researcher to recognize which design will work in specific situations. Thirdly, knowledge of philosophy can help the researcher to identify and produce designs that can be outside of the researcher's experience.

Easterby-Smith (1993) points out two different philosophical paradigms: positivism and phenomenology. The main thought about positivism is that the social world exists externally, and that its surroundings should be measured through objective methods (Backman 1998; Easterby-Smith 1993). Positivism eliminates research that contains of emotions, experiences and culture phenomenon that cannot be measured with objective methods (Wallén, 1993). According to Dahlbom and Mathiassen (1995) the positivistic philosophy usually selects a quantitative method, since they experience the world as stable and measurable. Under the last decade there has been a trend away from positivism towards phenomenology (Easterby-Smith, 1993).

The phenomenology experience the world as socially constructed rather than objectively determined. The task of the researcher should not be to collect data and measure how frequently a certain pattern arises. The researcher should instead appreciate the diverse construction that people lay upon there experience (Easterby-Smith, 1993). Wallén (1993) mean that phenomenology is empirical studies about peoples experience and conceptions. The reality for the individual is the way he or she experiences the world and after that the person acts. The phenomenological philosophy as Dahlbom and Mathiassen (1995) refers as hermeneutic selects qualitative research method or a combination of quantitative and qualitative method.

We have adopted the phenomenological philosophy in our study, which leads us to using qualitative methods in our research. Earlier studies in the launch context have used quantitative methods, which lead to the interest and requirement for a qualitative study. This approach is simply best suited for the case we have been studying, as there has been no

definite way of conducting the work, nor any clear figures to measure which is necessary for having a positivistic approach.

2.3 Combining induction and deduction

The choice of research approach is highly depending on the degree of understanding about the relation between empirical and theoretical aspects (Wallén, 1993). It is common to talk about two methodological approaches, the inductive and the deductive method. When using induction the theory and hypothesis are formulated based on empirical material. The inductive method is common when the case is unexplored and little is known about the issues in the study (Thurén, 1991).

Opposite to induction the deductive method uses theoretical studies to build hypothesis that will be tested empirical (Wallén, 1993). This means that the researcher draws empirical conclusions based on general theoretical principles (Thurén, 1991).

We adopted a combination of a deductive and inductive approach. Johansson and Lindfors (1993) mean that a hermeneutic (phenomenological) study performed with a combination between the two approaches usually starts in the theory and then progress further to empirical studies and then finally goes back to theory. This combination of working method fit our case in this thesis.

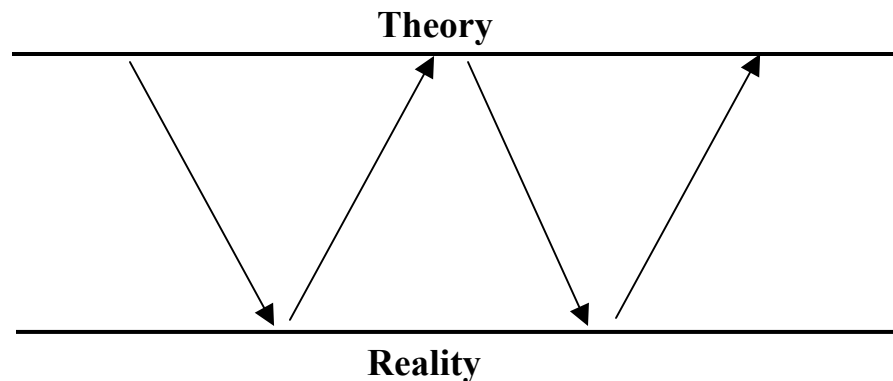


Figure 2.1 The research process as a combination of induction and deduction

2.4 Methods of choice – qualitative and quantitative

*“Because you can name something, doesn’t mean you understand it.
Because you understand it doesn’t mean it can be named.”*

(Halcolm’s Evaluation Proverbs, in Patton, 1980)

Qualitative method

Our theoretical standpoint in using a phenomenological approach together with a combination of an inductive and deductive research process, leads us to the use of a qualitative method. The purpose of a qualitative method is to get a picture of how other people view the world, to understand their point of view in a certain matter. The data collected consists of detailed descriptions of situations, events, people, interactions and observed behaviors (Halcolm’s Evaluation Proverbs in Patton 1980). To be able to fully understand what is happening the observer must get close enough to the people and situation being observed, capture what is said and done, and describe these activities. This is done by analyzing documents and events, and by performing interviews (Backman, 1998). Direct quotations are also often used. Further, Patton (1980) suggests that researchers using qualitative methods strive to understand phenomena and situations as a whole. In our study this holistic approach has been a lead issue when trying to understand the case studied, where there result cannot be presented in figures but in textual analysis and visual models. To sum up, the following main points can be said to define the qualitative method:

- Emphasis on interpretation and understanding
- Explorative orientation
- Process oriented
- Holistic approach

Quantitative method

The strength with a quantitative method is that, as opposed to a qualitative method, the data collected are more easily measured and comparable. Also, different observations can be described automatically, which facilitates the analysis of the data. These data can be concluded with numeric values, and are often collected through multiple-choice questionnaires, experiments etc. (Patton, 1980). The use of quantitative data is common within the positivistic method of doing research, as the observer must be objective and not influence the observed person, event and such (Backman, 1998). Quantitative methods measure how much, how many, how often and so on. The main points here are thus:

- Emphasis on test and verification
- Logical approach
- Analytical
- Result oriented

2.5 Participative observation and interviews

Participant observation

The method of participant observation is grounded in ethnographic research studies, where researchers traditionally would live among tribe members in order to understand the tribe's culture and customs (Easterby-Smith, Thorpe, Lowe, 1993). A more general description is that of Patton (1980) who says that to understand fully the complexities of diverse situations, direct participation in and observation of the situation may be the best evaluation method. On the basis of that, the challenge in our work is thus in taking part as closely as possible in the case and yet be able to observe in a critical way what is happening and why it is happening. Because of the complexity of the case at hand, we found our participant observation being a stage-like one, as described by Lincoln and Guba (1985) in Ely (1993). They mean that a participative observer goes through different stages of observing; from an introductory overview with a wide focus to a stage when the focus is on very specific aspects of the situation. These aspects have been detected through the constant logging and analyzing of current events and facts. Easterby-Smith, Thorpe, Lowe (1993) defines four different roles one can take by being a participant observer; researcher as employee, research as the explicit role, interrupted involvement and, observation alone. The role that was best suited for our work was that of research as the explicit role. By working alongside with people involved in the case we had the goal of being a sort of an insider in the case studied. In our work we were a part of a sub-project team, participating in meetings and contributing to the project we were studying. Alongside, we conducted informal talks to get a picture of what was being done and who was responsible for what and so on. We were truly a part of the project and our work was highly appreciated as leading towards a better end-result of the project.

Interviews

Feelings, thoughts and intentions cannot be observed. To clarify this inner perspective of a person one must do interviews. Also, situations that occurred previous in time can be explained and accounted for by interviewing people that were involved. The purpose (Patton, 1980) is thus to enter into the other person's perspective. This is supported by Easterby-Smith, Thorpe, Lowe, (1993) who say that qualitative interviews are appropriate when one wants to develop an understanding of the respondent's worldview. This can be said to be a thorough ethnographic interview (Ely, 1993). Three variations in qualitative interviewing are (1) the informal conversational interview; (2) the general interview guide approach and (3) the standardized open-ended interview (Patton, 1980). In our case study we used a combination of these three alternatives where we outlined a set of issues that we found relevant. This in order to probe certain issues when necessary, without having to follow a certain scheme of exact questions. We found this combination of informal talks and tape-recorded interviews to be most relevant and successful, as it gave us data from different persons and point of views, given in different contexts.

Secondary data

As opposed to primary data, which is gathered according to the current situation, secondary data is information that has been gathered by someone else for another purpose, but that can be used again. The secondary data in this thesis will be such as organization-charts, project-definition, timetables etc. Secondary data can be presented in both digital form such as intranet and databases, as well as in papers

and documents (Easterby-Smith, Lowe, Thorpe, 1993). We will thus use a combination of secondary and primary data in order to obtain the best result and analysis possible.

Validation and reliability

Validity and reliability are two central components when evaluating works of research. According to Easterby-Smith, Lowe, Thorpe (1993) is important to review the chosen methods in order to determine how reliable and valid the information that is brought forward is. This should be done to able to verify and secure the quality of the work done.

Validity

Traditionally it is said that validity verifies whether or not the research measures what it is supposed to measure. According to Easterby-Smith, Lowe, Thorpe (1993) this positivist viewpoint must be extended within phenomenological research; to measure whether or not one has gained full access to knowledge and meanings of the informants in the case being studied. The dependent factors here are which and how many persons are being interviewed and what data is being investigated, in what context and so on. One important aspect is to what degree the interviewees can be said to be representatives for the organization or not.

Reliability

When it comes to reliability, the challenge lies in how trustworthy the result is. According to Bell (2000) a reliable study should give the same results regardless of who performs the study. Can the same result be achieved by someone else on a different occasion, presupposed that he/she uses the same methods? This is a tricky question, above all concerning qualitative research (Easterby-Smith, Thorpe, Lowe, 1993) as the one we are performing in this thesis. Reliability aims to minimize possible errors and biases in the study (Bell, 2000). That is, to minimize the haphazard events that can occur. Clearly, in experimental laboratory research reliability is easier to measure than in research that aims to explain behaviors, intentions and the like.

Reflections on chosen method

As the interviews remained quite conversational, it allowed us to create an honest atmosphere and in the same way we were able to compare the respondents' reactions and answers to different issues. This presupposed that both of us participated in the interviews, as the course of the interviews otherwise might depend too much on the interviewer's approach and experience in the subject (Patton, 1980).

There are also social and political factors, which can limit participation by the observer. According to Patton (1980) there is a risk that the observer never gets fully accepted by the people engaged in the case that is being studied. Evaluators must therefore be flexible and active when it comes to participative observation, which we had in mind when we were working with our case. Due to the time limit of our case our work came close to being a sort of interruptive involvement

approach, where the researcher spends a period of time in a particular setting, combined with interviews and observations (Easterby-Smith, Thorpe, Lowe, 1993).

2.6 Course of action

In our work we will use the following approach.

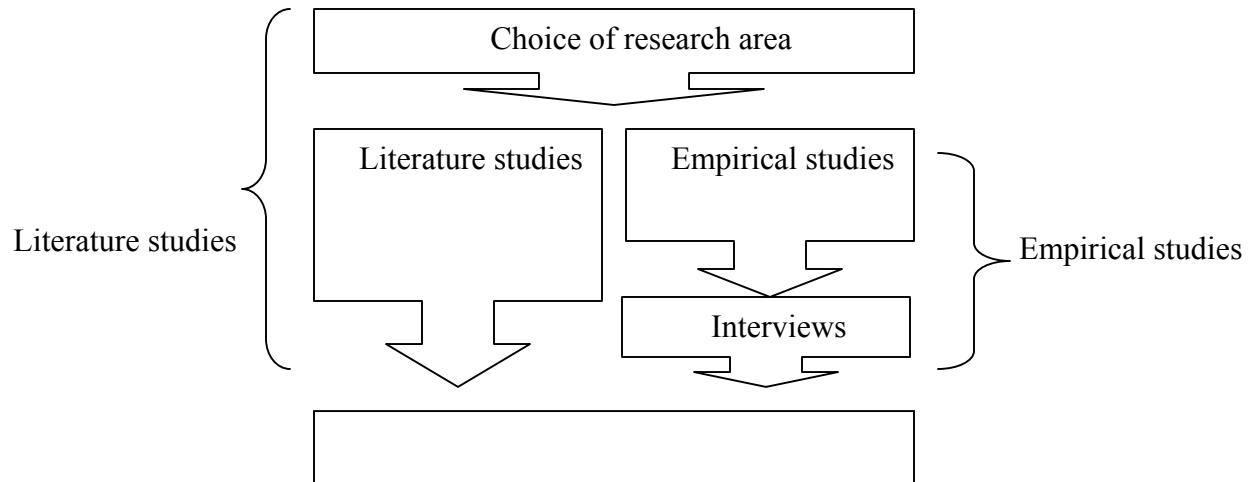


Figure 2.2 Course of action

Choice of research area

The choice of this subject was no accident. We are both interested in examining social and business perspectives of a product or phenomena in a business environment rather than the pure technical aspects, though these are non the less important. While reading and searching for literature in the area of interest, we conducted talks with both Volvo and our tutor Magnus Bergquist to be able to delimit and decide the topic of this thesis.

Literature studies

We performed an intense search for books treating the subject of launch of IT-systems, soon finding that the literature was very scarce. More relevant was the literature in terms of articles and research-studies that we found through article databases on the Internet. Also there we found that most of the work being done on the launch subject was focused on physical consumer products or large complex industrial products being used in heavy tool industry. The literature of launch process was almost non-existing. Therefore we had to combine articles and books treating the subjects of marketing, project management and organizational process management. As the specific context that our case was being set in was not to be found cut and clear in the literature, we had to study this set of subjects in order to get a clear picture of the launch process.

Interviews

We conducted a few formal interviews using a tape-recorder. But we found out that the most fruitful way of getting close to the people working in the project was to just be a part of the work being done, and this also led us closer to our purpose of the thesis as being someone who actually participated in the project. This is hard to do by sticking up a microphone in front of someone's face and start asking questions. The issues that we brought up doing our interviews were based on observations we did during the first weeks at VCCS.

Empirical studies

The first 4 weeks we started out spending five days a week, 8 hours a day at Volvo having our own desks in a shared office space. The purpose was to get to know the people working out there and it enabled us to conduct talks and chat with the project members. Our roles as participant observers slowly declined as we after a while started to summarize and write down observations, secondary data and interviews that we had conducted with project members. This participant role was expressed by the actual co-work being done by us, helping the subproject Launch with different tasks, and thus resulting in our findings in the chapter Result in this thesis.

Discussion / Conclusion

In our discussion we compared the theoretical framework with the empirical findings from VCCS. The goal with this comparison was to see if there was any clear patterns or contradictions that could support our thesis. This comparison resulted in a Launch Management roadmap that had been impossible to create without both theoretical and empirical knowledge. In the conclusion chapter we present the most important launch issues that were found in our thesis.

Criticism of chosen method

The criticism of our method is based on the fact that we participated in the launch team almost as we were ordinary employees. This resulted in that our participation affected the launch work at VCCS and on the same time our empirical findings. In spite of this we got an unusual opportunity to interact with the project members at VCCS and without this close interaction we believe that this research had been impossible to perform.

3. Theory

This theoretical framework is based on detailed literature studies. The purpose of the theoretical framework is to state what the studied phenomenon is, how the theories should be understood, how different issues are structured and how they should be explained (Wallén, 1993). Our theoretical framework consists of theoretical conceptions, structured patterns and models. In this part of the thesis we want to give a picture of and examine the theories and models that we found as being most relevant to our subject. First, we examine the concept of a product, and also how a product can be viewed in terms of newness and characteristics. As our case concerns an IT-system, which also can be said to be a sort of service, we found it relevant to make some clarifications about the service concept. This part, the work of launch, is the last part of the theory section. Here, we can see the most obvious linkages to the case studied, and with the knowledge of the early parts in this chapter in mind, this leads to an understanding and holistic view of what the case is all about; the work of launching an IT-system.

3.1 Definitions of product, service and launch

As we in our case-study are examining the launch process of an *industrial product*, we might as well define this in the words of Gisser (1972): “a material, item, or service that is purchased in the course of fulfilling a business goal (usually making money), by the purchaser or his employer”. Further, we can conclude that this kind of product differs from *consumer products*, which are bought and used for personal purposes such as toothpaste for brushing the teeth. Whether the buyer of a product, or a service for that matter, is buying the product for personal or business use is really more interesting to look at than to objectify the product. By this, we are forced to look at products in terms of markets (Gisser, 1972). Kotler et al. (1991), also conclude that services can be divided in such as services directed towards private customers and their requirements, and services that aims to satisfy business needs. An interesting point is that of Edvardsson et al. (1988) that most of the research that has been undertaken to understand the behavior of customers has been focusing on physical products and not services.

When it comes to the definition of launch, we found the following explanation in two separate business dictionaries:

”The first release of a new product or a brand into the market, usually accompanied by specially designed advertising and public relations campaigns ” (Dictionary of Business Management, Witzel, 1999)

”The show or make a new product available for sale for the first time” (Longman Business English Dictionary, 2000)

3.2 Total product

Launches of a new product do not only consist of the introduction of the product (Gustafsson, 1998). The customer's experience about the total product often consists of a complex combination of aspects. It is common that the product offer consists of different types of services. The service can be comprised of education, installation, finance, accessories, guarantees, upgrades, manuals and advice of the product (figure 3.1).

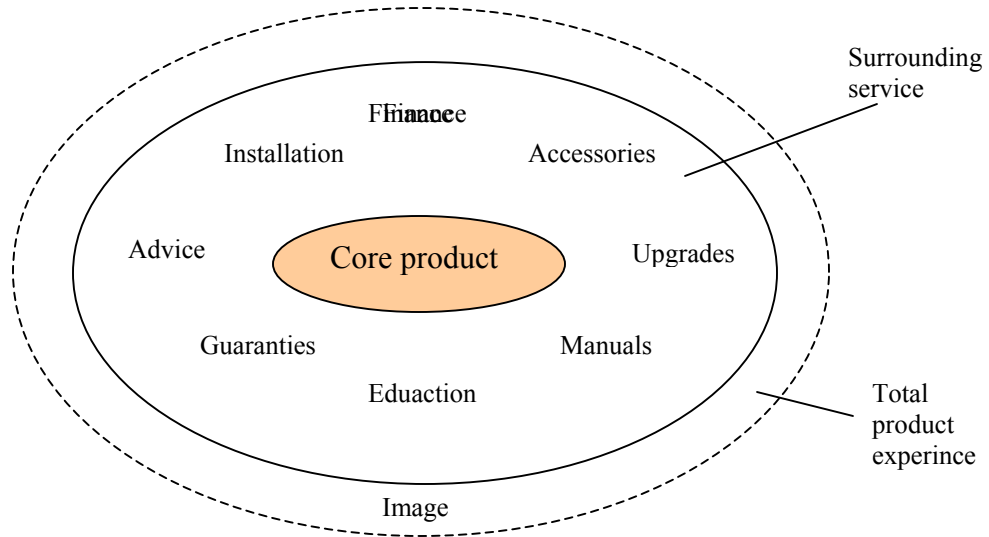


Figure 3.1 Total product (Gustafsson, 1998)

With standardized components in competitive products it is sometimes hard to separate them through technical performance, quality and design. The products must instead be differed through more abstract properties. This non-physical property is often called image, identity or profile. There is often a deeper dimension in the characteristic that controls our choices between similar products. Gustafsson (1998) mention the motorcycle Harley Davidson as an example where the non-physical quality is very strong.

3.3 Product adoption characteristics

To be able to understand why certain tasks are relevant in the launch process, and how the work of launch should be done, we must also know what kind of a product we are dealing with. Therefore, this part tries to clarify how a product can be viewed at in terms of newness and also how different characteristics might influence how the product is being looked at from a customer point of view.

3.3.1 Newness of a product

There are different nuances of newness of a product. One way of looking at this when launching a new product as explained in Gisser (1972) is to answer the question: new to whom? In the work of launch process, it is well documented that the degree of product newness is a key factor influencing launch decisions (Gultinan, 1999). A product that has been out for sale in one specific market can still be considered new when introduced in another market. Below we can see that there are two main considerations. First we must define the degree of newness, and then consider to whom the product is new: 1) market newness to the supplier, 2) product newness to the supplier and 3) newness of the market involved to the company. That is, a product can be new to a supplier independently of how new it may be to the user.

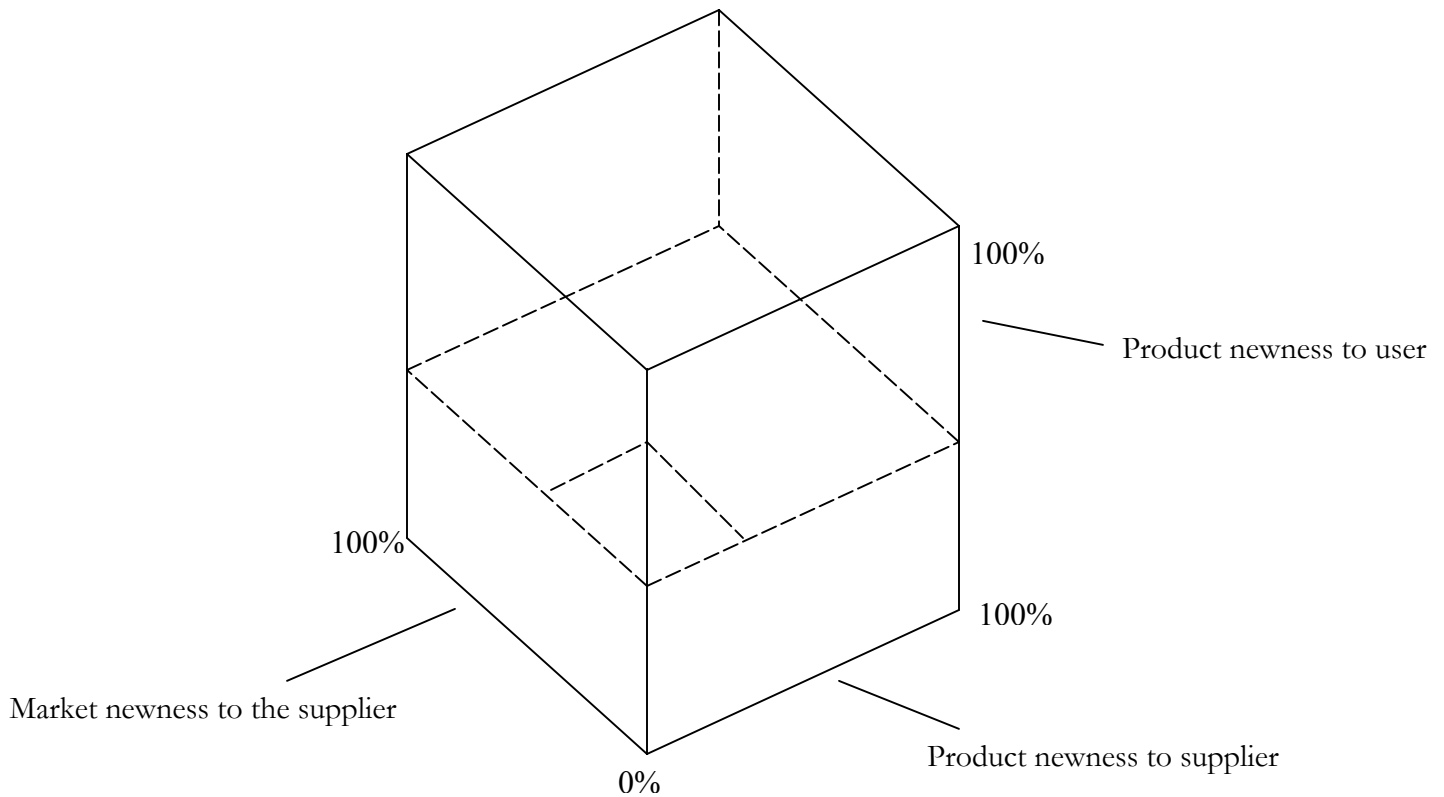


Figure 3.2. Newness of a product (Gisser 1972)

The small square inside the box is to illustrate where a certain product can be found, considering the three types of newness. This as a basis for continuing planning i.e. how to communicate about the new product to the market and end-users.

When the company is to determine the risks involved in the launching of a new product, each of these dimensions must be taken into consideration. They serve as a foundation for the strategy and tactics needed to introduce the product in a successful way. As one can understand, there are a great number of different situations where a new product can be found in the figure above. Thus, the resources needed for the introduction may vary considering to what extent the product is new to the user, supplier or if the market is new to the producer. This also means that lessons learned in one introduction can sometimes be hard to apply to the next introduction (Gisser, 1972). Gisser (1972) also underpins the fact that this model is not only valid for pure physical products, but services, mixed products and service systems as well. This is because service systems and the like are all needed to reach specific business goals, thus in this case seen from the same point of view from customers and sellers.

3.3.2 Adoption variables

According to Gultinan (1999), there are several characteristics of a new product that influence the adoption. The classification that he does is distinguished from the pure product characteristics that describe a core-product with its supportive tangible and intangible benefits. Gultinan's (1999) characteristics are focused on how much they influence the pure adoption process of the product, and not merely on product attributes. The five characteristics as Gultinan sees it are described in the figure below.

- 1) **Relative advantage.** Price-performance ratio when the new product is compared to the existing and established one. Parameters here are decrease in discomfort, savings in time, social prestige etc.
- 2) **Compatibility with values and experiences.** The compatibility measures if and how the new product is attuned to needs for the product, previously introduced practices and also sociocultural values and beliefs.
- 3) **Complexity in use or understanding.** The variables here are the need of new skills and thus training in order to use the product and fully reap the benefits.
- 4) **Trialability.** To reduce the buyer's uncertainty, test drives, system trials and different forms of samples are introduced to the prospective buyers.
- 5) **Observability.** If the benefits of the new product can be seen at once, the buyer is generally more eager to adopt. Non-observable benefits will call for more substantiation if the customers are going to accept the product.

Figure 3.3 Variables that influence adoption (Gultinan, 1999)

Of the above-mentioned characteristics, two are to be given special attention according to research done by Ostlund (1974), Dhebar (1995) and Veryzer (1998) as concluded by Gultinan (1999). These are the relative advantage and compatibility, as they seem to have the greatest influence on trial and adoption of a new product. The other three characteristics (trialability, observability and complexity) are considered to be fixed in a larger degree. Relative advantage depends on a positioning of a product's benefits compared to those of the existing and currently used product, while the compatibility depends on the positioning of the product's fit with individual needs, values and usage systems of the potential buyer. This in comparison to how well the current product fits regarding these issues.

According to Gultinan (1999), the greater the number of benefits related to the level of improvements and importance over current benefits, the greater the potential relative advantage. Also, if the new product requires new knowledge or even decreases the value of a customer's prior experience, the level of compatibility is reduced. Thus, the main determinants of relative advantage and compatibility are things such as occasions for usage, attributes of the product, benefits of new procedures when using it and the like. We can conclude that if the customer does not recognize the benefits of the new product to make a significant difference in utility, the actual benefits and features does not lead to a relative advantage for the user. This means that the chances of compatibility depends on how the user perceives the product usage process compared to the current work process (Gultinan, 1999).

3.4 Service concept

As the case we are studying concerns a product that can also be seen as a service, we here want to give a picture of what constitutes the service concept. This is relevant as it is important to get a clear view of what issues that influence the work of creating and providing a service to a company's customers.

In Edvardsson et al. (1988), Grönroos (1990) describes three categories of services when categorizing what services are. These are *kernel-service*, *bi-service* and *supportive-service*, where the two latter ones may include physical products. The kernel-service is the base or main activity for the operations in the organization, i.e. the actual flight in the business of an airline company. Bi-services, such as the airport bus to continue the example, constitutes of the kind of service that is needed for the kernel-service to operate well and be available for the consumers. Supportive services are additional services offered to frequent and long lasting costumers, like access to special lounges at the airport.

The service concept includes what is provided for, e.g. the needs that are in focus, expressed in terms of kernel- bi- and supportive services. The offering is also connected to the infrastructure and resources at hand, thus the service offering and the process that is connected must be mutually dependent on each other. In a management perspective though, it is not enough that the service concept that is being offered matches the requirements of the customer. Above all, these requirements must be realizable and competitive for the producing firm (Edvardsson et al., 1988).

A holistic view of the service being offered should take into account diverse resources and the environment surrounding the service. This systematic way of determining the parts that

interact with each other includes the customers, organizational structure, management and employees as well as physical/technical resources. Summarized this is called a service system model (see Figure 3.4 below).

The service system is influenced and partially directed by the organizations business concept, strategy and goals. The internal infrastructure, such as distribution channels and competencies in other parts of the organization, affects the service system depending on how advanced and incorporated these factors are in the producing organization.

The external infrastructure contains of the presence of legal constraints and other regulatory issues. Competitors are also included in the external infrastructure. The four main parts of this service system figure will now be presented.

3.4.1 Management and employees

To the customers, the employee of the service producing company is often viewed as an integrated part of the service. The customer's notion of quality is thus influenced by the appearance and behavior of the employee. The risk involved is that the service quality may vary depending on the presence of people from the producing company. The good manners and attentiveness customers associate with good personal service must be part of the hiring, training, and performance standards of the company. Indifferent or surly execution can devalue the service (Shostack, 1984, in Edvardsson et al., 1988). Employees can be seen as the critical or even determining factor for the customer to experience a high level of quality in the bought service. Therefore, it would be quite natural to adapt and conform systems, routines and other resources to the logics of the human being, e.g. employees and customers (Edvarsson et al., 1998). The service can often be seen as intangible and abstract, and therefore is the encounter with the employee enables the customer to more easily get a clear picture of and appreciate the service. Schneider (1994, in Edvardsson et al., 1988) emphasizes the importance of knowledgeable and motivated employees that take an active interest in their task and their customers, in order to perform a good job. Motivational influences can be things such as career opportunity, relations between employees including towards the manager, and the content of the work tasks. Thus, not only the interest and requirements of the customers are important but the ones of the employees of the selling firm as well. (Thomasson,1993, in Edvardsson et al. 1988).

As a result of the above, the competences of the employees have a decisive influence on how customers perceive the service. According to Thomasson (1993, in Edvardsson et al., 1988) competence can be divided into four categories: basic competence, professional competence, critical competence and business competence. The basic competence is simply put knowledge about company values, goals and its history. Professional competence is limited to the tasks or areas of responsibility that is connected to the specific profession of that employee, and the critical competence is the ability to handle unplanned or acute events and errands. The business competence is to what degree the employee understands the economic situation of the company and also the economic situation as well as the needs of the customer.

Finally, another important part of how the employees treat their customers is the issue of integrity. Integrity means carrying out a service transaction in a manner that makes it a building-stone in a relationship rather than episodic, isolated event (Edvardsson et al., 1988).

3.4.2 Customers

The second main resource of the service system is the external customers. This resource do not only consist of the persons themselves (business corporations or private customers) but what is more the equipment and technical infrastructure they possess in order to incorporate information obtained. In the field of service marketing, two aspects should be stressed out (Edvardsson et al. 1988): 1) to create clear and realistic customer expectations through the process of concretizing the characteristics of the service and 2) enhance the role of the customer as a co-producer of the service. The latter one increase the chance of the customer to be motivated in using the service once it has been purchased. It does not mean that the customer is always right, but merely that the producer of the service should help the customer articulate their needs and requirements.

Another important aspect is to design the service system in such a way that it supports the customer's role to actively contribute to the process. An example of this is to let customers interact and exchange ideas between each other. This exchange and the exchange of information between the customer and the producing company should thus be organized so that the customer can contribute to the service process by executing some of the development of the service concept (Edvardsson et al., 1988). Crucial is also how this interaction and dialogue is conducted, i.e. the possibility of feedback, how and when customers can give this feedback and possible special treatment of highly prioritized customers.

3.4.3 Organizational structure and system

In this part, roles and structures within the service system is to be defined. The organizational structure should clarify responsibilities and authorities over certain operations or customers, which is crucial for the understanding of the service process (Kullvén, 1994, in Edvardsson et al., 1988). This is closely connected to the output quality of the service produced, and the risk is that employees underestimate their importance for the service quality especially if they do not interact directly with the customers (Thomasson, 1993, in Edvardsson et al., 1988). This is supported by Senge (1999, in Edvardsson et al., 1988) who states that the most important for organizational learning is that the employees get a picture of and understand the outcomes of their own actions, especially in respect to the external customers of the firm.

In the case of roles and responsibilities, there is a great significance in letting functional responsibilities interact with those connected to the service process. One example is the responsibility an employee or a team of employees might have to one specific customer. Further, the organization must clearly define these responsibilities in terms of activities and most of all communicate to the customer who is working with what, when and so on. Edvardsson et al. (1988) talks about an example from IBM, where management came to the conclusion that the processes and the organizational structure must complement each other, e.g. that functional responsibility and responsibility for the service process support each other. Four categories can be distinguished: 1) management, 2) back-office, 3) front workers, 4) customers in their role as part-time employees or co-producers.

According to Edvardsson et al. (1988) it is essential to create a strategic consciousness and service/customer oriented pattern of behavior among the employees. The organizational structure must therefore support the internal marketing process of the service, before the external launch is being conducted.

3.4.4 Physical /Technical resources and physical products

In this category things like computer and network capabilities, other equipment that is crucial to the production at the customer site, work space etc. is included. Physical products are often included in the perception of what constitutes the service, in terms of bi- and supportive parts, which was discussed above. Low functionality on these supplementary physical products can lead to a negative perception of the actual service, although the service in itself is impeccable. The development of technical equipment as a tool for using the service should be both business *and* customer driven (Omsén, 1992, in Edvardsson et al. 1988). This as the technical equipment entails both possibilities and constraints for the customer. The user-friendly design must be a self-evident goal when designing a technical product not only including esthetic and interface issues but also how natural it is for the customers to use the product in order to reap the benefits of the service.

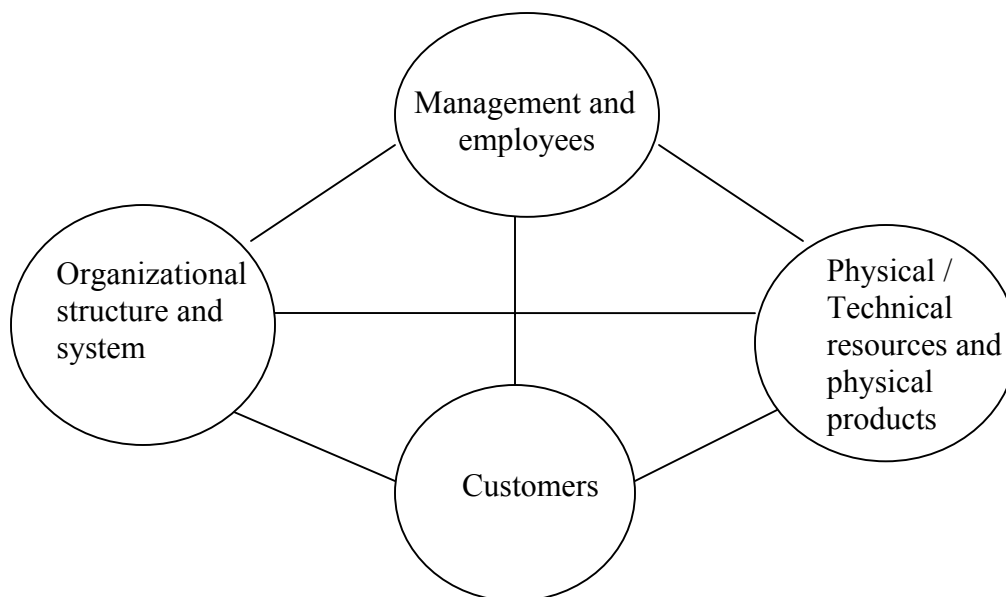


Figure 3.4 The Service System's categories of resources (Edvardsson, 1996, in Edvardsson et al. 1988)

To summarize the above presented model about service systems and the service process, the following critical points are declared by Edvardsson et al. (1988):

- Interdependence between sub-projects in the service development process
- Uncertainty about process owner and assigner
- Lack of information about goals and project specifications
- Unclear project management

- Limited market analysis and information about the market
- Shortcomings in the feedback process during development
- Lack of documentation of guidelines, due to informal working procedures

3.5 Communication with the customer

In order to work up a long-lasting, trustworthy relation between the selling/producing company and its customers, there are some relational aspects to consider. Hallows (1995) declares that the base for all relations is the dialogue. Only through the dialogue can trust, identity and the feeling of security arise.

According to Hallows (1995) the only way to measure customer satisfaction is to talk to the customer and ask what he thinks. If the producer only looks at trends in usage of the service, this can indicate the degree of satisfaction but do often not become meaningful until it is too late. Users might for example use the product despite their dissatisfaction. Measuring customer satisfaction proactively can only be done through direct contact with the customers and users. This also means giving the user the possibility to express dissatisfaction before finding alternative ways of using the product (e.g. not using it or not using it fully). By this, the producer has the chance of identifying trends in service satisfaction levels before the users have identified alternatives to the service. Further, two things determine the customer satisfaction: expectation and experience. By this, Hallows (1995) means that the process for managing customer satisfaction starts well before the customer becomes a user of the service or product. Depending on how the service or product will perform or affect working procedures and costs, the customer sets his expectations. This is in turn compared with the experience the customer has of a current service or product, and thus why it should be replaced. The correct expectation has to be set at the beginning of any service implementation, through the definition and clear understanding of the requirements that the service is trying to meet and how it is going to meet them Hallows (1995).

There are three different kinds of dialogues (Hallows, 1995). These are the individual dialogue, the identity dialogue and the concept dialogue.

The *individual dialogue* focuses on here and now. In the actual meeting, face to face with the customer aspects like active listening and proactive questions are important elements. Through active listening the selling company is able to react and respond faster if and when problems arise. *Identity dialogue* is simply about psychographics. Knowledge about customers' values, attitudes and beliefs lies as a theoretical ground for communicating certain messages to certain groups of customers. A *concept dialogue* treats the bigger issues. The purpose is here to develop the selling company's business concept together with the customer who will buy and be affected by the product. Through this kind of cooperation the customer gets involved in a positive way and takes bigger responsibility for the strategy that is being developed.

In the case of getting a customer to use a product for a longer period of time, *education* and *information* should be the lead words and not *sales*. When knowledge is gained about what features affect the customer, this should be in focus when informing about the product. It is hence a question of spending time and money on education and an interactive process and

thus using the customer's resources in order to increase the productivity (Hallows, 1995). To obtain and to hold satisfied customers, both external and internal, should be the most important goal for every competitive corporation. Customers and partners who work as good ambassadors are thus fundamentals for gaining and keeping a competitive advantage Hallows (1995).

3.6 The launch concept

After having examined the most relevant theories to get a holistic and clear picture of what we are dealing with, we now focus on the actual launch process and the structural issues connected to it. First of all, we look at how the literature classifies the work of a launch process, to successively examine the stages and issues (i.e. *strategic* and *tactical* launch activities) that are connected to launching a product.

As Di Benedetto (1999) concludes, product launch is relatively under-researched within the product development research area. The launch phase is considered to be the single most costly step in new product development, yet the literature has not emphasized this process thorough enough. The research that has been done emphasize empirical results rather than developing a theoretical understanding of the launch-concept (Hultink et al., 1998). According to (Urban and Hauser, 1993, in Hultink et al., 1998) the product launch often requires the most prevalent dedication in money, time and managerial resources of all the steps in the new product development. But, (Hultink et al., 1998) also concludes that the proportion of launch costs must be seen in relation to market newness as well as technological newness of the product. This supports the relevance of mapping the product's newness as presented above in figure 3.2.

Several leading researchers in the field of new product success, such as Townsend (1974), Cooper (1979), Zirger (1984) show in Hultink et al. (1995) that there are seven factors that are crucial for new product success. These are *product advantage*, *market knowledge*, *technological synergy*, *marketing synergy*, *market potential*, *top management involvement* and finally the *launch strategy*.

In the comprehensive model presented below (Figure 3.5, Gustafsson 1998), five issues are considered the most important ones to define when working with the launch of a new product. If the product is to be well received, to commercialize and launch the product in an effective manner is obviously a critical driver to product performance. Numerous studies have shown that a strong product launch significantly improves the chance of success (Di Benedetto, 1999). Also, research have shown that successful products often have much higher expenditures when it comes to launch and commercialization activities, than do those who fail or underperform as new products (Koober and KleinSchmidt, 1990, in Di Benedetto, 1999).

3.6.1 Generic launch factors

According to Di Benedetto (1999) is the launch often the most costly single step in new product development. Di Benedetto points out that product launches are relatively underresearched in the product literature despite its importance, cost and risk. The launch plan is usually growing successively throughout the development project (Gustafsson, 1998). Factors that control the launch is already planned in a general way in the product plan (figure 3.5) but have to be worked out more carefully further on.

1. *What* would be included in the launch?

In addition to the core product functions, performance, life cycle and design are the product surrounding with services, price and image that together represent the total product.

2. *Who* or which purchaser will be the target in the introduction phase?

Different types of targets can be involved, for example potential purchasers, distributors and own personal.

3. *Where* will the introduction start geographically?

Choice of geographical markets for the introduction is often depending on available resources and on market situation.

4. *When* is the timing right?

The launching time is important for the commercial success. Competitors and how ready the product is to be launched on the market effect acceleration or delay of the product launch.

5. *How* will the market introduction be performed?

The action plan for the introduction is depending on the answers from the other main questions what, who, where, and when.

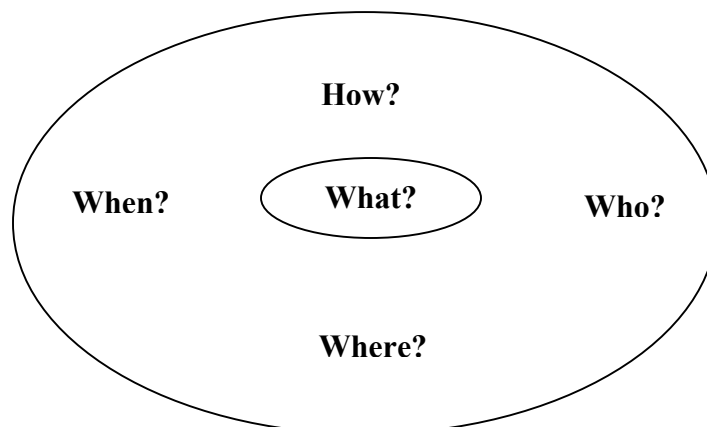


Figure 3.5 Key factors in new product launch (Gustafsson, 1998)

In addition to the above five points, Di Benedetto (1999) underpins the great importance of market information gathering activities in the following points:

- Steps in market testing: selecting customers for market testing, submitting products to these customers, executing test markets, and analyzing the results;
- Studying feedback from customers regarding the product both during and after launch;
- Planning and testing advertising
- Contracting out specialized research work to outside contractors

The result of the information-gathering activities shows the importance of market testing and detailed analysis of customer feedback as precursor to more successful launches.

3.6.2 Stages in the launch process

One can see the launch process as consisting of not one single step, but merely an ongoing process under which some decisions and steps are undertaken several times. According to Easingwood et al. (2002), a high-tech product goes through several phases during its life cycle during which it appeals to different customers. The customers can be grouped into 'visionaries', 'techies' and finally the mass-market customers. These groups are found in figure 3.6 below, where they adopt the product in different stages of the commercialization.

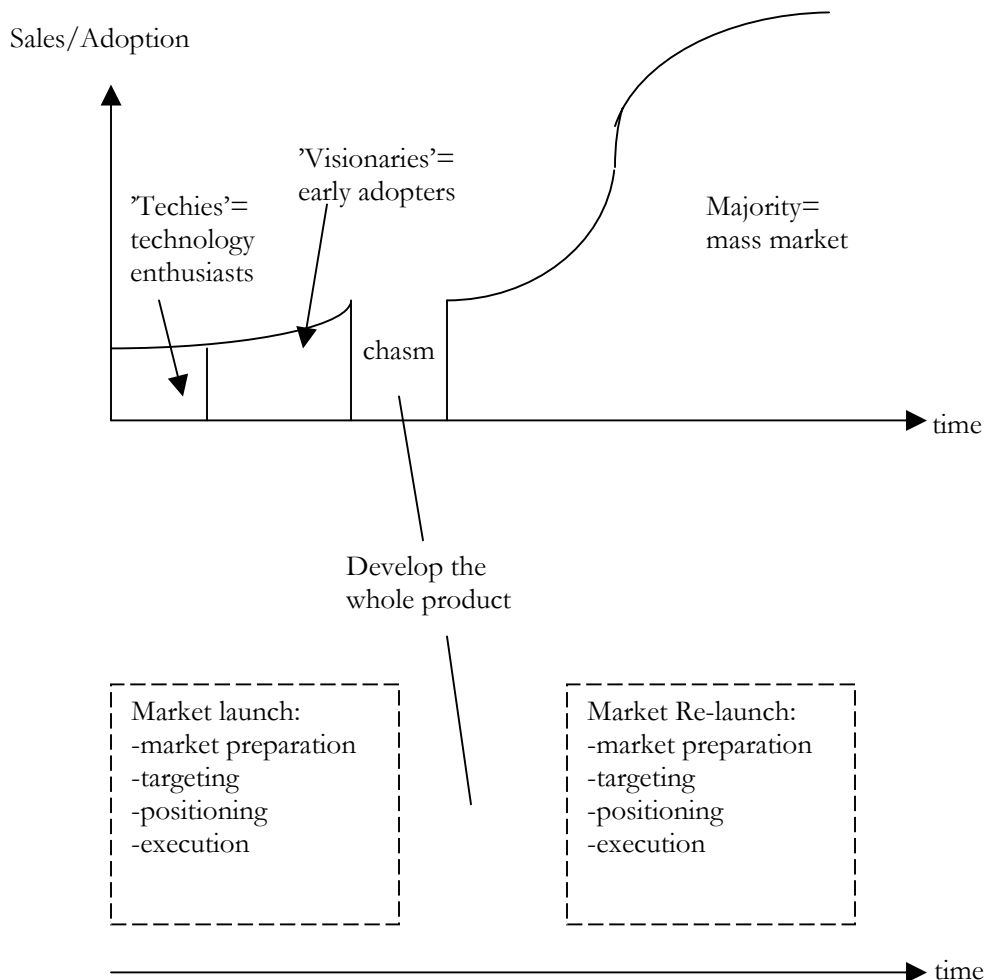


Figure 3.6 Technology adoption curve (Moore, 1999) and Launch-exhibit (Easingwood et al., 2000), in Easingwood et al., (2002).

This model is mainly used to describe a product's acceptance in the mass market of consumer products, but can also be used as a basis for understanding how consumers generally adopt new technology products.

3.6.3 Strategic and tactical launch activities

The model of the five key issues when launching a new product presented by Gustafsson (1998) is supported by Hultink et al. (1998) who declares that strategy launch decisions made when introducing a new product are often made both explicitly and implicitly. Also, Hultink et al. (1998) suggest that these decisions must always include the questions *what, when, where, and why*. Figure 3.5 (Gustafsson 1998) can serve as a starting point for going one step further; authors like Di Benedetto (1999), Hultink et al. (1998) and Gultinan (1999) talks about grouping these launch activities into two sub-groups. They define them as *tactical* and *strategic* launch activities, and the decisions linked to these activities. According to Gultinan (1999) managers face crucial contingencies in developing launch strategies and tactics. He concludes that the most important issues involve the firm's resource base, the technological environment and the product-market environment. Also, the studies that have been done in the area have revealed little about the specific combinations of strategic and tactical launch decisions that strengthens each other to drive success of the new product (Hultink et al., 1998).

Strategic launch variables

According to Hultink et al. (1998) the decisions that are connected to strategic launch questions include the *what, when, where, and why* of the product launch. Gultinan (1999) does not talk in these terms, but declares that strategic decisions constitute of deciding *target market, leadership* and *relative innovativeness*. By this he means firstly whether to niche the product to a specific market or to "mass market" the product. Secondly if the producing firm is to follow competitors or make the first move itself, and finally to what degree external and internal product design features are innovative compared to existing products. As to the latter of these factors, relative innovativeness, the perceived innovativeness and advantages can differ from different potential buyers and thus be dependent on what market the firm chooses to target.

Biggadike (1979), Crawford (1984) in Hultink et al. (1998) determine that strategic launch decisions define the boundaries of the process. In their studies they also conclude that strategic launch decisions include parts of the project's product strategy as well as the firm's strategy. These decisions that concern the *what, when, where* and *who* are thus being made in an early stage of the product planning. Cooper (1993), Crawford (1984) and Biggadike (1979) state in Hultink et al. (1998) that aspects of launch decisions are considered strategic if they are made early in the new product development process and if these decisions are expensive and difficult to alter later in the project. The strategic launch decisions have thus an impact on the tactical decisions in the way that they can set the conditions on which of the tactical decisions that are most likely to maximize profitability (Biggadike 1979, Hisrich and Peter 1991, Robinson and Fornell 1985, in Hultink et al. 1998). Further, according to Biggadike (1979) in Hultink et al. (1998) strategic launch variables can be divided into three groups: *product strategy, market strategy, and overall firm strategy* which have an impact on project

selection. As Porter (1980) puts it: the strategic decisions define the competitive scope of the coming actual launch of the product (Hultink et al. 1998).

A recent study gathered data from managers in nearly 200 products launches to find out the most critical strategic activities that influence success in new product launch (C. Anthony Di Benedetto, 1999). The study shows that superior skills in the following areas are related to successful launches:

Strategic launch activities

- Having skills in marketing research, sale force, distribution, advertising and promotion, R&D, and engineering
- Having cross-functional teams make decisions concerning manufacturing, distribution/logistics, and marketing/sales strategy.
- Having logistics involved in formulation distribution strategies, coordinating with sales management, developing inventory strategies, and planning after-sale strategy.

Tactical launch variables

The tactical launch variables simply address the issue: *how* to launch the product. According to Guiltinan (1999), launch tactics are “the decisions and activities that are primarily used to clarify or leverage relative advantages to demonstrate or enhance compatibility to the target market.” Hultink et al. (1998) define tactical launch decisions as those who are made “relatively late in the project and if they could be easily or inexpensively modified as launch neared.” Thus, derived from these two definitions we can see why Hultink et al. (1998) talks about that tactical launch decisions are about the marketing mix decisions such as deciding the *price, distribution, promotion* and how to *brand* the product. In (Hultink et al., 1995) similar parameters are found after studies done by Simon (1986), Link (1987) and Traynor and Traynor (1989). These are *price, promotion, competitive advantage* and *product assortment choices*. Another parameter that is suggested by Guiltinan (1999) is the issue of *timing*.

We will now examine what is included in the above-mentioned parameters, according to the literature.

Pricing. Kotler (1991) and Hultink et al. (1995) declares that there are two main pricing policies. The first is referred to as skimming strategy, where high prices are set initially to be followed by lower prices. This is said to be suitable when the high price supports the high-quality image of the product, when a sufficient number of customers have a high current demand, and when the high price does not attract more competitors. Penetration pricing is on the other hand a pricing policy where the initial price is low, in order to reach as many potential buyers as possible. This is said to be suitable when the market is price sensitive, when production and distribution costs fall with accumulated production experience, and when a low price discourages actual and potential competitors. Guiltinan (1999) adds a variable to pricing, what he calls price administration. In that he includes leasing, rebates, money-back guarantee. This he means is suitable when the relative advantage is modest.

Sales and distribution support. The distribution structure of the selling firm, together with technical support, shows and demonstration and intensity of coverage are factors influencing the demand outcomes. When a change of usage pattern is required shows and demonstrations are crucial to illuminate the relative advantage of the product. Further it is said that the technical support reduces the risk of incompatibility and supports customization (Gultinan, 1999). Hultink et al. (2000) suggest that new industrial products may have a greater number of potential options for distribution in order to promote diffusion throughout the market. This often leads to the need for industrial product developers to invest in training their distributors as to enhance end user adoption. Studies also show that making the right channel decision is highly related to industrial product success (Hultink et al. 2000).

Product tactics. Branding of a product is generally thought of applying to consumer products, but Hultink et al. (2000) show that branding of industrial products is becoming more and more important. In order to customize the industrial product as much as possible, the width of assortment of the product can be decisive. Further, Hultink et al. (1995) Traynor and Traynor (1989) found that the completeness of the product line is among the most important marketing instruments for hi-tech markets. The product line is the number of models or variations in the new product (Hultink et al. 2000). Interesting is also to see that Hisrich and Peters (1991) in Hultink et al. (1995) argue that a large product assortment of the same kind of product might confuse the customer when deciding whether to buy it or not. Although it is also stated in the same article that by differentiating and targeting an innovative product to dissimilar market segments, firms can increase their competitive space.

Timing. In the case of how to time the launch of the product, things like pre-announcements can help to build an acceptance for new procedures linked to the new product. In the case of high relative advantage a fast deletion of the old product is possible, but if there are great psychological or other switching costs (i.e. economical), a slow deletion is recommended (Gultinan, 1999).

Promotion. Generally, promotional activities can be divided into two categories: the pull and the push strategy. A push strategy includes activities directed at intermediaries in the distribution channel, in order to encourage them to promote the product to the end users. When using a pull strategy the selling firm directs its promotional activities directly to the end users with the goal of getting them to ask intermediaries for the new product. These two main strategies are supported by Kotler (1991), Wind and Mahajan (1987), Davidow (1986) and Hisrich and Peter (1991) in Gultinan (1999). The pull strategy is considered to be of great importance with the purpose of creating an awareness of the new product. On the other hand, when it comes to high-tech products there is often a need for education and thus the push strategy becomes important in these cases of launching a new product. Studies done by Easingwood et al. (2002) show that industrial new product promotional tactics will focus on direct forms of communication such as sales force, direct marketing and PR. Mass advertising communication tactics were not supported in their studies (Hutlink et al. (2000).

Competitive advantage. In Gultinan (1999), Cooper and Kleinschmidt (1987) and Johne and Snelson (1988) mean that the competitive advantage might originate from higher quality, better design or the fact that the new product is more innovative. They mean that these features can influence the eventual adoption of the new product.

Di Benedetto (1999) concludes the following aspects about tactical launch activities to be important:

- High quality of selling effort, advertising, service, and technical support
- Good management of key aspects of the launch: marketing plans, overall launch direction, and the launch itself
- Good management of the support programs: distribution channel activities, sales force training, good pricing level, and advertising program execution
- Launch timing relative to competition and customers

3.7 Buying behaviors and segments effecting launch decisions

Guiltinan (1999) has the same opinion as the above-mentioned authors and researchers in that the existing literature offers limited decision-making guidance to managers on how to prioritize and integrate the various strategic and tactical options. Therefore he distinguishes three types of buying-behaviors to be influenced; 1) *trial and repurchase*, 2) *customer migration* and 3) *innovation adoption and diffusion*. These could thus be seen as issues relevant to the degree of market acceptance for a new product, and are presented in the model below.

Briefly described, *Trial and repurchase* represents the kind of buying a customer does when the risk involved is quite low. That is, the buyer can make trial purchases before deciding to use a product regularly. The requirements on information about the product are thus quite low and the promotional activities are highly decisive on whether the customer buys the product or not.

In the case of *Migration*, the product represents a significant change or upgrade to the customer in comparison with the former product used. The customer uses an existing product and the challenge for the launch plan lies in to see that existing customers migrate to the new product. Two typical situations of migration are described by Guiltinan (1999). The first is where it is desirable that the customers increase their use of this kind of product by introducing a better price-performance alternative. The second typical situation is where the new product represents an upgrade that completely substitutes an existing one. Generally speaking the customers' assessment depends on the benefits and costs of change. It might therefore be in the interest of the producing company to stimulate discontinuance of the existing product.

In the case of a “really new” product (*Adoption and diffusion*) the adoption by the customers is generally slower. The diffusion of the new product is by time more and more dependent on the word-of-mouth effect, as the effect of how early adopters view the product becomes very important. The time and cost involved in buying and adopting the new product is weighed more carefully in this case, depending on the perceived high newness of the product to the customer and the market.

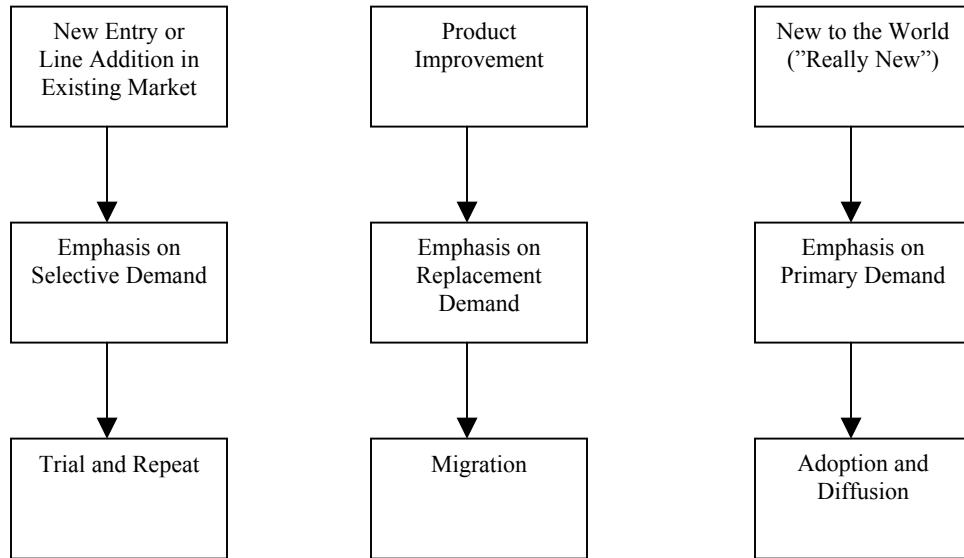


Figure 3.7 Desired buying behaviors (Guiltinan, 1999)

There are some standard niche options that exist for each type of demand outcome that are represented by the boxes furthest down in Figure 3.7 above. Related to both figure 3.7 and the theory of compatibility and relative advantage is the figure 3.8 below, which shows a list of options that are normally a priority when launching a new product. The X in figure 3.8 indicates the more important product characteristic.

Desired buying behavior	Potential segments	Relative importance of	
		Relative advantage	Compatibility
Adoption/Diffusion	Early adopters	X	
	Late adopters		X
	Users of competing category		X
	Non-users of competing category	X	
Trial/Repurchase	Current customers using our products		X
	Competitor's customers	X	
	Lead users	X	
	Buyers with special usage needs		X
	Variety seekers		X
Migration	Current customers		X
	Competitor's customers	X	
	Lead users	X	
	Buyers who recognize need for improved performance	X	
	Buyers who do not recognize need for improved performance		X

Figure 3.8 Illustrative Strategic Niche Opportunities with Ramifications for Launch Tactics (Guiltinan, 1999)

3.8 Cost alterations in product launch delays

Successfully product developments and launches can be derived from several factors. Several studies that have been done point out causes why product development and launches might fail. This knowledge can be very helpful to avoid problems in future projects and launches. A study made on American printer developers shows how different types of mistakes affect the profit under a five years period, see figure 3.9 below.

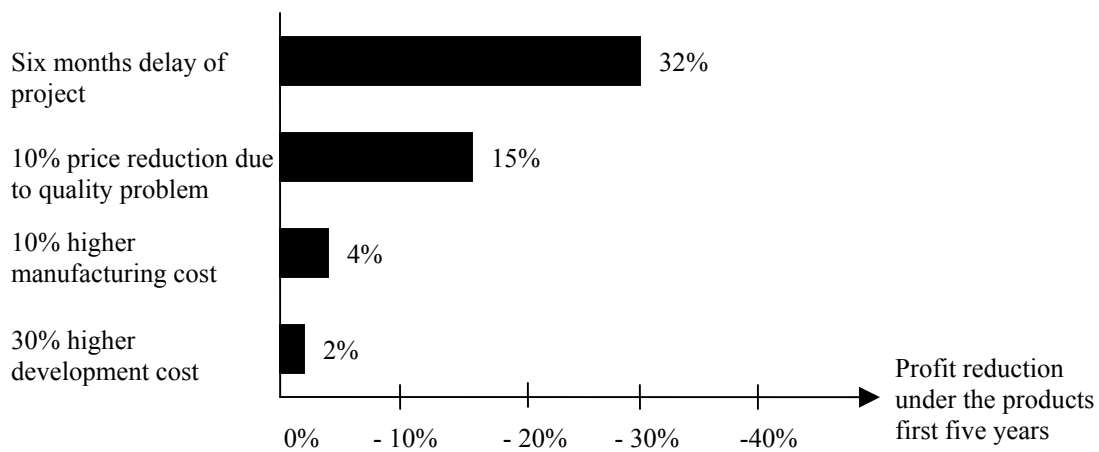


Figure 3.9 Effects of failures in product development (Gustafsson, 1998)

The study shows that delay of the project and price reduction due to quality problems is the factor that affects the profit most negatively under the products first five years. Higher manufacturing and development cost does not affect the profit to a great extent. These effects in profit reduction are not only valid in printer markets. They are valid in most high-technology markets.

According to Gustafsson (1998) there are a number of individual causes, or combinations of them that can reduce the possibilities to establish the product on the market:

- Lack in market analyze
- The product does not correspond to the expectation
- Lack in marketing effectivity
- Costs become to high
- The timing of the product introduction is wrong
- Technical problems in the product or in the production
- The competitive situation gets worse

3.9 Roadmaps

In this section we take a look at and examine the process of product development and the work of commercializing the product. The models used here are the most encompassing and detailed ones there were to find in the literature concerning our subject of this thesis.

3.9.1 Crawford's product innovation process model

An often-existing commentary about generic models is that "It doesn't work that way in our firm" (Crawford, 1994). He also argues that to be able to use generic models the manager must cut and fit the model according to the present situation. Figure 3.10 shows a common way that product development models usually are presented (Crawford, 1994). In the model there are five sequential steps; when one is completed the other step takes over.

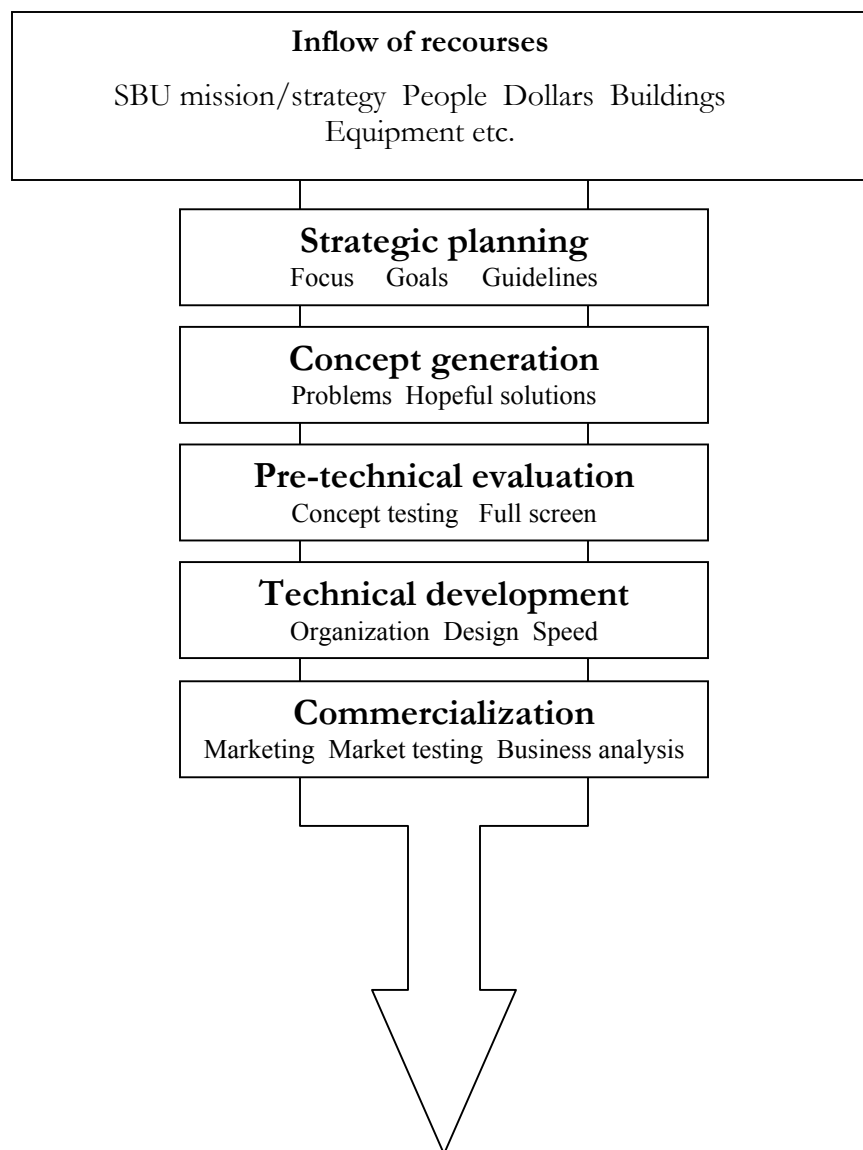


Figure 3.10 Model over the product process, Crawford, 1998)

1. *Strategic planning*

The goal with the strategic planning is to develop a sound strategy to guide the subset of people and resources charged with developing new products.

2. *Concept generation*

Management has the task of preparing the organization for a new product concept. This means applying the strategy guideline of a product innovation charter, finding and training creative people that can identify problems and suggesting solutions for them.

3. *Pre-technical evaluation*

In this stage the ideas that came from the concept activity phase must be extensively examined. It is common to use a scorecard to decide if the idea is viable or not. If the decision is to develop the product the team involved should write statements of what should constitute the product and what the main features should be.

4. *Technical development*

In this stage the development of the product innovation is carried out. If the product is well liked by customers, often test users, the next phase is to commercialize the product to the broader market. This step will be examined more detailed later in this chapter

5. *Commercialization*

This phase is associated with the scale-up of production and to prepare an advertising campaign or in other ways communicate the new product to the market. When everything is OK, the launch takes place. This step will also be viewed more detailed later in this chapter

The problem with sequential models is that they do not show the reality of the product process. The reason is that the process is rather overlapping and not purely sequential, which is shown in figure 3.11 (Crawford, 1994). The process model (Figure 3.10) uses names that sound like departments, but that is the wrong way to look at it. As an example, the technical development team also includes other participants, for example marketing and sales people. In other words there are cross-functional teams where all functions work together to complete the tasks.

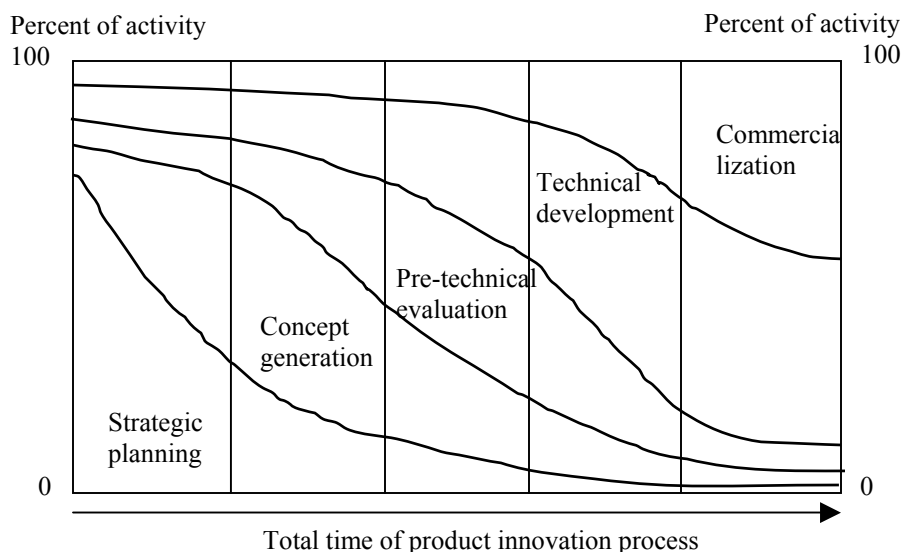


Figure 3.11 Model over the product process in actual practice, Crawford (1994)

Crawford's product process stages in detail

The goal with Crawford's holistic model (figure 3.10) over the product development and commercialization process is to make it clear for the viewer that several activities are involved. To make it visible for the viewer Crawford created more detailed models over the five steps of the product process. We will review *Technical development* and *Commercialization*. The reason for this choice is that they are the most relevant steps for the launch and the steps also fit with the time-line that our case study occurs in.

Technical development stage

Resource preparation. According to Crawford (1994) new product managers often overlook the resource preparation phase (figure 3.12). If the product is an improvement or a line extension there is not a problem, because the organization is familiar with the product. Market data is OK, the culture is right and working managers know how the work should be done. But if the product is a new innovation that is non-familiar to the organization there is a risk of misfit. To reach organizational fit for the new product innovation the team might require special training, new reward systems, special permissions, etc.

The major body of effort. All previous efforts are now leading up to the technical development of the product. In the body of this model it is obvious that the process have cross-functional activities. The left set of the model is the technical part and involves bench work (goods) or system design (service), product specification, prototypes/pilots and culminates with the finished product. The marketing phase is also ongoing with market scans to keep up with changes on the market. This work will end up with a marketing plan for the product. The marketing must be completely integrated with the technical phase, because the great need for marketing decision. A discussion starts about brand name, package design, and test cost of the product is derived. A technical dissatisfaction with the product may spoil all that marketing work, but there is no time to wait for each step to be final. Under the technical development phase there is also a focus on profit. In the middle of the technical phase there are steps from 'evaluation system' to 'gamma test', that assures the producer about customer satisfaction.

The last step, 'comprehension business analysis' is more utopia than reality because it is difficult to do a full business analysis when the steps are overlapping (Crawford, 1994).

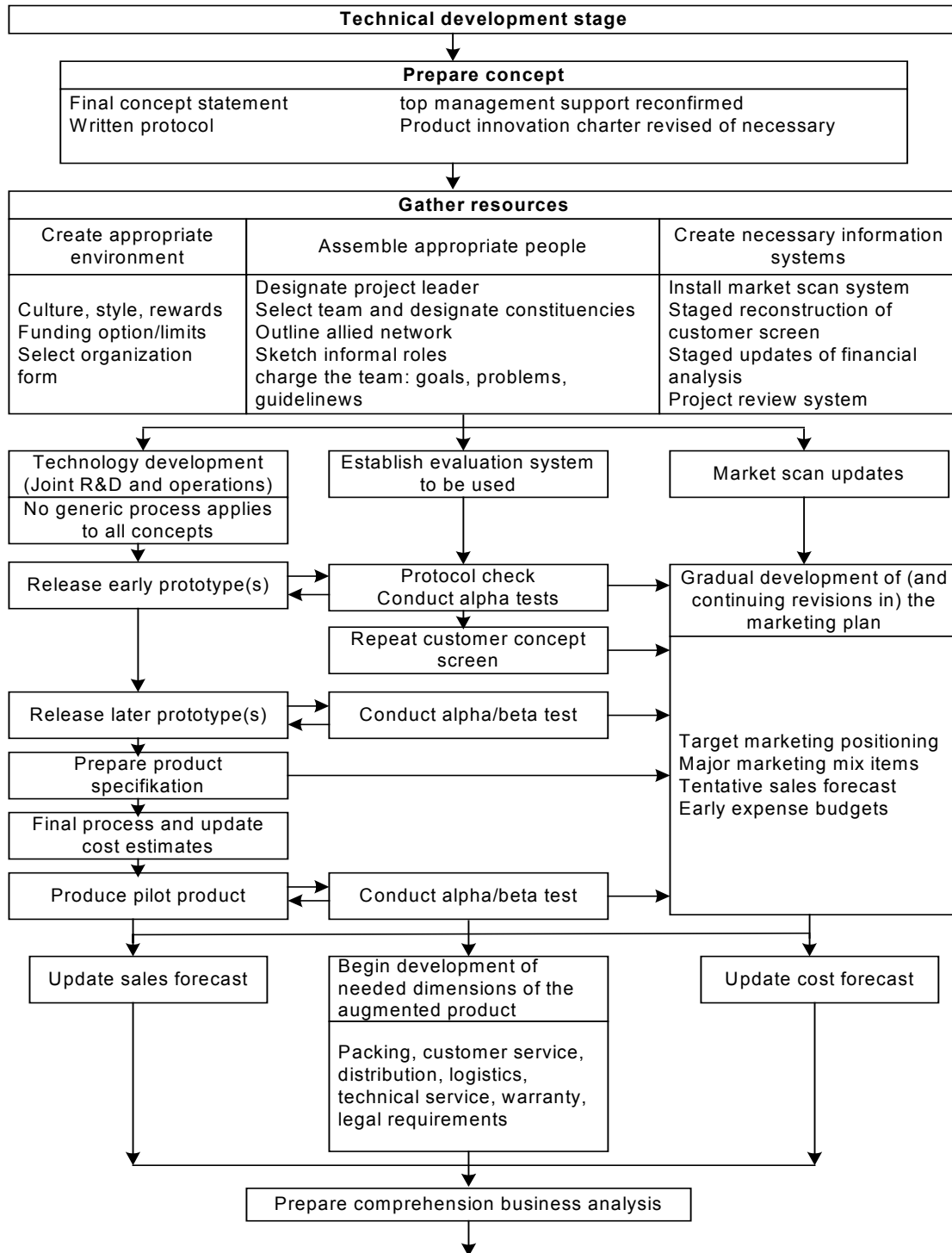


Figure 3.12 Technical development stage, Crawford (1994)

Commercialization stage

According to Crawford (1994) the term commercialization is traditionally described as the time when the firm decides to market the product. Crawford's definition is:

"We associate this with building factories or authorizing agencies to proceed with multimillion-dollar advertising campaigns". (Crawford, 1994: p34)

The commercialization should not mean the GO in the GO/NOGO decision because this decision is depending on what kind of product is being developed. In ordinary consumer products this decision could be taken just a few days before TV advertising contract is signed, etc. In opposite, pharmaceutical products often require 8 - 10 years of technical development, and are dependent of law, medical needs, and safety regulations. In the pharmaceutical business there are not much left for these kinds of decisions.

Crawford describes the commercialization phase as very dramatic, everything is critical and the tempo is high. In the earlier step there has been a focus on technical development but now its time to scale-up. The marketing plan is now getting more and more detailed with a large amount of tactical activities that are required for the launch.

In the midst of the commercialization phase (figure 3.13), the product and marketing are tested together for the first time. If there are any problems with the product or with the marketing this market test hopefully shows those problems. All problems that occur during this test have to be fixed before the product launch can start.

An important activity during the commercialization phase is the planning for launch control. According to Crawford the launch control system should contain of the following steps.

1. *Spot potential problems.* The first step is to identify all problems that could occur in the firm or on the market.
2. *Select those to control.* Each problem has to be analyzed to determine its expected impact. Expected impacts means that the likelihood for the problem to occur are multiplied with the damage the problem could cause.
3. *Develop contingency plans for the control problems.* This plan is about what happens if the problem occurs. What action should be done to attend the problem?
4. *Designing the tracking system.* The tracking system must send back feedback fast about the status for each problem area. If the problem cannot be tracked the problems are not under control.

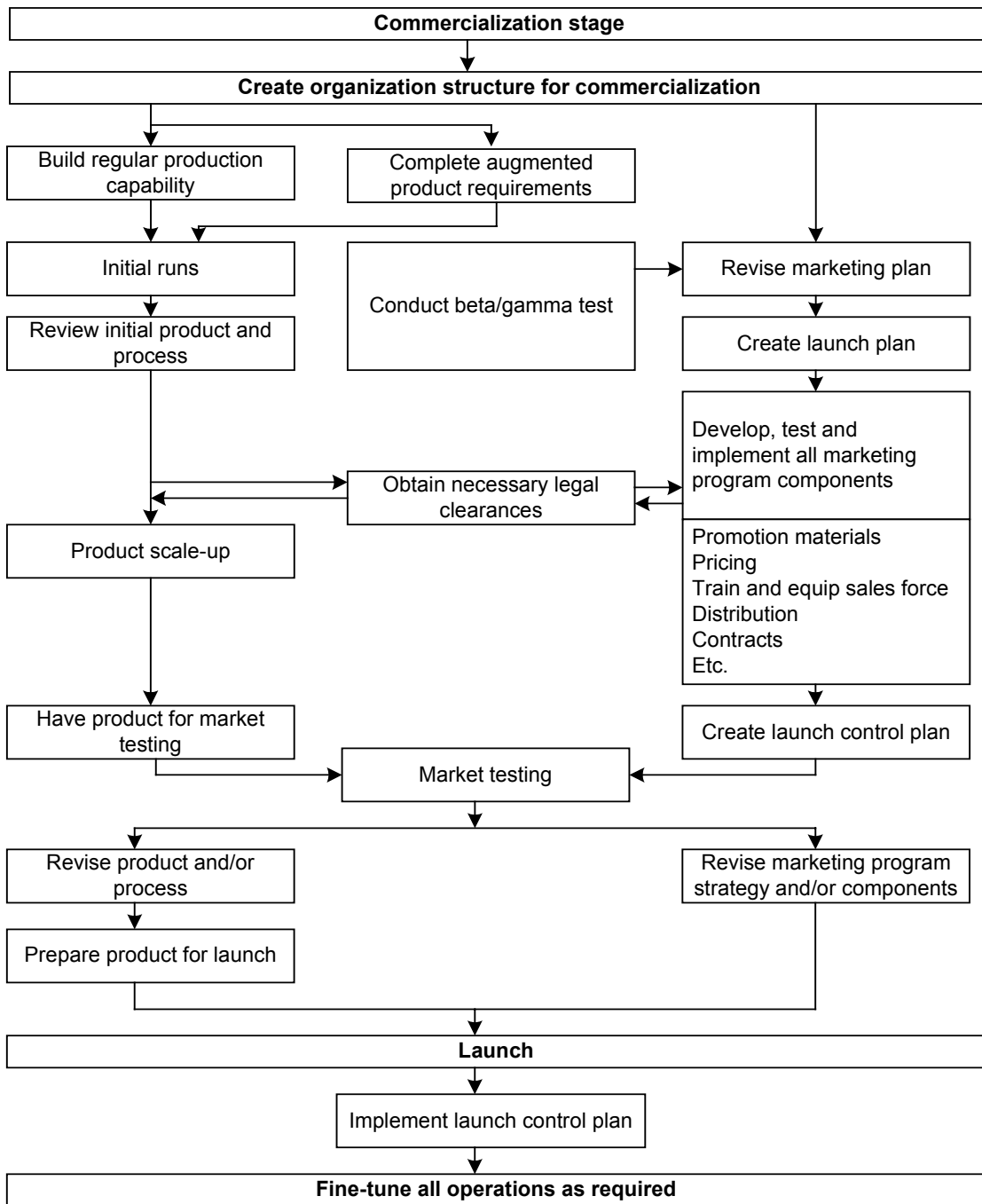


Figure 3.13 Commercialization stage, Crawford (1994)

The steps of *Technical development* and *Commercialization* that we have seen above constitute one of the most important foundations in developing our own launch management roadmap in this thesis. Although, the steps are seen as an input of theoretical knowledge based on research done by Crawford (1994) and several other crucial issues must be taken into account, as we will see in the chapter of Discussion. From Crawford's quite detailed way of

describing the launch process as he sees it, we will now give a description of Ginzberg's (1980) more holistic view on system acceptance.

3.10 Theory of systems acceptance

To round up the chapter of theory in this thesis, we will present Ginzberg's theory of systems acceptance. We do this to show the obvious and most important correlation between technology, actors and the business itself. This theory is briefly described below.

Ginzberg (1980) identified four different factors influencing the result of how successful a development work could be in a company. These factors are: *the designer, the user, the IT-system,* and *the company itself*. None of these factors are directly linked to the result, but it is rather the coordination of and cooperation between these factors that directs the final result.

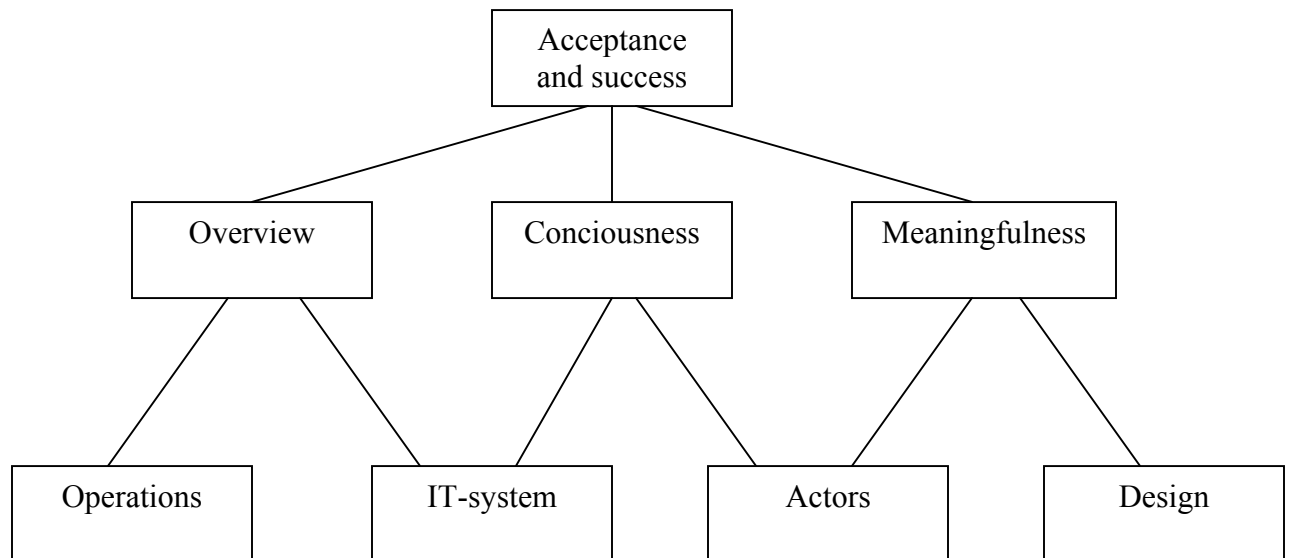


Figure 3.14 Ginzberg's model for systems acceptance (Ginzberg, 1980)

In order to understand the above model, we will now describe it as Ginzberg (1980) sees it. The goal with developing an IT-system is to reach success and acceptance. This broadly means three things: 1) satisfaction with the system, 2) usage of the system, 3) an improved overall functionality in the company as a whole. In order to reach the overall goal of acceptance with these three sub-requirements, there are in turn three demands that must be fulfilled. These are *overview, consciousness* and *meaningfulness*. The system must clearly fulfill all these three demands if there will be a chance of acceptance and success.

The overview of a system is in a way the most basic assumption that must be fulfilled when developing a system. If you cannot have an overview of the system and thus the organization the system is affecting, the work and purpose of using the system will not be reached.

The consciousness among the users and other participants that have an interest in the system, means to understand what the system is doing and what role it plays. The consciousness also helps identifying and facilitating the work of handling problems that can arise when using the system.

As to the meaningfulness, the users must see the use of it all, and not be left with the question 'what's in it for me?'. If the information system seems to be badly constructed, not saying that it is, the users will most likely use the system less and thus the organization as a whole will underperform. Here it is clearly the role of the designer to create a system that the users perceive as meaningful and useful in their work.

3.11 End of the chapter of theory

We have now created a theoretical framework that lies as a basis for analyzing the result, which we will look at in the coming chapter. The theories and research we have been looking at also constitutes a foundation for our final model and conclusion. In the next chapter we will look at the empirical findings during the time we spent in the project of VADIS-NG.

4. Empirical findings

In this section of the thesis we will give an account of the work and observations we conducted at VCCS. As our presence at Volvo can truly be described as participant observers (see chapter 2) the material being presented below is a mix of interviews, informal talks, meetings that we participated in and information found on the VCCS intranet. The purpose in this chapter is to give a clear picture of the structural and procedural work that was being undertaken in order to secure the launch of VADIS2004, and also the reflections made by the employees surrounding this work. To protect the integrity of the project members, the quotations in this chapter are anonymous.

4.1 Objectives leading to VADIS2004

In the year 2000 it was decided that a project work group called VADIS Next Generation would develop a system called VADIS2004 that would replace the current VADIS in the year of 2004. To get a picture of why VADIS2004 is being developed and how the reasons supporting this development affect the aftersales market for Volvo, we will now illustrate how different demands led VCCS to start developing VADIS2004. Also, the main objectives that led to the development of this new system will be described.

VADIS2004 comprises all of the services that are available in today's VADIS as well as new market requested services. As one of the project members stated:

“One of the most obvious reasons [of building VADIS2004] is that the current support and leasing contracts expires in mid 2004. There are also more reasons to build a new system. Today's system was built to support one type of users, and that's the technician at the authorized repair shops. We know who they are, they are a limited number. Today, we know that we have a need to meet other kinds of customers and target groups. Another reason is that VADIS is an old system that is getting more and more expensive to maintain. It also gets trickier to update the system smoothly.”

First of all, the main purpose for the old VADIS was to support the authorized dealership in repairing and servicing Volvo cars. The VADIS was developed as a PC-based information system providing service and parts information, as well as diagnostic fault tracing and software download. VADIS was the first integrated diagnostic IT-system in the automotive industry, when it was first being planned for in 1995. Due to the advanced construction, including the electronic equipment of the cars being produced today VADIS can be said to be a mandatory tool for the dealers. Of course, simpler reparations can still be conducted without the use of VADIS, but these reparations are very limited and clearly not enough for all possible problems and faults that can arise with a car.

VADIS is mainly used in the repair shops when repairing cars. The service information is a digital repair manual and contains text, photos and illustrations. The spare parts catalogue consists of parts, parts numbers and illustrations of these parts and how they fit together. This information is presented on DVD's, distributed by VCCS. The diagnostic functions via vehicle communication read and erase fault codes, read parameter values, program parameters and run routines. VADIS also provides the workshops with guided fault tracing in electrical system to find fault codes and other symptoms.

All new cars beginning with year model 1999, contain a hardware control unit that must be loaded with software in order to work. This software is downloaded to the car at the assembly plant as well as at workshops (via VADIS). The purpose of this initial software downloads is to restore functionality, install electrical accessories and to provide the car with necessary or desired upgrades. To sum up this brief description of VADIS, we conclude the following about the main properties of VADIS.

Main properties of VADIS:

- Thick client: VADIS application software on each VADIS cart
- Mostly offline, sometimes online
- Manual updates
- DVD distribution
- Robust solution
- Difficult/impossible to customize for different users
- Available in 17 different languages



Figure 4.3 VADIS at a repair shop.

VADIS provides service and parts information, as well as diagnostic fault tracing and software download. But the problems that has arisen and most of all is estimated to arise in the near future, includes the following main things:

Main problem issues with current VADIS:

- Too long lead-time from VCCS to market for VADIS-related deliveries
- It will be difficult or impossible to meet requirements from future car projects with today's VADIS
- It will be difficult or impossible to meet future legislation (e.g. ABE)
- It is difficult or impossible to significantly prolong usage of today's VADIS

As the software in the cars becomes more and more sophisticated, the demands of the diagnostic system and fault tracing also increase. This means updates become necessary more often and that the service costs increase. The operating costs are increasing as a means of the way VADIS was programmed.

There are also new legal regulations at interstate level that has pushed towards the development of VADIS2004. The new Automotive Block Exemption (ABE) issued by the EU Commission in the year of 2002 brings a lot of changes into Volvo. The main objective with ABE is to strengthen the customer's position by opening up for more intra-brand and cross-border competition. In practice ABE means extended obligation to allow independent operators and repair shops access to technical information, tools and training.

"The new law says that independent [repair shops] must only pay for what he wants to get. There is a clear demand that [the things] we offer must be proportionate against what he needs."

In practice this means that manufacturers must make available all the technical information, diagnostic equipment, software, tools and training necessary to carry out repairs on any car model. Access must be allowed not only to independent operators and repair shops, but to automobile clubs, roadside assistance operators or any other operator involved in repair, training or technical assistance. The manufacturers must not charge independent repairers for information, tools etc, in any discriminate way in favor of authorized repairers.

When it comes to VADIS2004, one project member put it like this:

"This means that we are not allowed to charge for the full package if the user only asks for a small portion of it, any support we give to our authorized users must be given to the independents as well etc".

In order to reach the common vision "To be the world's most desired and successful service solution that supports VCC in target Customer Satisfaction no. 1" the legislation creates new demands on VCCS. This is the overall vision for VADIS2004. Another all-embracing statement that defines how these members should work in order to achieve this vision is found on the VADIS-NG intranet site and in presentation material: "Developing and delivering world class innovative, user friendly, and flexible products, services and processes to our customers". This guideline sets high expectations on the system, and also on the members of the project.

“If I put it like this[...], the new legal demands implies not only that we must provide information to anyone who asks for it but also that our parts suppliers, the ones who produce our Volvo spare parts, have the right to sell that exact same part under their own label.”

In practice this will mean that these parts producers and suppliers will be able to sell the same parts as Volvo does, it is thus the same supplier and the same production process. This implies new demands on VCCS i.e. in terms of offering a package-solution with logistics, in order to keep their position as supplier no. 1. Three overall goals within VCCS are to reach high *customer satisfaction*, *profitable growth*, and *quality* in all services and product related to the business of VCCS. Therefore these guidelines can also be said to be valid for VADIS2004.

To reach quality, the abovementioned goals within the customer satisfaction-target are for the VADIS2004 to:

- Significantly decrease distribution lead-time
- A flexible and Sales Companies scalable solution
- Enable minimized lead-time in workshop
- Positive impact on FRFT (=Fix Right First Time. A car should be fixed the first time it enters a repair shop)

As to the profitable growth-target, the objectives are to:

- Support new business concepts
- Fulfil future legal demands
- Support new service channels

These objectives depend in turn on the business objectives that are set for the product. Generally we could conclude that there were no objectives to increase returns by the release of VADIS2004, according to one project member who stated:

“In the business case as it is today the pricing is set for what is needed for the project to reach break-even. The question is then if we should proceed and sell it even cheaper. This is at least nothing that we talk about centrally in VCCS. There might be Sales Companies and markets that subsidize. In some countries VADIS is today’s is almost for free, included in a package with other services to the repair shops.”

During our study, there was no formal guideline whether the business objectives should be to actually make money on the selling and distribution of VADIS2004, or to see it as an integrated service. As with a lot of products and services within VCCS, the Sales Companies around the world are pretty free to market and price products from VCCS as they please.

4.2 Customer focus

Following the goal of VCCS to be "...the world's most desired and successful service solution that supports VCC in target Customer Satisfaction no. 1" we tried to determine what was actually done for obtaining this goal. In the customer focus point of view three main activities were found, namely *Market Concept Reviews*, *Repair Shop Studies* and *Reference Group Meetings*.

Market Concept Reviews. During Q1 and Q2 2002 project members visited Sales Region offices around the world. The purpose was to ensure the exchange of information, knowledge and experience from different regions and their markets, necessary for the project plan of VADIS2004. In order to get a picture of how different Sales Regions might diverge, workshops were arranged during these visits that resulted in a massive requirements specification document. With VADIS2004, the goal for VCCS was to be able to customize the content of the product for different needs and different users and also provide independent operators with VADIS2004-services. To define local needs, business opportunities and policies in general, the project put together a work group consisting Business Developers and Managers at Sales Company level. The first meeting took place in December 2002.

Repair shop studies. In order to assure that VADIS2004 met the demands of the end-users and their work practice, project members responsible for end-user issues conducted repair shop studies between June and September 2002. The studies involved several repair shops in Sweden and UK, both authorized and independent. The result was then used to develop and assess requirements of VADIS2004. One statement of an end-user from these studies was:

"The time spent on diagnostics increases gradually. Fewer problems occur, but those cars with problems are often very difficult. There are cars the workshops cannot resolve, which means badwill."

Reference Group Meetings. One way of continually getting feedback and to create common agreements is to have reference group meetings. The participators are representatives from Sales Regions and project members of VADIS-NG. The meetings are held with the purpose of getting user confirmation that the project is on the right track. In turn this means that the users have a possibility to assure themselves that they have turned their previous input into acceptable requirements.

"The purpose is partly to inform about what we are doing for the moment and of course to get input and feedback about this. To feel that we are on the right track." says one project member who participated in the December 2002 meeting.

"They [dealers] are very eager [to participate]. Sometimes small Sales Companies might say that they don't have enough resources for sending people to Sweden, but that they understand what they are missing out on and therefore relying on what's good for i.e. USA is good enough for us. They then keep informed in other ways [than direct participation]. But it has never been hard to get them to realize the importance of reference group meetings, quite the contrary."

4.3 Previous System Launch – TIE

Even though the rollout of VADIS2004 includes a great scope of activities and features connected to the system and the rollout, it was not the first time it was being done at VCCS. One of the most recent system rollouts that had been done at VCCS was a system called TIE –Technical Information Exchange. TIE is also being used around the world, being of great importance both for VCCS, Sales Companies and workshops for enhancing technical knowledge about the cars being repaired and the procedures around repair work.

The knowledge about how the TIE rollout was being conducted was partly taken care of when working with VADIS2004. As a couple of VADIS2004 project members also were working with TIE, their knowledge and experience with this recent system launch was seen as very valuable. To get a picture of the relevance in re-using TIE-knowledge in the VADIS2004-project, we will now give a brief description of TIE and how the work with rollout was being done.

TIE is a web-based application including three former reporting systems and includes reports about

- product information
- tools information
- service / parts information

The procedure of using TIE is shown below. The arrows represent the above three kinds of reports and issues that are being communicated. Mostly, questions and issues are being resolved at Sales Company level, therefore the communication is most intense between Dealers / Repair shops and the Sales Company. If there are complicated issues that cannot be handled by the Sales Company, or that there are many reports treating the same issue, the case is being sent to VCCS and its special departments that in turn create general information going out to the market again. The technical journals going out to Sales Companies around the world are being written in English and must thus be translated into the local language by the concerned Sales Company.



Figure 4.1 Reports and information overview for TIE

To be able to understand how the work around the TIE rollout was being conducted, we will now show the procedure and planning used in the TIE project. To test the system, three

pilot versions were being used where the first one was merely to test functionality and the second and third one including more and more functions and final user interface. This incremental testing of the pilot versions allowed the TIE project to include more and more users as the more advanced the versions became. This to get the most complete picture as possible of how the system was working out in different markets. The pilot sites were the following, representing 4 out of a total of 8 Sales Regions: Rockleigh, (USA) – Daventry (UK) – Born (Holland) – Bologna (Italy) – Göteborg (Sweden). In the last box furthest down - “Start rollout” – two markets were chosen to be the first ones, namely Sweden and USA, then tightly followed by other markets.

Following the increments, the TIE rollout plan looked like the following:

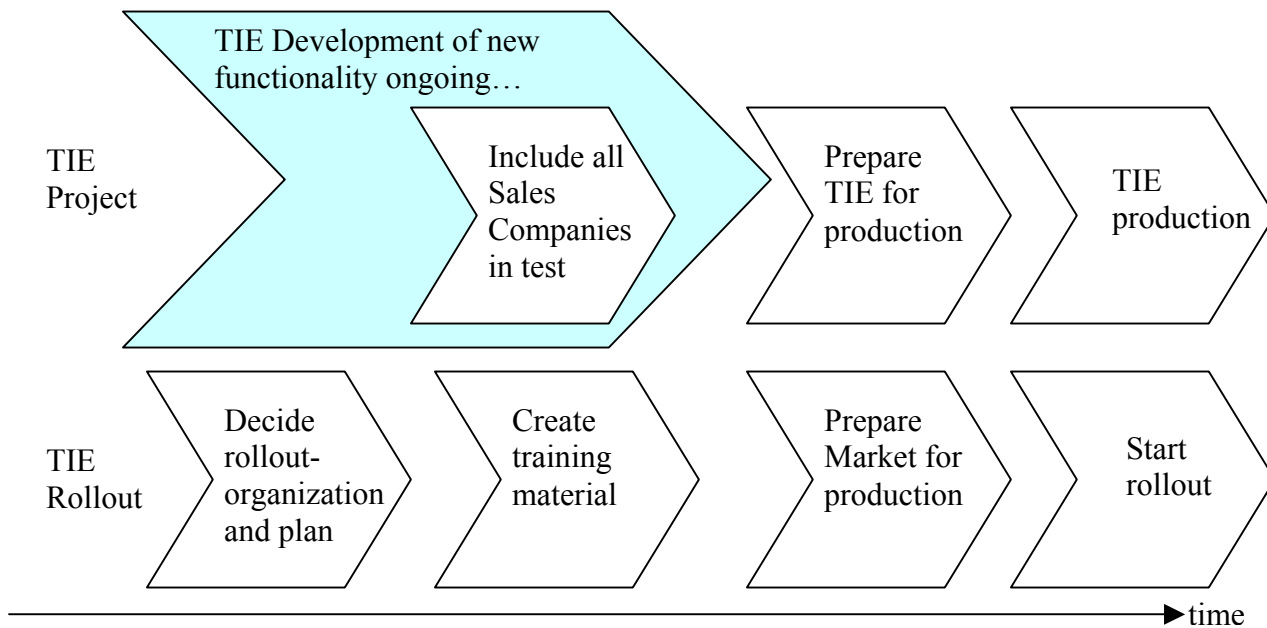


Figure 4.2 TIE rollout plan

During the tests, the users representing Sales Regions, Sales Companies and dealers were being asked to create a list of issues concerning the parts of the system they were testing. These lists of issues were then collected by Sales Region representatives and presented at the reference group meeting held in at VCCS in Gothenburg. The lists of issues contained remarks of bugs, proposals of changes in the function of TIE and also more formal wishes of what they wanted to see included in the system if possible. If we look at the box “Decide rollout organization and plan”, this includes deciding the roles necessary both at VCCS and at the Sales Regions and Sales Companies. A list of recommended roles were being sent out to the Sales Regions, and it was then up the Sales Regions to delegate and coordinate necessary roles and also to create an action plan for the testing and rollout of TIE.

The following aspects of the TIE rollout were stressed by former members of TIE as the most critical factors in the launch-process:

- Translation of training material from English to other languages
- Which countries that are chosen for testing – the user groups must represent the largest part possible of the total number of end-users. This includes different countries and different kinds of users such as more and less experienced mechanics
- To fully support the users during testing. That is, the project members developing the system must be available and fast to respond incoming questions and issues
- Correct and complete information to Sales Regions and Sales Companies about required HW / SW that must be used in order to fully use the system or specific applications. Also, a careful review of what the system's infrastructure looks like.
- Thorough feasibility study must be made. This includes interviews and meetings with Sales Region and Sales Company responsible.

4.4 VADIS2004 –system overview

Figure 4.4 shows the overview infrastructure of VADIS2004. This figure points out the different possibilities that dealers can use to access the Internet/Extranet and thus administrate the cars.

- 1) Normal web access. All that is required is a browser and a fast enough Internet connection; to be able to reach the access server over the internet where Volvo parts catalogue and software are situated.
- 2) Access to VADIS2004 services via LAN Access servers installed and administrated in repair shops and at Volvo car dealers.
- 3) Thin client and access server installed on a Laptop or other computer equipment.
- 4) Optional is to use a DVD in order to reach the parts catalogue. Distribution of updates of the system is also done via DVD.

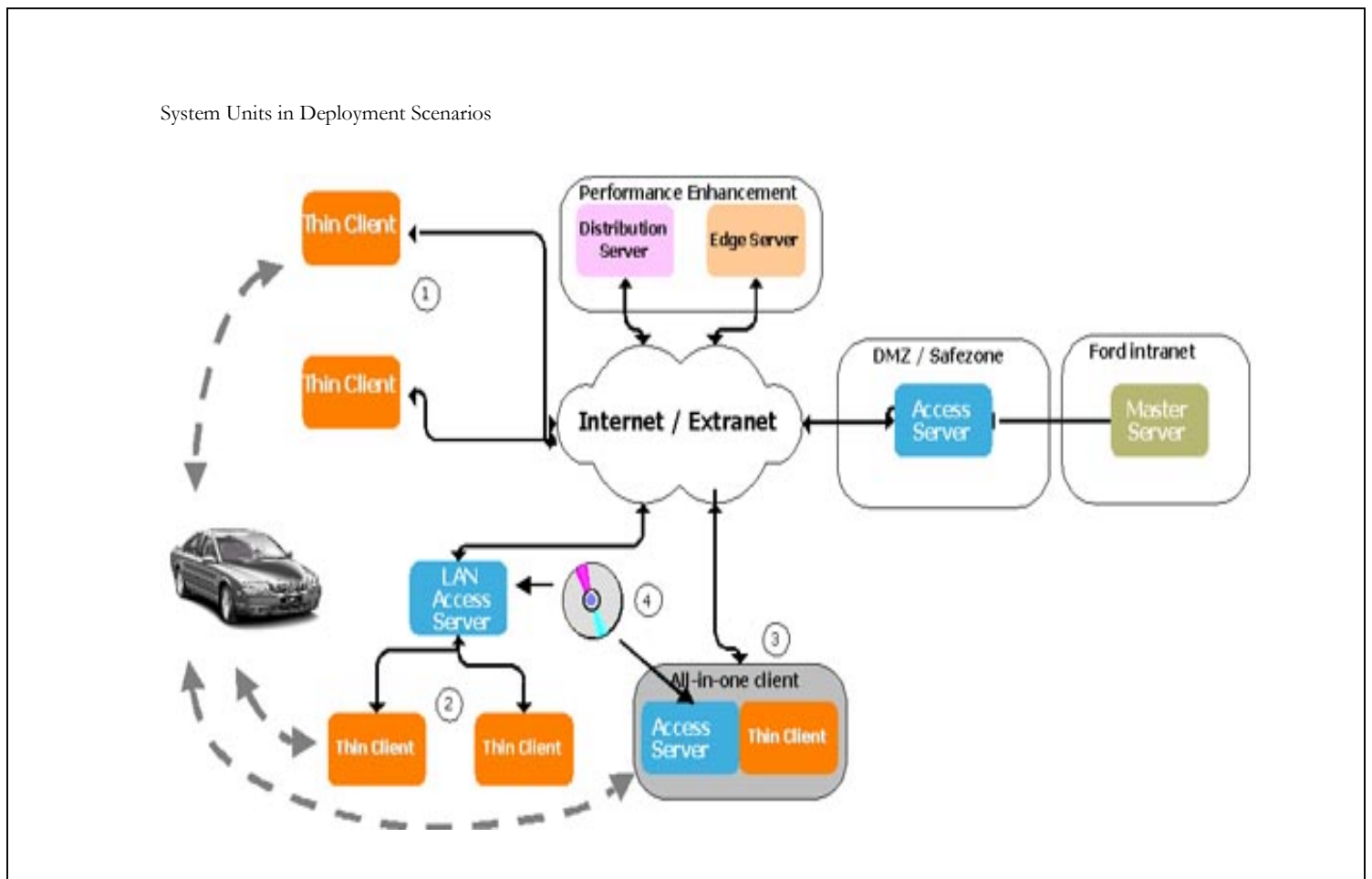


Figure 4.4 Overview of the infrastructure of VADIS 2004

4.5 Launch of VADIS2004

The launch plans of VADIS2004 were initially being thought of in the introductory phase of the project and are ongoing until the rollout of the system is finished. The line organization was then intended to take over the responsibility of VADIS2004. The launch manager of VADIS2004 was responsible for coordinating all activities that were of importance for the launch. The reason for that was the importance of clarifying all risks and demands that could affect the launch plan negatively if they were not been taking care of in a proper way. The appointment of the role “Launch-manager” was not being done in the introductory phase of VADIS-NG. How this might have affected the project will be discussed in the chapter 5 (Discussion).

To be able to find all these risks and demands, it was important for the launch manager to map all activities and clarify who were to be responsible for what. This means both activities and roles inside the project and on the market (including Sales Regions and Sales Companies).

Mapping these activities are also important for the timeframe of the project. Some of the activities cannot start before others are finished. Therefore it is very important that the launch manager have the ability to coordinate all activities in order to make a sound timeframe.

There are no templates or systems in the VADIS-NG project that can help the launch manager to carry out the launch of VADIS2004. Therefore the launch work is dependent on instructions and help from people in the project that have experience from earlier launches. As one responsible in the project says about reusing knowledge from earlier system launches:

“There is no system for that. There are two recent launches that are of current interest for us. The reporting system TIE and before that the physical launch when we changed the entire hardware in today’s VADIS carts. But we don’t have any system for reusing knowledge. The thing is that launches are very complicated. There are some holes that are impossible to avoid, the only thing you can do is to drive down in them and up again.”

VADIS-NG definition of launch

To be able to further design and coordinate the activities affecting the launch, a definition what the term launch is could be appropriate. The definition found at VADIS-NG was the following:

Launch is the total scope of activities from Elaboration and onwards in co-operation with the Sales Regions and Sales Companies.

From this definition it then had to be decided what areas that were included in the launch scope before any further actions were possible. These areas were the ones listed below.

- Sales Region test
- Pilot
- Roll out
- Training

- Support
- Market Communication

These areas will be explored later on in this chapter, as the substance and relevance of the areas are interconnected with the mapping of launch related activities.

4.5 Timeplan for VADIS-NG

This is the official master timeplan for the whole VADIS-NG project. To coordinate activities within the whole VADIS-NG project a Master timeplan was carried out. It shows in which quarter of which year the activities should be done (figure 4.5). Unofficially the team members were talking about that this timeline was about three to six months delayed, this during the time we spent on the project. According to the launch team members it was very difficult to make a fully sound timeframe for launch activities because almost every activity is depending on each other. This means that some of them could not start before others were finished or well defined. Generally, the question of time delay in the project was due to how the original product specification was going to be altered or not.

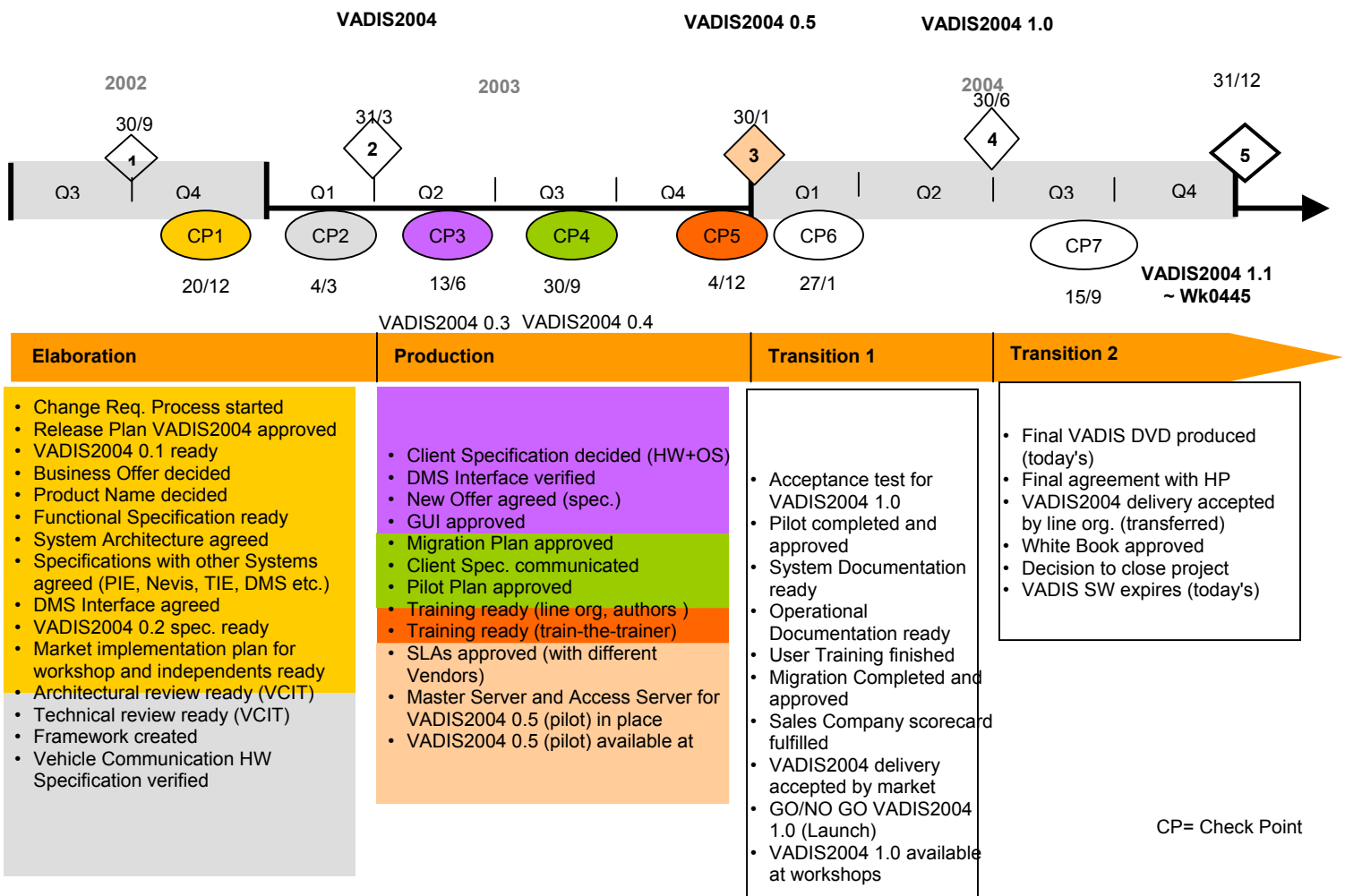


Figure 4.5 Master timeplan for the VADIS-NG Project, created December 2002

4.6 Mapping project Launch

One of the most important parts in planning the launch was to map all activities concerning the launch of VADIS2004. This mapping activity started off as 'brainstorming' at a meeting and soon grew into one of the crucial steps in the launch work. Connected to this mapping was to bring forward roles to be appointed. These roles were to be connected to certain responsibilities, and were discussed and decided incrementally at several meetings and briefings. At one of the first meetings we attended the following question arose, giving us the apprehension that not much was predefined and a lot of work was to be done in planning the launch.

What roles are we to define and how should they be appointed?

Following this question, the work with defining, identifying and appointing crucial roles began. The launch team was responsible for this task and of listing the relevant roles. Several 'brainstorming' meetings were held where issues and activities that possibly had a connection to the launch were mapped on a conceptual plan. When this had been done the model was presented in a meeting where the entire crew of sub project leaders were present. The purpose was to verify the relevance of the surrounding activities, as the other sub-project leaders were connected to these activities as well. The reason for that was the importance of getting an opinion from all the other sub project leaders about what was missing and what should be added.

All activities that were found were placed in the model much like the one shown below in Figure 4.6. In the first meeting there were a few small changes of the model. To be sure that all activities were found and correctly mapped, the same model was presented in the next sub project leader meeting two weeks later for a last opinion. The final result from these meetings is shown in Figure 4.6. The activities written in bold were the ones where there was an immediate need for appointing Sales Region responsible.

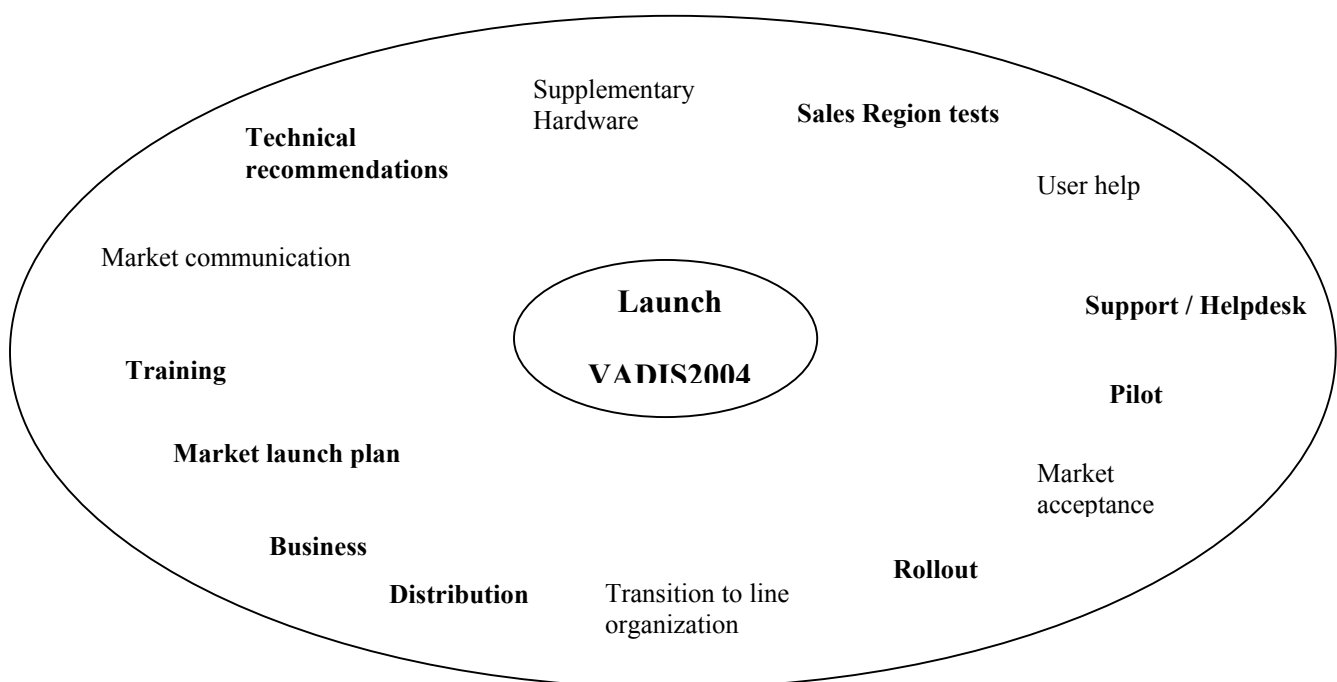


Figure 4.6 Mapping the launch of VADIS2004

4.6.1 Launch activities

In the model above all activities found that were of importance for team Launch were mapped. Now it was time to review these activities. It is important to understand that the role for team Launch is first and foremost to have an overview over these activities so they can be coordinated and fit into the timeframe for the project as a whole. The role for team Launch was not to be responsible for the development of each activity, but to see to that these activities were taken care of in time in order to do a proper launch.

SR – tests

An early release of the system, e.g. Version 0.3 – 0.4 of VADIS2004 shall be tested on a test team at Sales Region level. The purpose with these tests is to get feedback from the Sales Regions and Sales Companies about system functionalities. The system will be updated according to the feedback given by Sales Regions and Sales Companies.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Plan for and create a test team, and give feedback to the VADIS-NG project

User help

The launch team needed to know how the interactive help function in the system would perform, and what would be the different tasks of the help function. If the interactive help function is not enough to guide the end users about how the system works there will also be need for developing help manuals. This is more important than it sounds because if manuals are necessary they have to be translated to seventeen languages. Except this interactive user help manuals with instructions for installation and system access have to be made. Before the pilot tests can start the work with this type of user help has to be finished.

Support

To be able to support the authorized workshops during the rollout the GDST (Global Dealer Support Team) and Sales Companies, helpdesk staff must be trained so they are able to take over the support roll of VADIS2004. This support training will be aimed to handle questions from workshops about system specific questions. This is true for both the test versions, Pilots and when the complete product is running. One project member concluded in one discussion about the support function:

“Before the Pilot version, the Sales Companies involved must be well prepared in order to give accurate support. They must know the product”

If Sales Companies helpdesk cannot answer questions from workshops they shall contact GDST for help to answer this questions. If GDST is not able to answer the questions they can contact the back office for support questions. During the training and test period (Pilots

and SR test) the VADIS-NG team has to support the workshops with system instructions if necessary.

According to team members in the VADIS-NG project it is very likely that workshops will have performance problem with the access to the VADIS-NG system. This is foremost due to the poor infrastructure and bandwidth at many user sites.

"I say that there is no risk for problems with the performance. It's a matter of fact that it will be too poor in many workshops."

According to team members this problem was well known and thus they actively worked with this issue.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Appoint responsible at Sales Company level for:
 - general helpdesk questions *and*
 - IT specific questions concerning browser issues (i.e. installation)
- Arrange for training of helpdesk staff

Pilot

The Pilot will be tested in a number of authorized workshops to evaluate how it works in reality. The tests will run in full scale in chosen workshops, which means that every functional part of the system will be tested. The Pilot shall have the functionality according to the release plan. This means that the Pilot shall have the same functionality as the finished system that will be launched to the rest of the authorized workshops around the world.

"Basically we want the release 0.5 to be fully functional and also be of relatively high quality so that a repair-shop will be able to use this one in their daily work, and shut down the existing VADIS"

To get relevant feedback from the Pilot it is important to run the tests in workshops with different working conditions, computer hardware, economical prerequisites and so on.

"The Pilot will gradually be rolled out. For example first one in Sweden, two in England and then up to about ten sites all together. These ten must be placed at sites of different markets, sizes, customer volumes, infrastructure and so on in order to get a broad test group."

The plan is to run this Pilot during two months. During this time programmers will update the release in pace of feedback from the Pilot test. The VADIS-NG team will give the Pilot test their full support during this period.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Appoint at Sales companies level which workshops that shall run the pilot

- Make sure that the right workshops is chosen for the pilot (workshops with different condition and infrastructure)
- Give relevant feedback back to VNG from the pilot
- Inform chosen pilot workshops about:
 - How long the pilot shall be going on
 - Needed equipment to run the pilot
 - Support during the pilot
 - Release notes
 - Education about VADIS2004
 - General Pilot questions

Market acceptance

Before the rollout of VADIS2004 can start, Sales Regions, Sales Companies and VCCS have to give their acceptance for the rollout to start or not. This acceptance will ensure that all parts are satisfied and prepared for the rollout of VADIS2004.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Decide on whether all activities are properly done in order to do the actual rollout

Rollout

When the VADIS-NG team can assure full quality of VADIS2004 version 1.0 the system is ready for rollout. To reach this point the system has to have been quality assured through updates from earlier tests and pilots. All the markets must thus accept the rollout.

“We will not have a big bang roll-out, but an incremental one.”

According to team members the rollout is a very critical issue because it is here the control over the project starts to be complicated. As long as the system runs within the VADIS-NG team, the project members have control over the problems. But when the rollout starts, other people, nationalities, time-zones and cultures are involved, which complicate things as sure as anything:

“It’s almost like pushing a button and hoping that it turns out well, and just wait for the phone to ring and hear them saying that it didn’t work. That’s a fact.”

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Make sure that every role at Sales Companies level are ready for Rollout
- Inform Sales Companies about:
 - How, when and where the Rollout shall be carried out
 - Needed equipment for workshops to run VADIS2004

- Explain what guarantees are given about the quality of VADIS2004

Transition to line organization

When the rollout is finished it is time for the line organization to take over the operation of VADIS2004. This course of action is about how the transition to the line will take place and what is needed for a successful handover of VADIS2004.

Distribution

Workshops that have performance problem can use DVD instead of the online system to reach the parts catalogue with car information. This means that the DVD has to be distributed to these workshops. The same distribution concerns have to be taken care of if paper manuals will be developed and used in the workshops. This concerns distribution and management of DVD's, applications and paper manuals.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Manage and coordinate the distribution towards dealers and repair shops

Business

As the actual application of VADIS2004 will be available in different packages, this subscription must be handled by the business responsible within the project. The dealers shall have the possibility to choose what functionality they have needs for in the VADIS2004 system. This means that the business team has to give dealers different costs offers.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Appoint business responsible at Sales Company level
- Inform Sales Companies about different VADIS2004 packages in terms of cost alternatives
- Inform Sales Companies about general business questions

Market launch plan

This plan was under construction when we left VADIS-NG. The content of the plan aimed at giving specifications about how and when the launch towards dealers and repair shops should be done. Also, what kind of feedback that should be reported to VCCS. The Market launch plan was intended to be developed together with representatives from Sales Regions.

Training

When the rollout starts the workshops need to have knowledge about how the VADIS2004 works so that they are familiar how to repair Volvo cars with this new tool. To train all the people in the workshops around the world in Gothenburg is too costly and the time for that is limited. Instead the VADIS-NG project will arrange a procedure they call 'Train the Trainer' (TTT). This means that people from the Sales Companies will be trained at Volvo in Gothenburg about the functions of VADIS2004 and how the system works. It is the Sales Companies turn to train the users they are domestically (or internationally) responsible for.

To complement this training, online computer based training will be arranged to improve the training possibilities. This as the work with training is an ongoing activity and also a question of costs for the repair shops and Sales Companies.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Appoint responsible at Sales Company level
- Inform about:
 - complementary CBT
 - user manuals
 - helpdesk
 - general training questions
- Coordinate persons from Sales Company level that are going to TTT in Gothenburg
- Make sure that planning is done at Sales Company level for when and how the training is due for repair workers and dealers

Market communication

The market communication is the external communication part of the project where Sales Companies and their actual customers, e.g. authorized workshops get information about how VADIS2004 will affect the workshops. This communication is also important to get input from workshops to project and product design/functions of VADIS2004. The market communication started early in the project and will continue until the launch period is finished. Examples of communication activities are: reference group meetings, newsletter, PowerPoint presentations and printed handouts. The product name VADIS2004 will be used until the product is on the market with the real commercial product name.

Technical recommendations

Under the development of VADIS2004 it is very important to communicate with Sales Region and Sales Companies of what kind of technical hardware and infrastructure that are necessary for a successful access to the VADIS2004 system.

"The specification of hardware must be finished in April this year. This because Volvo dealers must apply for money in June for the coming budget year."

Workshops around the world have different types of conditions, which mean that these recommendations have to be adjusted to fit different kinds of workshops. Before the rollout can start these recommendations have to be clear for the market, otherwise there will be large performance problems for many of the workshops.

Market issues and responsibilities. The Sales Region Roll-out Coordinator is responsible for the points below.

- Inform Sales Companies about
 - infrastructure and computer hardware demands and alternatives (all-in-one-client, LAN-access server, bandwidth etc)
 - installation procedures
 - investigate possibilities for contracting common supplier of hardware and Internet

Supplementary HW

When using the VADIS (and VADIS2004) at the repair shops, some hardware is needed when connecting the VADIS computer to the car. This hardware contains of a cable connected to a communication box in the car. This communication device must probably be altered and modified with the new VADIS2004. Therefore this issue needs to be taken care of in the launch process.

4.7 Timeplan for sub project Launch

During the mapping activity this timeplan was also done. The importance with this timeplan is to clarify when these activities should be done. Some of these activities were highly depending on each other and therefore must be coordinated if any delays were to occur. The grey areas in the figure are timeframes for a certain activity and the squares represent when an activity should be finished. Each square in the table represents a month.

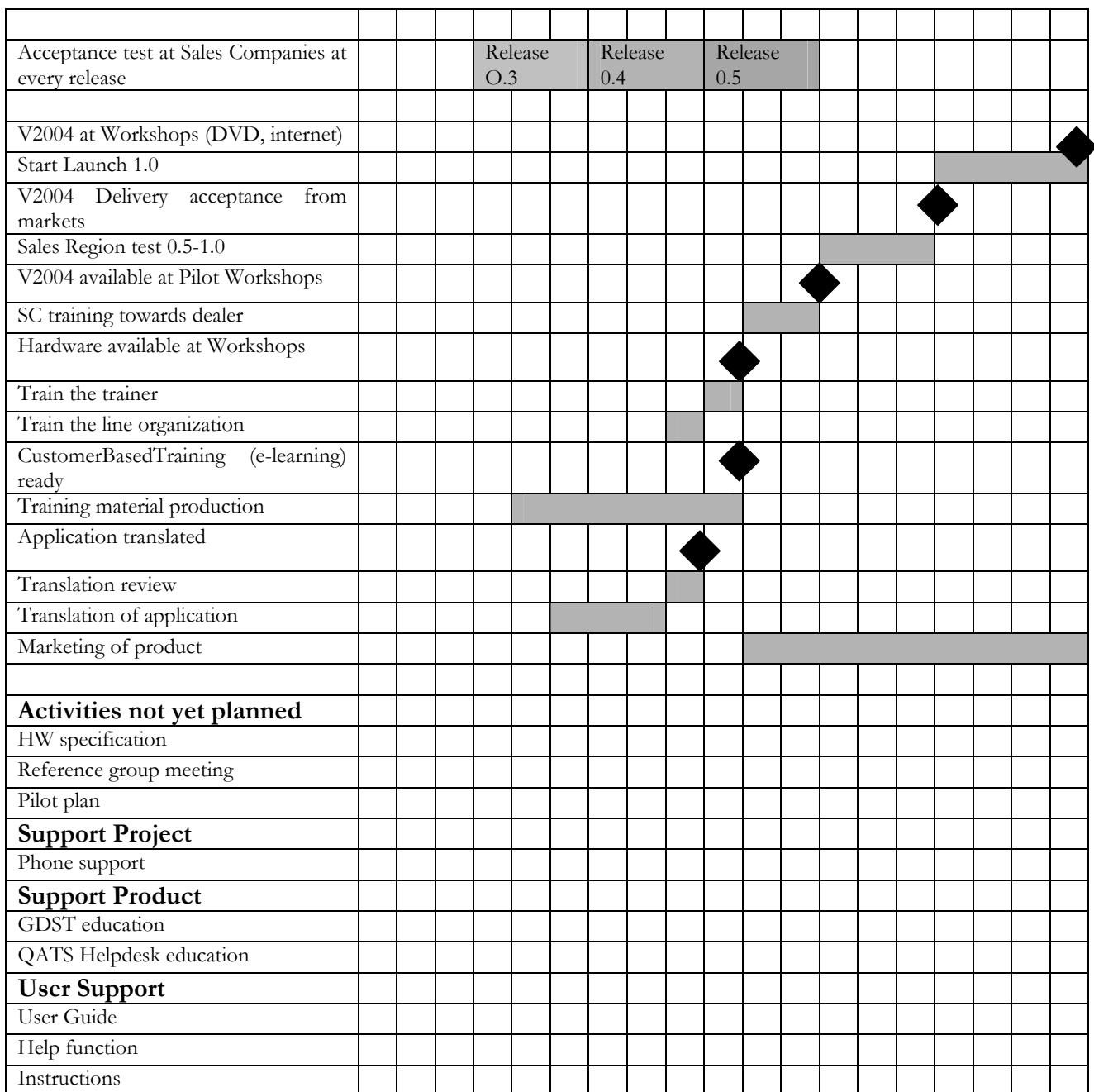


Figure 4.6 Timeplan for the launch of VADIS2004

4.8 Launch risklist

“The experience and appreciation of the users is decisive if we’re going to make it. It is actually a risk that they [the users] might have too high expectations.”

One of the most important issues when working with planning the launch of VADIS2004, was to identify all relevant risks that in one way or another could affect the outcome and acceptance of VADIS2004. During and after the Market Concept Reviews the working members of project VADIS-NG summarized the outspoken risks from Sales Regional level around the world. These external concerns were then divided into subgroups, where those regarding launch activities were as follows:

- ...lack of acceptance regarding launch of the project: training, time plan, finance and acceptance from dealers
- ...that the support for all users (e.g. independent) is not sufficient
- ...that sufficient supplier support HW/SW is not available
- ...that training is not on time
- ...that the Sales Companies don’t have enough manpower
- ...that the functional Pilot is too late
- ...that the migration from VADIS to VADIS2004 will be problematic
- ...that Sales Companies will not get activity plans from the project regarding:
 - Local IT
 - Helpdesk
 - Training.

As we could see, these concerns were quite general, non the less very important to take into consideration. But to be able to actively work with these outspoken risks, project members of VADIS-NG had this risklist as a starting point when fine tuning and zeroing down on the risks. In this work it was included to bring forward two types of risklists: one for the *project as a whole*, and one for *each sub-project such as Launch*.

The work with bringing forward these risklists was done incrementally, where the Market risklist was the first one. During several meetings within sub-project team Launch, audits were done in order to either strike off a certain risk or move it to the more all encompassing risklist for the project as a whole.

The risks that were then left, were given *impact* and *probability* ratings, along with *possible action*, *responsible* and *date of issue*. When we left the VADIS-NG project, the list looked like the one above (figure 4.6). We were part of bringing forward this risklist. In this thesis we have left out the more general risklist concerning the whole project, as those risks were not part of our domain and fieldwork.

During our time within the VADIS-NG project, much of the concerns that were defined in the risklists were under discussion most of the time. The team members were clearly aware of these concerns and steering their work to eliminate them or at least be able to control the outcomes of them. One project team member put it like this:

"One obvious risk concerning the product is of course the performance, when we're talking about thin client and stuff like that. Then everybody is afraid that it [the system] will run too slowly. And they're right about that it is a risk if we cannot handle the technical solutions we are suggesting. You just have to try to inform [the market] as clearly as possible about what we can guarantee and not, in order to handle this whole situation best possible."

In other words there was always a question of balancing the information about the system and its capabilities, the information had to be realistic and adapted to the different recipients. The risklist for the launch looked like the one below (figure 4.7) when we left the VADIS-NG project. The impact and the probability ratings could be between the ratings 1 – 3, where maximum was 3.

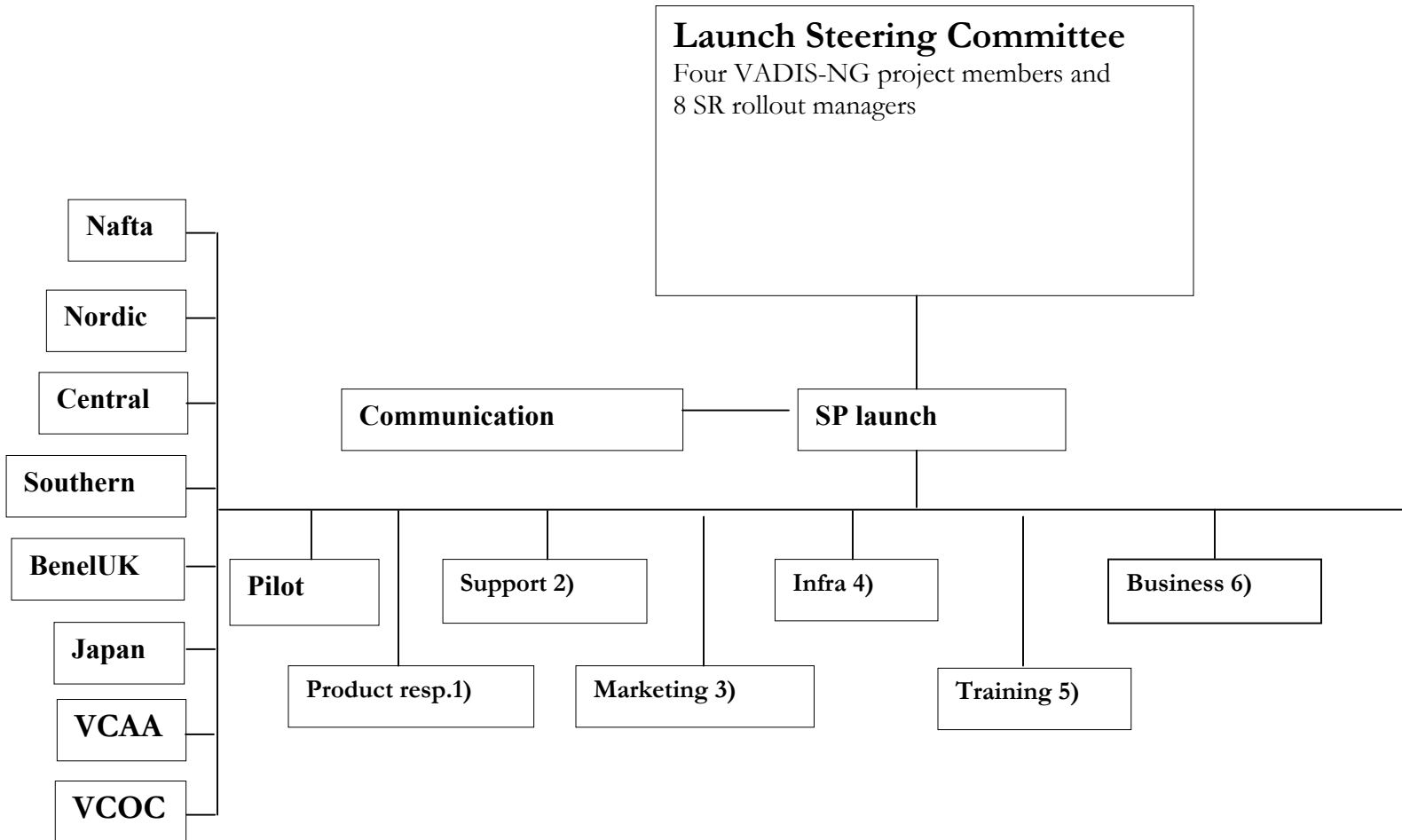
Nr	Risk	Impact	Probability	Action	Responsible	Issue date
1	End-users not able to access helpdesk at all times and get proper information/support	1	1			
2	Bad timing when it comes to training of support staff at GDST and Sales Companies. Then the staff might not be properly prepared when rollout is being conducted.	1	1			
3	Not enough support from VADIS2004 during testing, due to lack of manpower	2	2	Appoint superior responsible for support and sub-responsible, i.e. technical support		
4	The number of test sites are not enough or that they are not representative enough for all end-users. This leads to an incomplete picture of end-users opinions and thoughts.	3	3	Clear specification on relevant issues to measure in tests. Close talks with SR/SC can then help to find the right test sites.		

5	Feedback not taken care of properly by VCCS / Sales Companies	2	1			
6	Trainers at Line organization might misinterpret and/or receive wrongful information given from sub-project leaders	3	1-2	Careful selection of information that is included in documents. What kind of info, how it is presented and updated info.	Sub-project leaders and training responsible at line organizations	
7	Insufficient / non existing Rollout plan	3	1	Update information continuously on website about VADIS2004/Training. Fast response from sub-project leaders for VCCS-trainers to be able to give correct info to training participants		
8	Training participants might pose unexpected questions during training, that VCCS-trainers are not able to answer	3	3			

Figure 4.7 Launch risklist

4.9 Organizational design of the launch

In the planning of how the communication of VADIS2004 should be managed, the following organizational plan was done by team Launch. To the left in figure 4.8 below the 8 different Sales Regions are represented. The boxes on the downside of the horizontal line in figure 4.8 are the areas of responsibility within the project. What roles and responsibilities the Sales Regions should have is being presented in figure 4.9 on the following page.



- 1) V2004 responsible who knows the product
- 2) Will support the markets during Launch
- 3) Depends on which approach VCCS shall have regarding marketing
- 4) Make sure that the infrastructure is in place
- 5) TTT-Train The Trainer
- 6) Price model, Price strategy

Figure 4.8 Launch Organization at VCCS

The most crucial role at Sales Region level when it comes to the rollout is the Rollout coordinator. The responsibility of this person is to appoint the underlying roles in figure 4.9 below. This could mean 6 different persons, or the same person could handle several roles. That is up to the Sales Region coordinator to decide, depending on staff resources and the size of the region and Sales Companies involved.

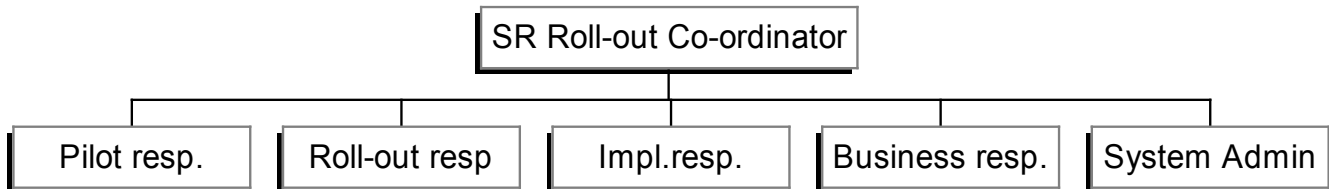


Figure 4.9 Organizational launch design for Sales Regions

With this organizational launch design as a starting point with the probable roles to be appointed, the next step was to bring forward issues that were to be handled by Sales Region Coordinator at each Sales Region. This work started off with a meeting where some members of the VADIS-NG project were present. During the meeting all issues and questions that could be thought of as being relevant to Sales Region Roll-out coordinators *and* repair shop workers were being thought of. These issues and questions were then placed into different categories, much like the work with mapping project Launch. But the big difference was of course that in the earlier activity mapping, the point was to see it from the project's view. Now, focus was on identifying and clarifying what these Sales Region Roll-out coordinators were to be responsible for, and what issues were to be included in their assignment.

4.10 End of the chapter of empirical findings

Although we took part of the work being done in team Launch, we obviously did see neither the result nor the end of several ongoing tasks within project VADIS-NG. This was simply a matter of fact and one of the limitations of doing a time-limited case study like the one we did. The empirical findings in our thesis was clearly a snap-shot of the reality at VADIS-NG, and this close-up observation led us to the following discussion in chapter 5.

5. Discussion

We have now reached the chapter where we will discuss and analyze the Empirical findings (chapter 4) in the light of the theories and models examined under Theory (chapter 3). In the purpose of the thesis, we declared that we aimed to create a better understanding of the critical issues when launching an IT-system, and the launch process itself from a qualitative point of view. As we have seen, the area of launch was not very easily defined. The use of several different points of views was necessary to get a clear picture of the case we were studying and took part in at VCCS. The subchapters in the Theory (chapter 3) all correlate differently to the empirical findings, which we will show in this chapter.

One part of the vision of VADIS2004 was to create new business opportunities. After talking with project members we could conclude that the rollout was going to be focused on the existing authorized dealers and repair shops, and no one else.

During our work within VADIS-NG, our knowledge about what launch work really is about grew stronger all the time. One of the most obvious things we discovered was the simplistic view of launch management many of the articles and other sources of literature had. Of course, a quite common goal of theories and models is to produce generic models in a certain area, which creates certain drawbacks. Firstly, these generic models are often said to be valid for a wide range of products or industries, and therefore they (secondly) are not based on qualitative research methods but quantitative ones. Thirdly, there is clearly not enough research, or publications, done about launch management especially regarding IT-systems. Our thesis can therefore be seen as a contribution to exemplifying and illuminating the actual working procedure *and* structure around launch management with a qualitative and close-up method, thus trying to give a more concrete view of the critical parameters concerning the area of launch. In this chapter we will develop a procedural roadmap of how the work of launch management should be carried out as we see it. This model is elaborated from theories and techniques presented in chapter 3 (Theory) together with the empirical findings at VCCS (chapter 4). We will also discuss the steps involved in this model, and why they are placed as they are. The model can therefore be seen as a guideline for launch management in industries that are similar to that of VCCS, regarding organizational and IT-systems structure.

5.1 The procedural work of launch management

The term launch is often connected to the actual commercialization of a product, when it hits the market. Quite naturally then, this event must be prepared in various steps in order to cover and secure all aspects connected to the commercialization. In this section we describe the different steps in a launch process, based on theoretical and empirical findings about how this procedure should look like.

Decide organizational structure for team Launch at project level. The first thing that has to be done in the work of launch management, is to define and specify how the internal work team should look like. The internal roles must be clarified in the initial steps of the whole project of launching a product, otherwise the information gathering and work planning that should be done at this early stage will be much harder to do in a proper and

useful way. We believe that this should have been done even earlier in VADIS-NG than it was. At this stage, the team also has to decide what goals and guidelines that should steer the coming work. An example of the importance of deciding guidelines that we observed was that in the early phase of the project there were some employees that did not had a clear view about independent dealers. Even if those employees are not directly involved in the launch work we believe that it could lead to delays for the project. We believe that it is important that the higher management declare these guidelines so that there are no misconceptions.

To appoint the right person to the right place is a case of getting the correct *professional competence*, thus getting the competence limited to the tasks or areas of responsibility that is connected to the specific profession of that employee (Thomasson, 1993, in Edvardsson et al., 1988). According to Thomasson another relevant aspect of who should do what in the launch team is the *business competence* of the employee; the degree of how well an employee understands the economic situation of the company and also the economic situation as well as other needs of the customer.

Conduct market surveys and inform actors about coming product. After the internal roles in team Launch has been decided, it is useful to do market surveys and Market Concept Reviews, where project members talk to the regional offices around the world. This kind of action is clearly supported by Hallows (1995). In VADIS-NG, these Market Concept Reviews were done before anyone knew who would be the launch manager and what other roles there would be in team Launch. If this had been done first, the information-gathering activities (were among other things a Market risklist was created) could have been more specific concerning launch activities, and this could have facilitated the launch planning. These Market Concept Reviews were not pointed directly to the end-users. Ginzberg (1980) stresses the importance of getting an involvement from as many users as possible in developing an IT-system, and thus we believe that some sort of enquiries to end-users should also have been done. Surveys can fill a purpose although the producing company does not know exactly what the product should look like. This to get an appreciation of what features of the existing products that would preferably be changed, from the users point of view. This kind of action is also supported by Hallows (1995) who states that measuring customer satisfaction proactively can only be done through direct contact with the customers and users. Another proposal is to give Sales Regions and/or Sales Companies the responsibility to enroll this kind of surveys and *then* meet with people from the VADIS-NG project. This information output and surveys are supported by Gultinan (1999) who points out the importance of measuring the customers' needs for the product. He also declares the importance of informing about the relative advantage with the new product. In this case this means the advantage of using VADIS2004 instead of the existing VADIS system. Hallows (1995) mentions that the only way to measure customer satisfaction is to talk to the customer and ask what he thinks. This theory supports our proposal to involve the real customers and users in these kinds of surveys.

Decide features of augmented product and newness to different markets. To create clear and realistic customer expectations through the process of concretizing the characteristics of the product (Edvardsson et al., 1988) is of great importance. By giving feedback on market surveys after deciding what should constitute the product, VCCS would have enhanced the chance of matching the expectations from the users. As a cause of this

not being done at VADIS-NG, we saw an obvious risk that user expectations could be too high or simply focusing on less relevant features. A most relevant question when launching a new product is: New to whom? Gisser (1972) developed a visual model over the newness of a product, where the following three dimensions are stated; product newness to the user, product newness to supplier, market newness to the supplier. This classification was never done at VCCS, but would have been relevant to do. Especially considering the discussion at VADIS-NG about the possibility of reaching new markets and target groups, through the development of VADIS2004. The dimensions of newness could also affect how the training of the new product should be planned and conducted. That is, the training might have to be adjusted to different users considering their experience and knowledge about the product and procedures surrounding it. This classification can be done both for the product itself, and for the launch process. For example what kind of rollouts the Sales Regions have conducted before.

Specify strategic and tactical launch issues. According to Gustafsson (1998), Hultink et al.(1998) the central issues in launch management is to manage the questions *what, where, when, who* and *how*. The first four issues are ideally, e.g. in theory, decided early on in the product development process. The last issue, *how*, is classified as a tactical issue and thus concerning the launch work. During our time at VCCS, we observed that the first four issues were discussed and altered several times, i.e. project members knew they were working after a timeplan that was out of date. Also, the features of the product were being altered several times. This might indicate that the project was turbulent, or that the theories of strategic and tactical launch issues are not realistic. By this we mean that discussions concerning all the five issues mentioned above is an ongoing process. The VADIS-NG project members were well aware of the importance of the *where* issue, and there was a consensus on that an incremental rollout was going to be done. We could also conclude that the issue *who* was somewhat unclear regarding new customer segments. In the project there was also a fine line between what was being considered as pure launch issues and on the other side marketing issues. In order to create a clearer view on what target groups to focus on, one suggestion could be to plan for a two-step launch. The first step would include only launch issues associated with authorized dealers, pretty much as the work actually was being done when we took part of VADIS-NG. When this rollout had been done it would have been time for the second step where the launch would concentrate on independent dealers. The final responsibility of this second step should ultimately be taken care of by the Sales Regions themselves. The important thing would be that the project management at an early stage state set guidelines for the *who* issue, in order to avoid uncertainties in the project.

Classical tactical issues are pricing and promotion strategies. At this stage, decisions about whether to have skimming or penetration pricing strategy should be taken. The general idea in VADIS-NG was to have a penetration pricing strategy although there were different views on what would be the best strategy. Very relevant at this stage is also the question of whether to go for a *push* or *pull* strategy. The VADIS rollout was clearly a push strategy, and the goal for VADIS2004 was to create a pull-demand from the users. But, as far as we could see when working at VADIS-NG the push strategy was once again the dominating strategy. This in spite of several project members consciousness and willingness to create a pull-demand from the market. It was clearly outspoken within VADIS-NG that if the repair shops did not accept VADIS2004, they would not be authorized Volvo repairers anymore. This was a clear contradiction as we saw it, supported by the theory of Ginzberg (1980).

Map issues surrounding launch and create timeplan. To create a correct risklist for the launch it is of great importance to map all activities that surrounds the launch. The mapping activity is not even brought up by Crawford (1994), but we consider this crucial in order to work properly with the risklist in a later stage of the Launch management. This mapping is preferably done by all the team members in team Launch. Ginzberg (1980) states that one of the most important issues to reach acceptance is to have a clear overview of the project. The mapping activity correlates well to this theory. Under a meeting we did a presentation of the initial mapping with the intention of following up the content of the mapping in order to fix the activities. We also asked the sub project leaders to look over the mapping until the next meeting. The agenda for this second meeting was by some cause altered and the mapping we had done was never brought up. Either this was because of organizational problems leading to that the project leaders prioritized other issues, or the mapping was considered done. Either way this mapping was said to be very useful to team launch. After the mapping was done all the activities were placed in a timeline where the length of preparing and performing these activities were decided. The exact dates were not decided but merely the order in which the activities were to be done. The purpose was thus to see the internal conformity between the activities as to what activities had to be done before others could start. The project team members were aware of the delay for the whole project, but they were not sure about the exact delay. Therefore the dates were not decided in the timeline. Looking at the model of effects of failures in product development presented by Gustafsson (1998) in figure 3.9 the single most costly issue is the one of time delay. The model points out that the effects could be devastating for the profit of the product's first five years. In the case of VADIS2004 the product sale was not the big issue, but on the other hand the time delay of the project could clearly affect the outcome of the product. We believe that this kind of effect-estimation is a most important thing to do.

Develop and implement communication plan for Sales Regions. The communication plan is about external communication from VADIS-NG towards the Sales Regions. In this plan a clear agenda of issues concerning the launch, such as product-info, pilot tests, support, training etc. should be included. According to Edvardsson et al. (1988) it is preferable to have a dialogue and interaction with the customer when developing the service concept. He also talks about the importance of informing about equipment like network capabilities and other hardware requirements. As VCCS is a decentralized organization the communication plan cannot decide *how* this information should be delivered to end-users. Guidelines of what kind of information should reach the end user are of course preferable. Edvardsson et al. (1988) also mention the importance of giving feedback, how and when customers can give this feedback. A similar plan was partly being done at VADIS-NG, but this activity was partly under-prioritized. This underpins the great importance of the step "Specifying strategic and tactical launch issues". This activity could have been done more clearly at VADIS-NG, which probably would have made the creation of the communication plan less complicated. Also, a quite simple way of keeping the regional offices around the world up to date would be to have a VADIS2004 homepage where current events were published and where organizational maps could be on display.

Create and implement launch control plan. First of all, we consider this activity to be done earlier in the Launch management process than suggested by Crawford (1994) in his Commercialization plan (figure 3.13). In Crawford's (1994) model over the

commercialization phase he brings up this step very late. The need for tracking and making visible risks during the development of the system is most essential. Crawford is only interested in tracking risks during the late phase of the launch. We mean that it is equally important to track risks during the product development as under the actual and final launch/rollout of the product. In VADIS-NG the definition of launch was: *Launch is the total scope of activities from Elaboration and onwards in co-operation with the Sales Regions and Sales Companies.* This definition supports our suggestion about when and how the launch control plan should be done.

One criticism of Crawford's launch control plan is that he does not mention anything about mapping activities before doing the risklist. For us it is obvious to do this mapping before the risklist is done. Otherwise the risklist is made by intuition rather than by a well-worked plan. This criticism leads up to an additional step here presented as the first one. Here follows the suggestion of a launch control plan of VADIS-NG.

- 1) *Map activities.* To be able to do a correct risk list of the launch it is important to map all activities that affect the launch. If this step is not done in a proper way there is a big danger that the risklist does not reflect the real risks of the launch. If this happens the risklist can affect the whole launch in a devastating way.
- 2) *Spot potential problems.* Clearly, this has been something that members of VADIS-NG were working with from the beginning of the project. A great amount of time was spent on collecting concerns from markets (Sales Regions and Sales Companies). Various risk-lists were done in order to categorize the identified risks.
- 3) *Select those to control.* Here, the risks are to be divided into different risklists. Within team Launch in VADIS-NG this was done by discussing the risks, eventually eliminating, keeping or moving the risks to a general risklist for the whole project. The impact and likelihood of the risks were then estimated, after which they were ranked in the risklist. By this, project members got a better idea of which risks should primarily be in focus.
- 4) *Develop contingency plans for the control problems.* To avoid any of the identified issues of concerns to occur, an action plan must be developed of how the risks should be avoided. This plan should be actionable and ready to be put to work immediately. At VADIS-NG, the contingency plan was quite under-prioritized. It was preferable to fill in actions to be done in order to avoid the risk (see i.e. chapter 4 "Risklist") but the actions were never being discussed thoroughly at meetings.
- 5) *Design the tracking system.* To be able to control and do something about the problems if they occur, some sort of tracking system must be developed. Of this we saw nothing at VCCS. In the tracking system a set of variables should be put up, and if these variables are not fulfilled, the contingency plan should be executed. An example of a Launch control plan at VCCS would look like the following:

Risk	Impact	Probability	Sum	Tracking	Action	Responsible
Not enough support from VADIS-NG during testing, due to lack of manpower	3	2	6	Several checks with VADIS-NG support team that they have the time and manpower to manage the support during Pilot/Rollout. Check also with SR/SC that dealers are satisfied with the support.	If the risk occurs, gather support staff and responsible for meeting. More manpower must be appointed at VADIS-NG to manage the support	Support manager

Figure 5.1 Example of Launch activity control plan. The ratings of Impact and Probability are multiplied to a maximum of 9.

Initial runs and review through reference group meetings. In this phase, the first versions of the system are being developed. The development of the system should follow the specification based on earlier surveys. The team Launch does not directly manage this step, but the activity is although important for the launch work. The feedback of these runs must obviously be reported to the project and actively communicated to team Launch. This step is also one of the important major steps in the system development, and should thus be checked by a reference group.

Revise tactical launch issues. Stemming from where the strategic and tactical launch issues were specified, it is now time for deciding the details for the tactical launch components. We will give three examples of tactical issues that must now be decided upon, in order to be communicated to the different markets. These issues are also presented among others by Hultink et al. (2000). Firstly, *the assortment of the product* must be decided. That is, in the case of VADIS2004 how many different subscription alternatives there should be. In some cases the markets and end user environments look different, therefore the product itself and services surrounding it must be available as different offerings. Secondly, *the pricing strategy* should be followed up and decided upon in accordance with the assortment of the product. The decision of pricing showed to be an urgent matter at VADIS-NG, due to the decentralized organizational structure. By this we mean that Sales Companies had to decide their budget and apply for supplementary financial aid to the coming year when things like new hardware were to be purchased. As the third example, *the kind of promotion materials and how the information* about the coming product should be presented must be decided upon. Some of this material should be done at VADIS-NG, such as guidelines for Power-point presentation material and newsletters. The Sales Companies are then to forward this information to local dealers and end users.

Identify and decide responsibilities at markets. Looking at the mapping of launch activities, some of them are written in bold (see figure 4.6 in chapter 4). Within these issues there has to be persons responsible for carrying out and securing that work at Sales Regions and Sales Companies. At VADIS-NG, these responsibilities were brought forward at internal

meetings, stemming from 'brainstorm'-meetings. When we left VADIS-NG, there were talks about doing a follow-up meeting with external representatives from Sales Region. To do this, or to get feedback in some other way would be most preferable as the input from Sales Regions *and* Sales Companies should be most valuable in order to do a successful rollout.

Perform Sales Region tests. When the market responsibilities are decided and communicated, the Sales Region tests can begin. Now the Sales Regions know what the areas of responsibilities are, and above all they have been taking part in deciding these roles. The Sales Regions test comprise of early versions of VADIS2004. The purpose with these tests is to get feedback from the Sales Regions and Sales Companies about the functionality of the system. Guiltinan's (1999) idea about trialability as one of the product adoption variables clearly matches these tests. This of course if the feedback is taken care of properly. Because these tests are performed at Sales Region level and not done by end users such as repair workers the risk is that the user acceptance tend to be slower, which is supported by Ginzberg's (1980) theory of system acceptance. We would like to suggest that end users should be invited to participate in these tests even at this stage of the system development. This kind of action is also supported by Edvardsson et al. (1988) who emphasize enhancing the role of the customer as a co-producer of the service.

Train support staff, Train The Trainers. As we can see from chapter 3 (Edvardsson et al, 1988, Shostack, 1984) the employees of the service producing company is often viewed as an integrated part of the service. The customer's notion of quality is thus influenced by the appearance and behavior of the employees. Guiltinan (1999) also states the necessity of new skills and thus training when a new product is to be used. We believe that these training and support processes are very critical in order to carry out a successful launch. If the training and support are well performed the staff is prepared to give end-users qualitative service. Edvardsson et al. (1988) notice that the risk involved is that the service quality may be very depending on the presence of people from the producing company. This risk points to the importance of having the right people in the right place. Our suggestion is that it could be very useful for the Sales Regions if VCCS created some sort of guidelines for how the training at Sales Companies and local sites should be performed.

Revise product. This is again a step involving technical and system specific issues, but it also affects the timeline of launch. That is, the feedback from the Sales Region tests must be taken care of and used in a way that improvement of the system is done according to the timeplan. This in order to run pilots at test-sites with full functionality.

Run Pilot at test sites. The pilot test is the first time the system is tested at local dealers around the world. The pilot, in VADIS-NG also called *release candidate*, is very critical because every problem that occurs here must be fixed before the actual rollout of the VADIS2004. All functionality that is thought of to be included in the rollout version is to be included in the pilot of VADIS2004. The purpose thus being to actually replace the old VADIS with the pilot version. The most important with the pilot is to run it in as many different types of user environments as possible. This as there are obviously many different kinds of repair shops, technical infrastructure and experiences among existing users of VADIS. The members of project VADIS-NG were well aware of the aspect of running the pilot in different settings, and the plan was to run it at 10 different locations. Obviously, running pilots also includes the risk of "forgetting" or by other means not including all relevant conditions. A plan

could be developed to secure test site factors like technical infrastructure, experience among users and the size of test sites. Although it would be preferable to run the pilot at a greater number of test sites, there are always staff- and financially related factors hindering this.

As Gustafsson (1998) concludes, the customer's experience about the total product often consists of a complex combination of aspects. The product itself is often accompanied with surrounding services, and this is also true for VADIS2004. These services can be training, finance, accessories, guarantees, manuals and advice of the product. Some questions surrounding the pilot and the services mentioned above were still unresolved when we left the project. For example, the issue of guarantee was said to be important, as well as how many and what types of manuals there should be and of course the support. The support of VADIS2004 clearly correlates with the term *bi-service*, as stated by Grönroos (1990). This bi-service constitutes of the kind of service that is needed for the *kernel-service* to operate well and be available for the customers.

If we look at the model "Technology adoption curve" (figure in chapter 3.6, Moore, 1999) the adoption curve is valid also for VADIS2004. But with one important difference, namely that VCCS was almost certain already in advance how the curve would look like. This was possible with the background of knowing that dealers and repair shops would no longer be authorized Volvo dealers if they did not accept VADIS2004. The first part of the "Technology adoption curve" is the pilot of VADIS2004. The chasm consists of updating the functionality and securing the quality of the product. Then, the worldwide rollout can begin. However, the model could also represent a longer perspective of VADIS2004. By this we mean that the first part would be VADIS2004 targeting existing authorized dealers, and the second part representing a large number of independent repairers and dealers. This also follows our suggestion in the step "Specify strategic and tactical launch issues" about a two-step launch of VADIS2004.

Secure product quality. This is simply the step following the pilot, where the quality of the system must be secured before rolling out the product to all the customers. Securing the quality consists of updates, improvements in support and helpdesk routines etc.

Incremental product rollout. We consider the rollout of VADIS2004 to be a case of *migration* from one product to another. The emphasis lies on getting a replacement demand (Guiltinan, 1999). We find two kinds of migrations. The first one is to increase the customers' use of the product by offering a better price-performance alternative. Within VADIS2004, there was a somewhat unclear situation about how the pricing should be set. The project members had different opinions about whether to set the price equally as VADIS; a higher price; or such a drastic thing as giving the product away for free. The second typical migration situation according to Guiltinan (1999) is where the new product represents an upgrade from the existing one and eventually replacing it. With VADIS2004, the latter situation is clearly the case. We could also conclude that VCCS clearly stimulated a discontinuance of the existing product VADIS by not putting down more effort in upgrading or continuing the support contract with external suppliers of the existing system, another issue brought up by Guiltinan (1999).

The rollout was planned to be done incrementally, and not through a "big-bang" happening. This seemed very sound as a too big amount of personnel and other resources would be

necessary for being able to handle possible problems. The support functions must quite naturally be fully prepared as this is a part of the total product. Edvardsson et al. (1988) support this by saying that employees can be seen as the critical or even determining factor for the customer to experience a high level of quality.

Transition to line organization. When the whole VADIS-NG project is finished it is time to hand over the responsibility to the line organization at VCCS. During the time we were involved in the project we did not see a plan for how this transition to the line should be managed. The reason for this is likely that there were more acute problems that needed to be taken care of in the project. We believe that it is very important to create a plan for how the transition to line organization should be managed.

Learn loop. Maybe the most important thing that we noticed when spending time at VADIS-NG was that most of the launch work was done with the support of launch experience but without further guidelines from previous product launches. With guidelines we mean written project analysis or other processes for handling launch knowledge. As one of the leading project members stated: *“there is no system for that”* apropos the question of taking care of previous launch knowledge. The experience and knowledge of project members in VADIS-NG that had been involved in previous launches, such as TIE, was gradually incorporated in the launch work of VADIS2004. We believe that it had been very useful for the launch team if they would have had access to guidelines in the early phase of the project. Our suggestion is thus to create a plan for handling launch experiences among team members, so that this knowledge could be used in similar projects without the necessity of having those people available all the time. With clear guidelines on how team members should work in defining roles, activities, risks etc. much time can be saved. The creation of a roadmap could be seen as a part of the learn-loop process. In our view this clearly increases the chance of succeeding in a global rollout project. For example, it would make it easier for new project members (consultants etc.) to get into and understand how the launch process is going. Also, what has been done so far, what the plan looks like and so on.

5.2 Roadmap

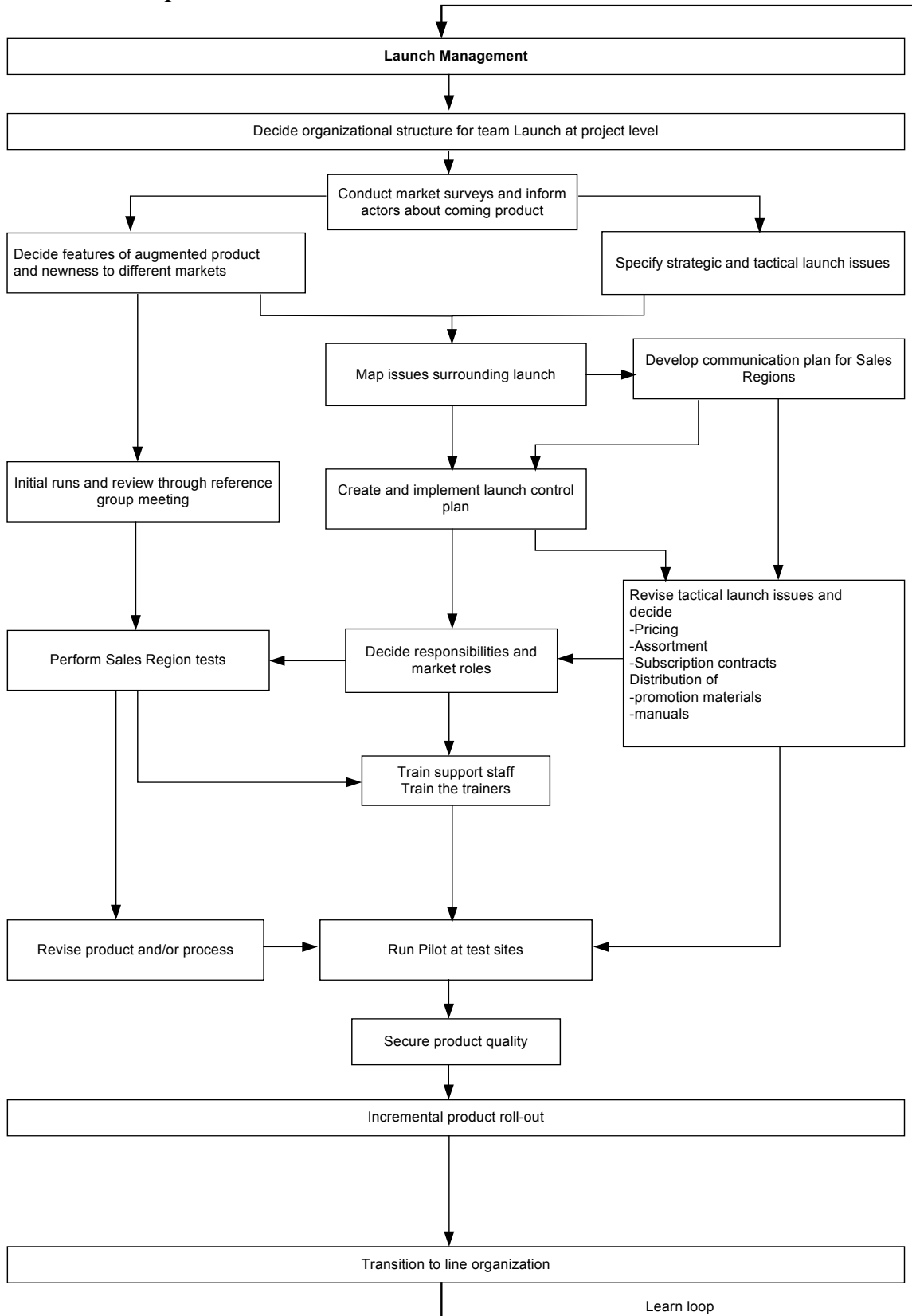


Figure 5.2 Launch Management roadmap

The roadmap above represents the procedural work of launch management that we described in chapter 5.1. The visual presentation is a way to get an overview and understanding for the launch process. This roadmap was brought forward from the theoretical models presented in chapter 3 (theory chapter) together with the conditions we consider valid for VCCS.

Here we have found significant differences especially between our Launch Management roadmap and the one by Crawford (1994), regarding issues such as the timing of the “Create and implement launch control plan” and also the existence of “Map issues surrounding launch”. Also, looking at the specific conditions at VCCS and the automobile industry compared to what could be seen as general launch issues, the most significant condition at VCCS is the special relationship to the market organizations (Sales Regions, Sales Companies). There is a clear and immediate need for incorporating the market companies at VCCS in the launch process and this also facilitates the earlier step “Conduct market surveys and inform actors about coming product”. The organizational structure creates a semi-independent relation between VCCS in Sweden and regional / national companies around the world. This leads to the process of “Train The Trainers” as the responsibility of training and informing the end-users must be planned for and initiated at central level in VCCS but executed at the local companies around the world. Connected as well is the step “Decide responsibilities and market roles”, “Perform Sales Region tests” and “Run pilot at test sites”. The last step in the roadmap is “Transition to line organization” which may not always be the case in other launch projects.

The biggest difference, as we see it between our roadmap and the theories that we have studied is the “Learn loop”. There must be a built in consciousness of launch knowledge that is properly managed and taken care of already in the beginning of the project. We consider our roadmap to be valid for other launches as well if the above-mentioned steps on this page are adapted to the specific conditions found in other launch environments.

6. Conclusion: Critical parameters concerning launch

In our attempt to distinguish critical launch parameters in the area of the automotive industry that we have been examining and being a part of, we can now conclude the following. Our view on what the definition of launch is differs from the theories in the literature. We consider the definition of launch to concern the whole process from product elaboration to the actual rollout and implementation. The literature defines the concept of launch in a more narrow way, only existing of the final commercialization and implementation phase.

Below will follow a summarized conclusion of the most important issues in launch management as we see it, namely :

- *the creation of a Launch Management roadmap*
- *which steps are included*
- *the internal structure of the roadmap's components*
- *good control of the what, when, who, where and how*
- *risk awareness*
- *creation of a launch control plan*
- *learn-loop process*
- *user participation*

The most important in the management of a launch is the *creation of a Launch Management roadmap*, *the internal structure* of the components and *which steps* actually are included in this roadmap. By doing this, the launch manager would get a good and necessary overview of *how* the work should be carried out; namely *what* should be done, *when* it should be done, *where* the pilots and rollout should be done and *who* should be included in and responsible for the various steps. The latter is obviously an important issue that can never be stressed out too much. The launch knowledge in a company represents the skills of the employees involved in a product development in terms of having the overview needed of all the operations that can be foreseen. This *risk awareness* and the ability to have a plan for dealing with the issues and risks are of uttermost importance. From all the risks that are brought up there must be a plan for identifying the risks, how to manage them and what to do if they occur. Implementing a *launch control plan* could help manage these risks. Important is also the organization's built-in awareness of managing previous launch experience in a planned way, being that of the *learn-loop*. This to seek the benefits such as decrease in time, cost savings and lowering the chance of risks to occur. To increase the chance of end-user acceptance, detailed market surveys and information gathering activities through *user participation* must be done ongoing as well as at an early stage of the project.

We have developed our conclusions from the wide perspective of theories and models found in recent research, together with the real experience from VCCS. Therefore we consider our Launch management roadmap and discussion to be valid to similar projects concerning technical products where the total experience of the product also includes the service surrounding it.

6.1 Further research

Our thesis was concentrated to launch issues in the early phase of the VADIS-NG project. It would be of great interest to examine the rollout and implementation phase of this or a similar project in order to see how our guidelines and conclusions about the launch work would correlate with this latter stage of the launch. It would also be of great interest to examine how the end-users adopted the VADIS2004 system with regard to that they were never directly involved in the actual development of the system.

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Appendix

Issues and questions posed to VADIS-NG project members

In this section we will give an account of the topics that we discussed during the talks and interviews we conducted at VCCS. This primary data collection was partly done by recording the interviews, and partly by taking notes. The reason for this combination of work methods was that not everyone wanted to be tape-recorded. Some of the talks were also of a drawn out character or conducted at several informal encounters, so that taking notes was the best way to summarize what had been said.

Apart from all the informal talks that we conducted and presentations at meetings, the more specific topics that were brought up at interviews and talks treated the following issues and questions:

- What are the main reason / reasons for developing VADIS2004?
- What are the actual goals with VADIS2004, in terms of:
 - number of users?
 - types of users?
 - new markets?
- According to internal criticism within the project, a main reason that it took quite some time for the dealers and repair shops to adopt current VADIS was the push strategy that was being used at that time. What differences do you see concerning VADIS-NG in this matter? Do the dealers have any choice of not using VADIS2004?
- The independence of Sales Companies towards VCCS in Sweden, regarding
 - launch activities
 - pricing
 - support
- How does VADIS work? Differences with VADIS2004?
- Pricing aspects: will VADIS2004 generate money or will VCCS be satisfied when reaching breakeven? Are there any calculations about what would happen if giving out VADIS2004 for free, as a means for expanding the after sales market and there by reaching higher customer satisfaction and maybe selling more spare parts?
- Describe the main goals with the Reference Group Meetings
- How did the initial market plan, if there was any, being communicated to the project members of VADIS-NG?

- What would be the main risks and / or opportunities with VADIS2004 as you see it? And for the project VADIS-NG?
- In what way do VCCS and VADIS-NG in particular take care of previous knowledge about system launches?
- What crucial definitions are there within the launch scope, and how are these decided?
- Are there any plans on selling (versions of) VADIS2004 to competitors?
- Describe what TIE really is?
- How and where is the support function organized in VADIS /VADIS2004 /TIE?
- What major concerns could be found at the launch/rollout of TIE?
- What kinds of surveys have been done?
- What is the general policy on doing end-user surveys?
- How was the feedback taken care of when launching TIE?