

Developing Dynamic Outsourcing

Bringing continuous added value to the ABB Full Service partnership

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Abstract

Title: Developing Dynamic Outsourcing - Bringing continuous added value to the ABB Full Service partnership

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Problem: Full Service is a maintenance service provider within the ABB organization engaged in outsourcing partnerships. They wish to improve its business concept by incorporating resources and knowledge of ABB's product divisions. The aim is to add value to their client relationships and simultaneously create mutual benefits between ABB divisions.

The generalized problem of the thesis is concerned with business development of service providers engaged in outsourcing partnerships. They need to achieve competitive advantage by nurturing their client relationships and developing competencies within their organizations.

Purpose: From an organizational perspective, investigate how service providers can bring continuous added value to inter-organizational outsourcing partnerships. Find ways to improve the ABB Full Service business by shifting the focus from providing maintenance to achieving productivity gains for their clients.

Method: The thesis is based on qualitative input from in-depth interviews and literature studies. Insights are developed through a hermeneutic approach and conclusions are formed by abductive reasoning.

Conclusions: Suggestions for developing service providers engaged in outsourcing partnerships are provided, particularly focusing on improving competence development and the client relationship. Terminology is added to describe specific outsourcing phenomena. The terms intra-

organizational outsourcing, virtual outsourcing and dynamic outsourcing are defined and discussed.

Keywords: Outsourcing, partnership, service, service providers, service suppliers, maintenance, client relationship, business to business relationships, b2b, insourcing, backsourcing, onshoring, intra-organizational outsourcing, virtual outsourcing, dynamic outsourcing, knowledge management, knowledge transfer, learning organization, competence development, knowledge sharing.

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Lund, June of 2008

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Jakob Nordahl

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Chapter One – Issue & Method

This chapter introduces the issue and the general method chosen to approach the issue. It starts with a discussion on the original assignment given by ABB Full Service. This discussion ends with the formulation of the academic issue that the thesis is based on.

1.1 The original assignment and the core issue

This master thesis is originally based on a specific *assignment* from ABB Full Service. The assignment is as follows:

“How can ABB Full Service expand its offering of providing fundamental maintenance by seamlessly incorporating the business concept with competencies and solutions from other ABB divisions?”

To make this assignment appropriate for an academic thesis a generalized issue must be formulated. In order to do this one must understand what ABB Full Service is, what they do and what it is they wish to achieve in general terms. Also, to formulate the issue an appropriate theoretical perspective for the thesis must be chosen. The chosen method is to have an iterative approach, allowing the issue to be developed as the work proceeds.

ABB Full Service offers outsourcing services in the area of maintenance. The authors of this thesis have decided to focus less on maintenance specific issues and more on matters relating to the role as a service provider in general. This choice is based on interest areas and the knowledge span of the authors. An important part of this thesis is a discussion on the special form of outsourcing that ABB Full Service engages in. This type of outsourcing is in this thesis defined and given a name: *inter-organizational outsourcing*.

By exploring the assignment, mainly through interviews, a deeper understanding of the core issue is developed. In chapter three there is a problem analysis in which the overarching theoretical perspective is chosen: *organizational theory*.

Two *themes* relating to key problems in the Full Service organization are also identified: *competence development* and *the client relationship*. Further on, it is realized that in order to succeed with the outsourcing form Full Service engages in, it is crucial to bring *continuous* added value to the partnership. The original assignment is actually a form of *solution* to this core issue.

The issue of this thesis is thus:

“From an organizational perspective; how can service providers bring continuous added value to inter-organizational outsourcing partnerships?”

The last part of the thesis defines service providers that achieve the above as engaging in *dynamic outsourcing*.

1.2 Method

In this first chapter the general method for the thesis is explained together with a description of how the work was conducted. Included is reasoning about the chosen method and a readers guide to the report. In the beginning of each chapter, throughout the thesis, is information of what choices have been made, explaining the work method regarding that chapter. The purpose is to make it as easy as possible for the reader to clearly see what the authors have done and why they choose to do it in that way.

1.2.1 The working process

The research approach for this master thesis is based on an *assignment*. Lundahl and Skärvad (1999, p. 81) describe how investigations based on an assignment often are conducted, and discuss the necessary considerations to guarantee a viable academic result. The considerations have been interpreted and slightly modified for this thesis.

The research approach for this thesis can be described as a five-step process:

1. Understanding the assignment and choice of method

First the assignment from ABB was examined and interpreted with the help of interviews and meetings with the tutors from ABB and Lund University, two of the main stakeholders of the thesis. These meetings ensured that everybody agreed to what the assignment should be and also set the schedule for different steps of the work.

2. Putting the assignment in context

Following the first step, insight into ABB and its Full Service unit is built through reading documents and conducting interviews with key persons working in the ABB organization or working for Full Service clients. After an initial research phase the objective for this part is to understand the ABB Full Service business and the environment it operates in to better identify problems related to the assignment. From this analysis the first version of the issue for this thesis was identified and analyzed.

The second part of this phase was to identify, formulate and classify problems at ABB. The main difficulty was to sift out the problems that did not relate to the assignment or the issue without losing vital information. The result from this step was a wider understanding of the assignment. Through the problem analysis, it was discovered that problems could be categorized into two main themes; competence development and the client relationship. In the final stage of this process, the organizational perspective was chosen as the main theoretical approach of the thesis.

3. Discovering relevant theories

The next step was to find relevant theories within the chosen theoretical perspective that combined would provide an encompassing description of the thesis subject. The

selection of subjects was primarily based on an analysis of what ABB Full Service is, which theoretical areas describes the organization and what areas are interesting in relation to the assignment, the chosen theoretical perspective and the authors. It was decided to approach theory by starting from a general description and working towards more specific areas. This resulted in choosing to start with overarching organizational issues, elaborating on service organizations, then on to a more specific investigation of outsourcing organizations and finally ending in a discussion on the client-supplier interface.

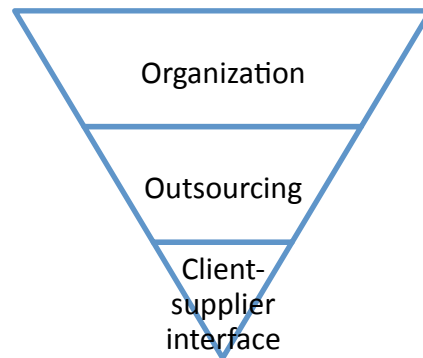


Figure 1 The theoretical approach.

4. Developing solutions for ABB Full Service

The next phase involved finding specific solutions to the ABB assignment with the support of theories, best practices identified in interviews and ideas of the authors. This was done with a hermeneutic approach, interpreting the subject in the context of larger theoretical and empirical systems (Larsson 2005, p. 18). A hermeneutic circle based on theory, empirics and the authors' own input formed an understanding of the subject and led to ideas of solutions. A key part of this process was synthesizing insights to form applicable solutions through group discussions and brainstorming.



Figure 2 The iterative loop and the outcome.

The two themes identified in the problem analysis provided a natural base from which to discover solutions. A selection process of which ideas to be further developed was conducted based on feedback from ABB and the tutors. Implementation and quantification aspects of each solution were considered.

5. Finding generalizations and contributing to the theoretical landscape

The last phase of the work was to analyze the suggestions developed for ABB Full Service with the aim of finding general applications. This required the solutions to be brought to a higher level of abstraction. Another important aspect of this work was to put the findings in a theoretical context, discovering where the subject fits in the current theoretical landscape and identifying possible gaps in the academic understanding. Finally the issue was once again revisited and adjusted to fit with the findings of the thesis.

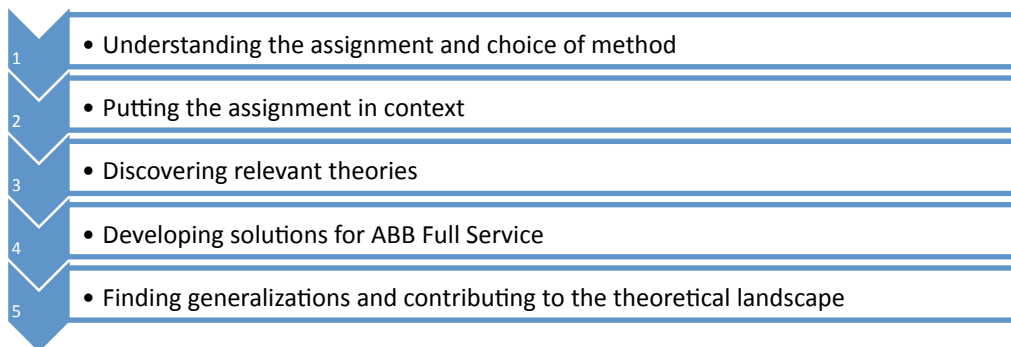


Figure 3 The model for describing the method of this master thesis.

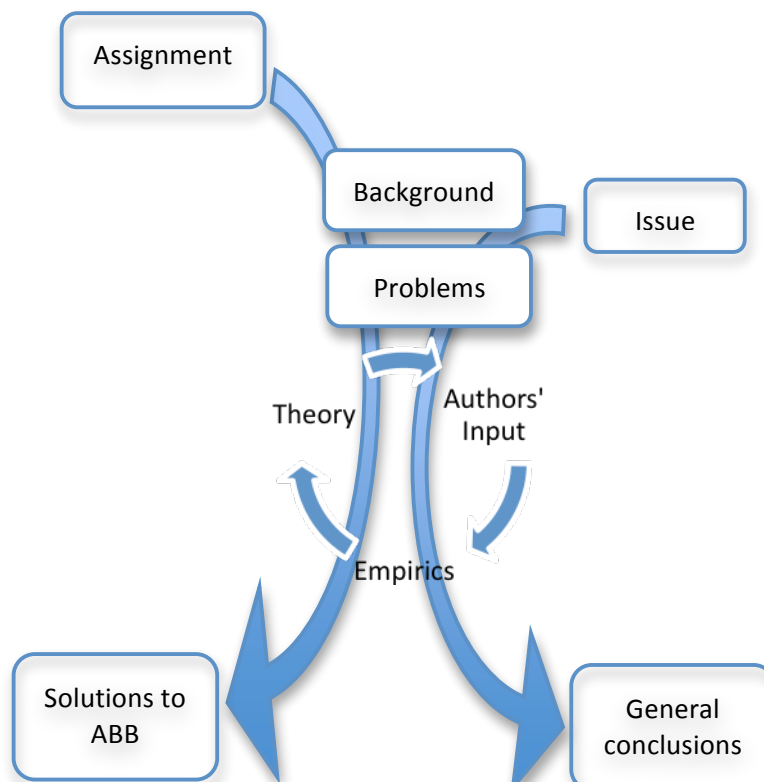


Figure 4 The working process of the master thesis

1.2.2 Methodological perspective

As stated previously, the research in this thesis is conducted from a hermeneutic approach. To employ a hermeneutic approach one must interpret the part in context of the whole (Larsson 2005, p. 18). In this thesis, to employ a hermeneutic approach would mean that in order to understand ABB Full Service one must understand ABB, and that in order to understand outsourcing of maintenance one must understand general outsourcing and organizational theory for example. The choice of using this approach is natural for the thesis; the subject is complex with linkages to many subsystems and from several viewpoints the subject is an element of a larger whole. (Arbnor & Bjerke 2003)

There are two basic inputs to this thesis, in-depth interviews and literature studies. Therefore the information gathered in this thesis is qualitative (Patel 2001).

Most empirical input is done through in-depth interviews with key persons related to the case. These individuals work on different hierarchical levels in and outside the ABB organization. This input has been imperative for the understanding of the subject and has provided many insights that could not have been reached through academic literature study. Schön discusses (1983) the value of learning from professionals and how their practical perspective can provide significant insights.

The method for literature research is in line with what Patel states on explorative investigations. Especially in the area of outsourcing the explorative approach is suitable. As the thesis progresses the authors learn that it is difficult to fully describe the subject academically, therefore an expanded exploration of the current theoretical landscape is necessary. (Patel & Tebelius 2001)

The conclusions of this thesis are in part contributions to terminology. This work is based on an abductive approach. The authors aim to find a description of the studied phenomenon based on input from theory and empirics. To test the suggested terminological additions explorative investigation of academic literature is used. (Thiéart 2001, p. 55)

1.2.3 Data collection

The sources for this master thesis are interviews, relevant theories and documents provided from ABB and their internal databases. There are different kinds of sources, primary, secondary and tertiary (Bell 2000). The primary sources are the empirical material, provided by ABB and their clients through in-depth interviews. Secondary sources are articles, facts and literature that relate to the thesis subject. These sources provide a foundation from which to interpret the subject and the empirical data.

1.2.4 Primary data collection

The primary data collection started with interviews of key personnel at ABB and its Full Service division. Most of the interviews were performed according to a schedule

of three intervals. The first period of interviews gave an overview of the subject and an insight to the problems related to the subject. The second period, interviews confirmed that the right problems had been identified. The last interview period was used to test solutions to the prioritized problems identified after the second period.

The first list of persons to interview was provided from ABB Full Service. The plan was that the interviewees would recommend who should be interviewed in the following period, something that worked out according to plan. In preparation of each interview, the interviewees received information prior to the meeting about objectives for the thesis and the reason for the interview. Interviews lasted from one hour up to four hours. One interviewer asked questions and managed the interview, the second interviewer asked supporting questions when appropriate and took notes and the third interviewer focused solely on taking notes and documenting the interview. Documentation was typed on computers during interviews. Another option was to use a tape recorder, but it can be seen as formal and restrain persons that are being interviewed (Lundahl & Skärvad 1999). Some interviews were performed via telephone but this was considered as a secondary option due to the lesser interactivity and expressiveness of the medium.

As soon as possible after each interview, the interviewers gathered to debrief and to produce a protocol for the meeting. The making of the protocol worked as a form of qualitative analysis where the interviewers' comments were added to what had been said. In addition to this document, other documents were maintained where good ideas, new thoughts and future questions were collected.

There is always a risk to lose insights and observations during the interview process. The validity of the interviewing process is enhanced by the fact that some interviewees were interviewed once again, or asked complementary questions later via e-mail or by phone. Some key questions were asked to every interviewee in order to find out if there is a difference in the answers depending on where in the organization the interviewee are situated.

The prior perceptions of the authors of this thesis could be a problem. Old relations to the company ABB or norms and values from the academic world could influence the result. The authors had prior to this work little knowledge of the outsourcing business. One author has a background of working at ABB but at another division, this is considered to be of minor influence to the thesis and the research. The only rational way to deal with this kind of problem is to ensure that the work and results are constantly evaluated during the whole process within the work group and by tutors at ABB and Lund University. (Holme & Solvang 1997)

1.2.5 Secondary data collection

In the initial research phase common channels of information was used. For the first assortment of data the search engines *Google* for Internet material, Lund University's *Elin* for electronic documents and *Lovisa* for articles were used. Some books, articles and internal documents concerning the subject of the thesis have also been provided by ABB. ABB has an intranet with extensive information about their businesses, processes and tools, though the use of this source was very limited due to the non-disclosure act signed by the authors and therefore not a vital information source. The intranet was useful for the authors to validate the information given from the interviews. Facts and figures were crosschecked and the processes mentioned in the interviews were documented with the help of the storylines provided from the database.

Since the expression "outsourcing" means many different things according to different authors and actors of the outsourcing market, the need of clear and relevant definitions of the different aspects seemed necessary. The research work aimed to identify the different definitions existing in the research field and later in the thesis a background of terminology is presented.

Most of the sources were in English and therefore the language aspect was only present when information in Swedish needed to be translated to English for the thesis. This is however considered to be a minor problem due to the experience and skill level of authors.

1.2.6 Overall validity

Conclusions of this thesis were examined on validity in a four-step question process presented beneath:

- Reliability – to what degree has the layout of the study affected the results?
- Internal validity – Is there a good foundation to the conclusions? Has what was intended to be studied really been studied?
- External validity – to what degree can the conclusions be generalized?
- The overall validity of the study

This extra process gives the analysis and conclusions from this thesis a better foundation. The purpose is also to give the reader a good idea of how applicable the results of the thesis are to the business and the academic environment. (Paulsson 1999, p.48)

1.2.7 Objectivity

The main issue where the objectivity can be compromised is the relation between the authors and ABB and the authors and the university. The authors will receive a financial compensation from ABB after the presentation of this thesis, which is not unusual for a master thesis. This could affect the authors to enhance results to make a better case (Paulsson 1999). ABB could also be lobbying for a solution or conclusion

suited for their needs. This is considered to be a minor problem considering that the grades from the university are only *passed* or *not passed* and ABB are committed to pay regardless of the result of the thesis. It is however important for tutors and the opposition group to bear this in mind when reading the thesis. The authors have signed a non-disclosure agreement to be able to receive sensitive information from ABB limiting some discussions, the thesis will however be published according to all demands on a master thesis at Lund University.

1.3 Delimitations

This thesis is limited by self-imposed delimitations and external factors. External factors are time frame, demands from the university and demands from ABB. Such limitations contain the subject by scope and subject area. The university demands are to produce a valid academic report relevant to the educations of the authors. The demands from ABB were to provide meaningful insights to the Full Service business and to not be limited by having to identify the financial potential of the suggested solutions, it is considered to be outside the scope. ABB Full Service has requested suggestions and solutions to be implementable by the management of the Full Service unit, limiting the scope of the propositions to this organizational level, excluding ideas on the national and global level. Self-imposed delimitations contain the thesis by choice of interest areas of the authors, chosen theoretical perspective and by the knowledge span of the authors. It has been decided to approach the subject on a tactical level, ignoring the strategic decisions leading to the assignment. The thesis has a broad rather than deep inclination, sacrificing detail for a holistic solution.

1.4 Document outline

This document is structured in a narrative way. The thesis' disposition therefore follows the chosen method and the process of the authors work closely. Insights and developments are described in the document corresponding to the chronological order in which they were found, except this first chapter. The aim of this approach is to let the reader follow the process and thus get a more profound understanding of suggested solutions and conclusions. The general outline is as follows:

Chapter 1 – Assignment & Method

States the assignment, the issue and explains the method.

This first chapter introduce the thesis to the reader and explains the choice of general method.

Chapter 2 – Introduction to ABB and ABB Full Service

Builds an understanding of how ABB Full Service operates.

ABB and the business model of Full Service are described together with three cases.

Chapter 3 – Problem Discussion

Identifies and analyzes the problems and redefines the core assignment.

From the interviews a numerous of problems have been identified. These are sifted, organized and analyzed. After this the ABB-assignment is redefined.

Chapter 4 – Theoretical Framework

Goes through theories and best practices, suggests possible ideas.

The theoretical background is examined and the ones that relate best to the general question are selected.

Chapter 5 – Assignment Reflections and Solutions

Develops and refines solutions.

From the theories, the interviews and brainstorming sessions, solutions are identified. The impact of these solutions are tested and then related to the problems identified earlier, will the solutions really solve the problems?

Chapter 6 – General Conclusions and Theoretical Contributions

Discusses generalizations from the case.

From the ABB-case, what general conclusions can be identified? A new definition of the special outsourcing business ABB Full Service conducts is presented. General advices to successful partnership and knowledge management are also introduced.

Chapter 7 – Executive summary

Short presentation of the thesis.

In this last chapter the main findings from chapters five and six is evaluated to the issue and assignment of the thesis. Is the purpose of the thesis fulfilled?

2 Background - Introduction to ABB and ABB Full Service

In this chapter the reader will find the essentials of the history behind ABB and an explanation of how ABB Full Service in Sweden is organized within the global ABB group. This will be the basis upon which our report will be developed. The purpose with this chapter is to give the reader an understanding of the business in order to understand our more thorough examination of the problems.

The first part of this chapter describes the different levels at the company ABB and their business. Further on, the business model of ABB Full Service will be thoroughly described in order to give an understanding of the specific findings and solutions presented in the thesis. Finally, three case studies are briefly presented at the end of this chapter in order to provide a practical view of the Full Service concept.

This initial investigation has been conducted mainly through research of public sources such as annual financial statements, company websites and articles in business journals. The facts and figures have been crosschecked with the tutors of ABB in order to guarantee that they are accurate. The cases have been chosen because of their distinct characteristics that provide a deeper understanding of the Full Service business. The sources for the cases are mainly interviews with employees of the different sites.

2.1 ABB – company overview

ABB is one of the world's leading engineering companies; the businesses are focused at power supply and industrial automation. They are (abb.com 080121): “providing solutions for the secure and energy-efficient transmission and distribution of electricity and for increasing productivity in industrial, commercial and utility operations”. The company have about 110 000 people employed in over 100 countries. In Sweden there are about 8 700 ABB employees in 35 sites. The international headquarter is situated in Zürich, Switzerland, main sites in Sweden are Västerås, with 3 500 employees, and Ludvika, with 2 400 employees. (abb.com 080121)

2.1.1 A brief company history

ABB is an old enterprise, with main origins from two different companies, the Swedish ASEA and the Swiss Brown-Boveri. Both companies form in the late nineteenth century. ASEA's main business was originally in generators, electrical motors and transformers. Brown Boveri was on the other hand a pioneer in AC-transmission and makers of power plants. ASEA was key supplier of Sweden's electricity infrastructure, and its success in transmission allowed it to expand throughout Europe. In the early twentieth century both companies start producing equipment and locomotives for the European railways. In the midcentury ASEA develops High Voltage Direct Current (HVDC) – transmission. By this time both

companies are worldwide suppliers in power products and systems. In the 60s and 70s ASEA adds nuclear power plants and industrial robots to its line of business. In 1988 the two companies merged to form ABB (ASEA Brown Boveri), with a turnover of 100 billion SEK and some 160 000 employees this was one of the largest electrical engineering companies in the world. In the 90s a row of acquisitions expand the business in transmission, distribution and automation technology. In the end of the 90s ABB begin to sell off parts of its business such as nuclear power, power generation and rail. In 2001 the company faces difficulties due to decreasing demand in the wake of the turn of the century recession and launches a program to cut the number of employees by 8%. Further difficulties stem from a class action lawsuit filed in 2000 to a company acquired in the early 90s, Combustion Engineering, due to asbestos induced sicknesses. The financial troubles induce further divestments and a reorganization of the business divisions to cut costs. In the mid 00s there is a turnaround, Fred Kindle is appointed CEO, ABB expands in Asia and the region offers high-margin growth. In 2006 the asbestos lawsuits are settled and 2007 brings record-breaking profits marking an official end of the troubles facing ABB during the first part of the decennia.

(abb.com 080121)

2.2 ABB worldwide

ABB has five global business divisions; each unit is responsible for a technology area. Each division is financially separated and report to the CEO and the global headquarters in Zürich, Switzerland.

Each global division is in turn divided into several business units, covering a more specific technology and range of products. However ABB is also divided into geographical markets, so there is for example a Swedish organization that is basically a mirror of the global organization. This makes ABB a matrix organization, as each business unit reports both to the global division and to the regional organization. (abb.com 080121; Larsson¹)

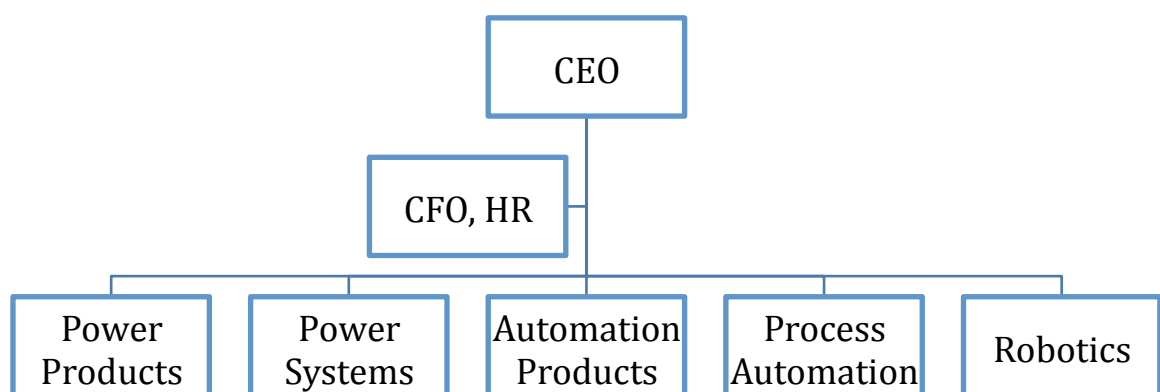


Figure 5 The global organization of ABB, (abb.com, 080121).

¹ Karl-Johan Larsson manager, ABB Full Service Development Unit, phone interview 080131

2.2.1 Power Products

Power Products are the key components to transmit and distribute electricity. The division incorporates ABB's manufacturing network for transformers, switchgear, circuit breakers, and cables and associated equipment. It also offers services needed to ensure products' performance and extend their lifespan. (abb.com 080121)

2.2.2 Power Systems

Power Systems offers turnkey systems and services for power transmission and distribution grids, and for power plants. Substations and substation automation systems are key areas. This business also includes traditional ABB products such as flexible alternating current transmission systems, HVDC systems and network management systems. In power generation, Power Systems offers the instrumentation, control and electrification of power plants. (abb.com 080121)

2.2.3 Automation Products

This ABB business includes drives, motors and generators, low voltage products, instrumentation and analytical, and power electronics. More than one million products are shipped daily to end customers and channel partners, spanning a wide range of industry and utility operations, plus commercial and residential buildings. (abb.com 080121)

2.2.4 Process Automation

The main focus of this ABB business is to provide customers with integrated solutions for control, plant optimization, and industry-specific application knowledge. The industries served include oil and gas, power, chemicals and pharmaceuticals, pulp and paper, metals and minerals, marine and turbo charging. Key customer benefits include improved asset productivity and energy savings. (abb.com 080121)

2.2.5 Robotics

ABB is a leading supplier of industrial robots - also providing robot software, peripheral equipment, modular manufacturing cells and service for tasks such as welding, handling, assembly, painting and finishing, picking, packing, palletizing and machine tending. Key markets include automotive, plastics, metal fabrication, foundry, electronics, pharmaceutical and food and beverage industries. ABB has installed more than 150,000 robots worldwide. (abb.com 080121)

2.3 ABB Sweden

The Swedish organization is similar to the global organization with a few exceptions. In Sweden, service is a stand-alone division reporting directly to the regional CEO.

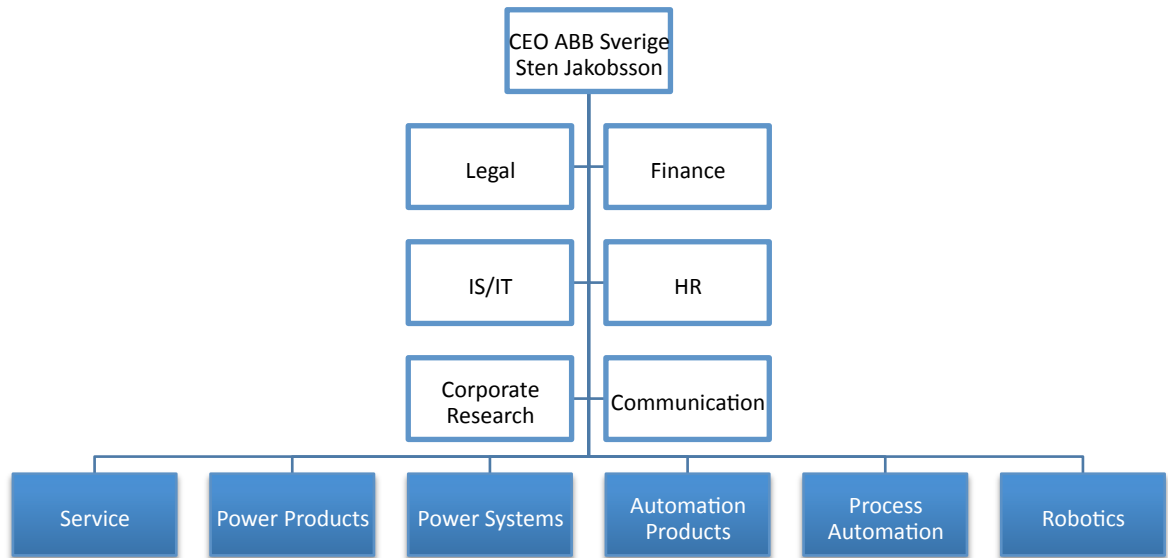


Figure 6 The organization of ABB Sweden, (abb.com, 080121).

The culture within ABB Sweden is to a high degree characterized by entrepreneurship. This has historical roots, traditionally ABB were an organization where each business area acted as a stand-alone company with its own CEO. A culture of entrepreneurship has many positives; a sense of autonomy, less hierarchical organization, faster decision making etc., but there may also be some negatives such as less communication between divisions and a danger of sub optimization. (Strandberg²)

² Håkan Strandberg, manager South region, ABB Service, interview, Malmö, 080407

2.4 ABB Service

ABB Service in Sweden is organized into four separate regions, Middle, South, North, and West region. Robot service, Turbo charging and University, spare parts and call centre are also represented in the Service division but are not organized in regions. The seven business units have their main focus towards service of products and systems. ABB Full Service is also a part of the service division but acts as a stand-alone unit.

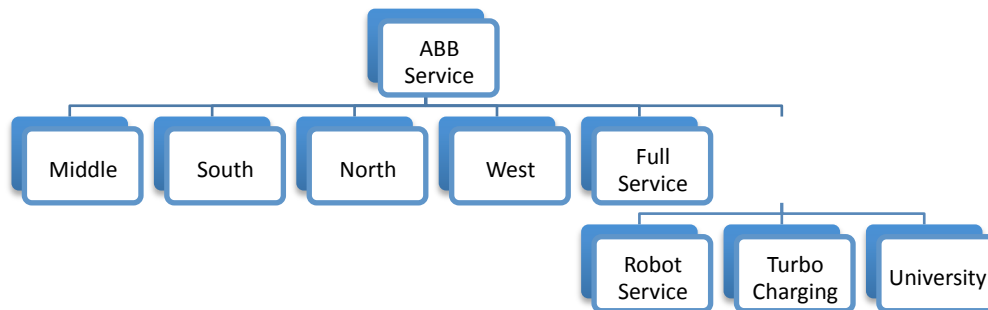


Figure 7 The organization of ABB Service, (abb.com, 080121).

2.4.1 ABB Service – a brief history

Historically service functions within ABB originated from independent product and technology specific workshops, spread out regionally to serve local customers. With each new acquisition, service workshops were added to the organization - all acting independently. In the 70's ABB reorganized its service operations. Steps were taken to create a common unit serving the service needs for all products and technologies. By joining together all the different service workshops in one centralized organization synergies were achieved. The trend has since been a continuous movement from smaller service workshops, close to the customers, toward fewer and larger units catering large regions. This trend has been allowed by decreasing transport costs and the need for expert knowledge and specialized service equipment. (Enquist³)

The traditional way of seeing service has during the last couple of decades changed; the aftermarket and service in particular is becoming an increasingly important part of the business in manufacturing industries. Service has traditionally been seen as a cost

³ Lars Enquist, Sales person, ABB Full Service, phone interview 080130

driver, a necessary evil that stole focus from core operations. Companies of today realize that service activities, properly handled, can contribute significantly to the bottom line and in many cases become one of the key offerings to the customer. This new approach to the aftermarket and service has emerged during the last few decennia. In essence this is about moving from providing service for free to offering quality service solutions and charging for it, viewing service as a product in its own. (Pintelon et. al 2000)

This more holistic approach to service has been adopted gradually by ABB. ABB has realized the potential in its service organization to be a source of profit and has expanded the range of services with regards to a more systematic maintenance mindset. The current view is that ABB provides service to their customers as a means to increase productivity and reliability throughout plant lifecycles. The service and maintenance work should be applied from project start-up to plant close down. This is a decidedly different approach from offering service on a “when need arises”-basis. (abb.com 080121)

ABB’s top priority is in selling products and systems, and it’s possible that this has left its service offering development behind. To develop the potential in the aftermarket can become especially important as a hedge during recessions, which usually hit ABB product sales hard. (Enquist⁴)

2.4.2 The service organization

Table 1 The ABB Service’s sales offering

PRODUCTIVITY INCREASING SERVICES	
FULL SERVICE	
PPM Plant Performance Management	EPM Equipment Performance Management
SUPPORT AND MAINTENANCE SERVICES	
Installation and commissioning	Support
Maintenance services	
Spare parts	Replacement units
ADDITIONS AND UPGRADES OF FACILITIES AND SYSTEMS	
Upgrades	Modernizations
Extensions	Environmental and Energy efficiency improvements
EDUCATION	
Productivity development	Systems and Products

⁴ Lars Enquist, Sales person, ABB Full Service, phone interview 080130

ABB Service offers their customers two types of service;

Productivity-increasing service is a number of maintenance management and consultant services with an aim on increased efficiency; ABB Full Service is responsible for this segment.

Support- and maintenance-service is regular maintenance and repairs offered both on a per-hour basis and as part of a pre-defined package deal of i.e. 100 hours of service.

As the demanded rate of return in recent years has increased on ABB Service and the product-divisions strive for more accurate cost-allocation in the after-market, ABB now has separate accounting for service business within each respective product-division. In the beginning of 2000, ABB started to account service from the business unit to its product-branch in order to get service dedicated solely to ABB products. (Persson⁵)

In ABB each regional product-division is accounted separately to the global product-division at the head office in Zürich, consequently ABB Service reports separately for services stemming from different products. Each product-division is in turn divided into several sub-units, reporting financially as separate business units. (Larsson⁶)

ABB is now pushing hard for an expansion of its service turnover worldwide, aggressive growth targets have been set, and the service business units have the same rate of return expectations as the products and systems divisions. (Persson⁷)

2.5 ABB – Full Service

The ABB Full Service unit is organized under the ABB Service division side by side with the regular regional service units. The regionally autonomous Full Service unit is also a Business Unit organized under the global Process Automation division. The geographical organization defines the business units horizontally and the economical organization and structure works vertically.

An ABB Full Service partnership is a long-term, performance-based agreement in which ABB commits to maintain and improve the maintenance of the client's production equipment. The business idea is to implement a new approach to the client's maintenance activities and with a Full Service agreement; ABB takes over the responsibility for the engineering, planning, execution and management of a plant's entire maintenance activities. This new approach, where the maintenance activities are considered as a profit contributor rather than a cost center, involves; a greater focus on increasing the operational equipment efficiency- resulting in net profit improvements, increasing the reliability of client's assets and through ABB Full

⁵ Knut Ingvar Persson, concept developer P&SS ABB Service, interview, Malmö, 080221

⁶ Karl-Johan Larsson manager, ABB Full Service Development Unit, phone interview 080131

⁷ Knut Ingvar Persson, Concept developer P&SS, ABB Service, interview, Malmö, 080221

Service's modern maintenance practices reduces the need for additional capital and improves ROCE.

2.5.1 History of ABB Full Service

The Full Service concept was developed in cooperation between ABB Finland and ABB Sweden and the idea came up in the late 80's in Finland. The former executive of ABB Service Finland, Kurt Rönqvist, wanted to develop the service offering towards a total responsibility of the customer's maintenance business, together with a team of ABB consultants, he created the blueprints of what today is the ABB Full Service concept. (Persson⁸)

ABB pioneered the concept of outsourcing maintenance and have until today delivered the services to more than 30 countries. The total number of employees in the Full Service business is more than 6 000 employees working at over 150 sites all over the world. (abb.com 080121)

The first ABB Full Service contracts, often characterized by trial and error, were established in Finland in the beginning of the 90's and the Full Service team immediately realized the urgent need to systemize, structuralize and document the Full Service process. ABB Full Service has put considerable work in documenting the process and refining guidelines to be used globally by all regional Full Service organizations. The documentation has been a key factor in, showing a consistent behavior to all customers no matter in which region they operate, insuring mistakes will not be repeated and to further develop the concept. (Larsson⁹)

In Sweden the first contract was signed in 1995 with a dishcloth manufacturer in Norrköping. An important lesson learned from the first projects was that ABB had to secure the customers need for ABB's services throughout the whole contract period. But there are also other examples of customers deciding not to renew the Full Service contract when it is time of the renegotiation of the Full Service contract. This will be described later in the case *Beta*. ABB Full Service often failed to, in the beginning of the development of the concept, show a long-term improvement plan, which often resulted in clients deciding to continue with the maintenance work by themselves. This has gradually changed and over time ABB has become more accurate in their identification of potential customers. Often ABB wins a contract after a time of delivering consultant services to the potential client. About 20-25 percent of initiated Full Service studies result in a contract with a client. (Enquist¹⁰; Strandberg¹¹)

⁸ Ibid.

⁹ Karl-Johan Larsson, Manager, ABB Full Service Development Unit, interview, Linköping, 080129

¹⁰ Lars Enquist, Sales person, ABB Full Service, Linköping, 080129

¹¹ Håkan Strandberg, Manager South region, ABB Service, interview, Malmö, 080407

2.6 The business process of Full Service

When taking on a new client, ABB perform a thorough analysis of the potential in the client's plant. The seven steps in this analysis are:

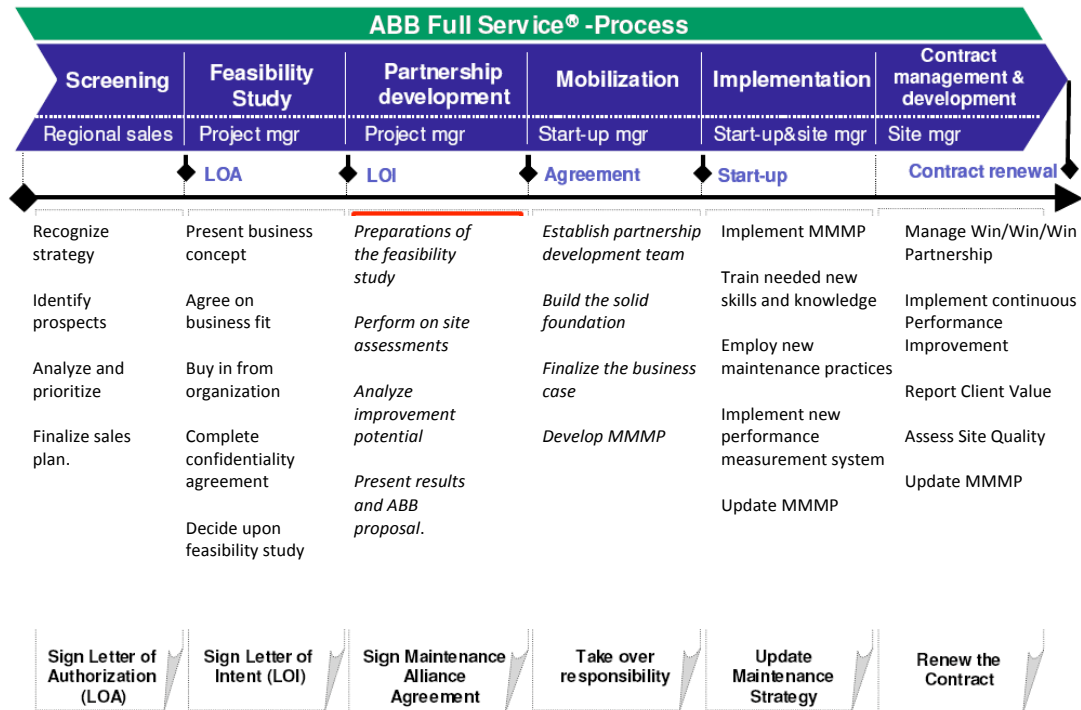


Figure 8 The Full Service business process

2.6.1 Prospecting

The prospecting phase helps ABB prioritize and plan, who, and how to approach the most attractive prospects and the phase has the main objective to create a supportive sales plan for the ABB Full Service sales personnel. A key for ABB to succeed in this phase is to assure that the entire organization have common approaches to share their efforts in an efficient way.

With a targeted sales plan, ABB can increase the effectiveness, seen in the number and volume of Full Service sales, and enables measurement in their sales effort. ABB also measure their activity and ability to move into *screening phase* with selected clients according with planned schedule.

The process model for sales prospecting is divided into the four stages;

1. *Recognize strategy*
2. *Identify prospects*
3. *Analyze and prioritize*
4. *Finalize sales plan.*

2.6.2 Screening

In the screening phase, ABB turn their prospects into potential clients and starts to examine the potential client's improvement potential and readiness for a Full Service agreement. A benchmarking of the site is conducted and a GAP-analysis, with a "current state" and target "future state", is conducted. ABB and the customer also discuss expected benefits and costs (value proposition). The main objective of the screening phase is to get a *Letter of Authorization* from the client to perform the feasibility study.

The process model for screening is divided into the five stages;

1. *Present business concept,*
2. *Agree on business fit*
3. *Buy in from organization*
4. *Complete confidentiality agreement*
5. *Decide upon feasibility study*

The last step is the critical stage, if it turns out that the business-case for some reason is not profitable, the process is halted or terminated.

2.6.3 Feasibility Study

The main objective of the feasibility study is to determine if there is a business fit for ABB (Full Cost Model) and to describe the improvement potential for the client (Value Proposition), realized through the Full Service agreement. Therefore, the feasibility study has to identify the improvement potential between the actual situation, and an ABB benchmark level. Based on the GAP analysis, the Full Service project team is able to achieve the objective. ABB performs a high-level feasibility study in order to ensure improvement potential and to quantify the risks related with a possible Full Service deal.

The process model for the feasibility study is divided into the four stages;

1. *Preparations of the feasibility study*
2. *Perform on site assessments*
3. *Analyze improvement potential*
4. *Present result and ABB proposal.*

Preparations of the feasibility study

The preparation stage takes place both internally and externally.

Internally, ABB makes sure that there is a project team with industry specific know-how in place and an experienced project manager is appointed in order to develop the ABB proposal from the findings in the feasibility study. If the client has a large amount of ABB equipment or systems, the respective ABB business units and CoE are involved in order to combine service and product know-how. Prior to starting the project with clear communication on how to manage the invoices, the set-up of a work number in the financial system is conducted during this preparation phase.

Externally, the client prepares ABB with necessary documents needed and a kickoff meeting with the clients' key personnel and ABB is held.

Perform on site assessments

The on-site assessment stage is conducted in a systematic way when the Full Service team gathers information for the qualitative and quantitative analysis. Following modules is executed during the Feasibility Study-perform on site assessment:

Financial assessment:

This module gives ABB an overview over the different years of the total labor cost, material cost, subcontracting cost and direct operating expenses for maintenance such as telecommunication, IT, travel and living etc. In addition to the data within the client's financial system, ABB investigates the clients' general and administration cost which often is influenced by outsourced maintenance, this since it form the basis for the business case and the value proposition.

Human Resource Data:

This segment aims at identify the maintenance personnel and their functions to get an overview of the age profile, what the average salary cost within maintenance are, etc. Besides the hard data, benefits and the competence level of the personnel is identified, this since ABB need to get an understanding of the possibilities to take over the personnel and the possible risks involved.

Maintenance and Supply Data:

This module's purpose is to form an idea about the maintenance organization; work-order processes, level of planning and the maintenance techniques used, and define if the client has a reactive or proactive maintenance organization. A maintenance expert in cooperation with the client's maintenance manager completes the documentation, planner and supply chain manager.

Performance Data and Improvement Potential

ABB utilizes overall equipment effectiveness (OEE) as a performance indicator of how a machine, production line or a complete process is performing in terms of asset effectiveness. The OEE examines the process in terms of availability, production rate

and quality. ABB defines two types of OEE; business OEE and manufacturing OEE. The business OEE shows the percentage of the total production capacity being used as available production capacity by the management and the manufacturing OEE shows the percentage of the available production time used as valuable operating time.

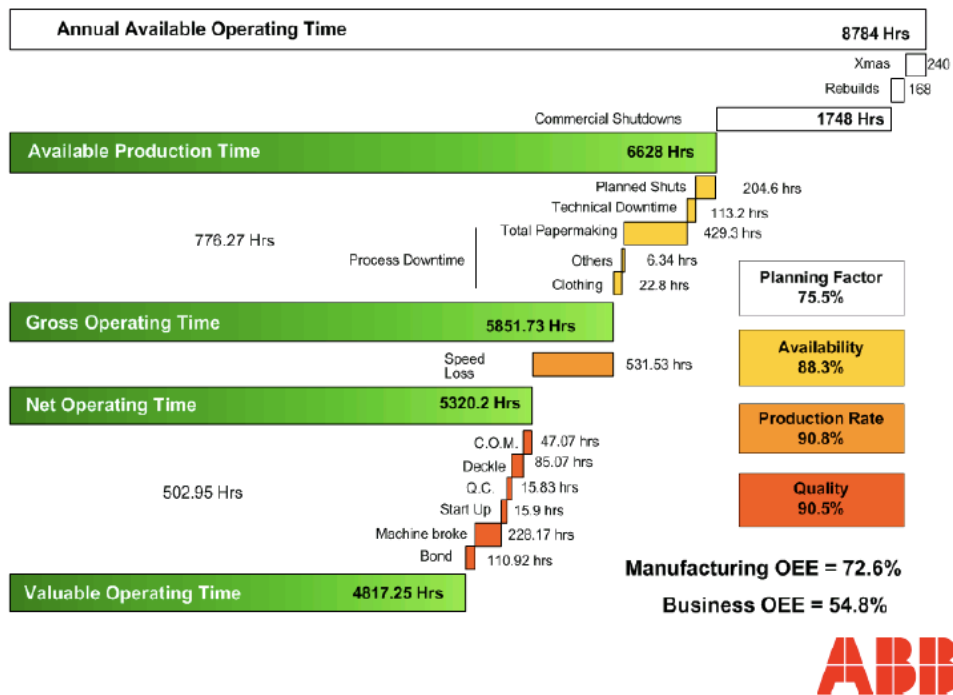


Figure 9 Example of productivity analysis performed during the Feasibility study, (ABB Full Service storylines, 2006)

Maintenance Management Assessment

The Maintenance Management Assessment is a questionnaire approach where representatives of the maintenance personnel express their view of the actual maintenance organization.

Computerized Maintenance Management System

The Maintenance Management System Assessment is a questionnaire that is scored using the knowledge and experience of an ABB expert within Maintenance Systems (Maximo, SAP, etc.). The question set is carried out in several sessions, using a computerized maintenance management system, to provide actual examples and determine the true capability of the software.

Reliability Engineering Assessment

The Reliability Assessment tool is used rating the qualitative assessment in maintenance plans, reliability planning, root cause analysis, and precision maintenance. The reliability measure determines the organizations capability to deliver and provide sustainable reliability and it provides a leading indicator for

measuring factors for consistency and predictability that are required for the plant's increase in service expectations for equipment, people and processes.

Equipment Condition Check

An overview of the equipment physical condition is conducted by a site tour and this module is used for a qualitative assessment rating of each plant based on interviews and inspections. The following elements are assessed; safety and compliance, performance, services and infrastructure, design, extension of life, condition, ease of maintenance and asset management and at the end of the on-site assessment, adjustments and fine-tuning of the data is taken into account before making a benchmark and value proposition.

Analyze improvement potential

This stage forms the foundation for ABB to get the Full Service agreement and to make it profitable. The gathered data of the site is uploaded in the ABB benchmark database, calculating the intermediate and KPI values. The output from the system forms the basis of the report that ABB submitted to the client.

The report shows the gap between the actual situation and the benchmarks for that specific industry.

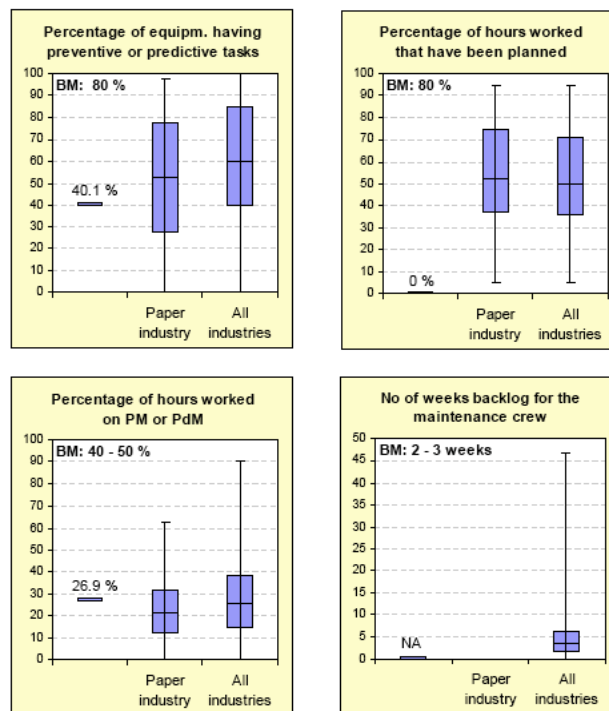


Figure 10 Deliverables for a Full Service contract, (ABB Full Service storylines, 2006)

Client values are quantified and presented within areas of performance improvement, cost effectiveness and intangible factors. The clients' value proposition and the ABB business case is then formed in this stage.

Present feasibility study report and ABB proposal

This is the phase where ABB get the final go/no-go decision and the decision maker is usually the clients' CEO or production director. With a go-decision a *Letter of intent* is signed.

2.6.4 Partnership Development

In the partnership development phase, the Full Service team verifies the potential improvements discovered in the feasibility study and starts defining actions needed to achieve the improvements, all on OEE. ABB has a major focus in creating a Maintenance Management Master Plan (MMMP), which describes all action areas in the first year of implementation. This plan is followed and measured closely both by the Full Service team and the client and is annually updated during the contract.

The objective in the development phase is to sign a Maintenance Alliance Agreement, this since ABB's strategy and agreements always are in long term and require a partnership-attitude to work properly. The agreement, marked by KPI's forms the basis for targets, bonus and penalty schemes. Verification that the value proposition, developed in the Feasibility Study, is the shared baseline for client benefit and ABB price, this since ABB see all verifications necessary mainly for one thing; risks mitigation. The technical plan to achieve the partnership objectives is included in the MMMP.

The process model for the partnership development is divided into the six stages;

1. *Establish partnership development team*
2. *Build the solid foundation*
3. *Finalize the business case*
4. *Develop MMMP*
5. *Develop mobilization and communication plan*
6. *Resolve legal issues.*

Establish partnership development team

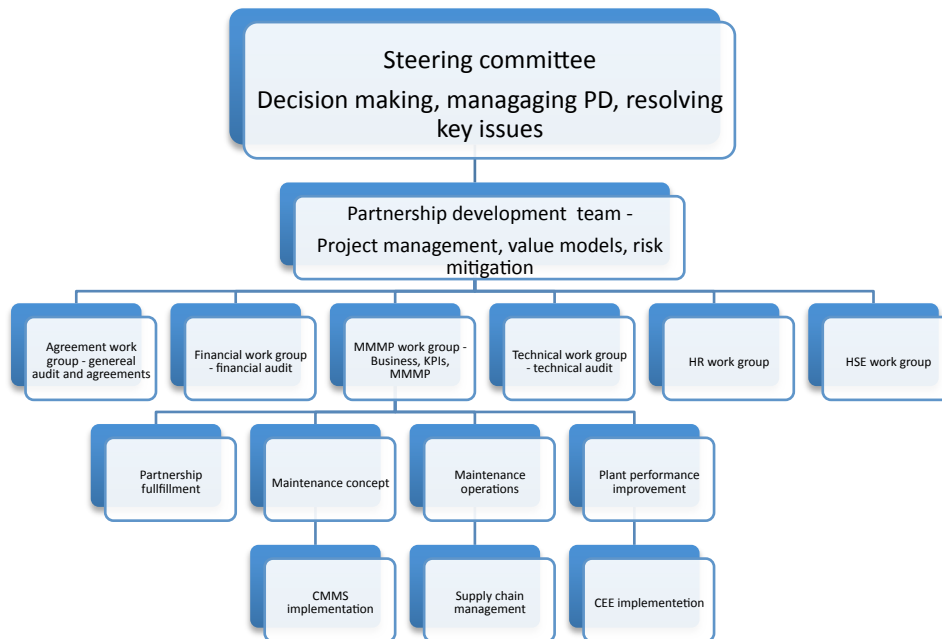


Figure 11 The organization of a Full Service team

The Steering Committee (SteCo) makes decisions and directs the course of the partnership development phase and both the client and ABB each appoint two to three members to the SteCo.

The Core Team consists of two to three members from each party who understand the business and management drivers of the project. Their primary roles are to assist in running the project on a day-to-day basis and to keep the objective and schedule clear.

The Project Manager is appointed by ABB and reports to the SteCo and ABB presents on a weekly basis the actual progress of the project at formal SteCo meetings. The project manager is also responsible for partnership development phase cost follow-up and reporting.

The Working Groups are formed for developing the agreement. ABB need; *HSE group* to do Health, Safety and Environmental Audit, *Technical group* to perform Asset Health Check, *HR group* to work on HR Audit and people/communication issues, *Financial group* for Financial Audit and sharing the direct and indirect maintenance costs, *Legal group* to develop the Maintenance Alliance Agreement, and the *MMMP group*. The MMMP team consists of two to four sub-groups. Specific

ABB Full Service competence and experience is needed to create partnership fulfillment activities, build the maintenance concept, develop maintenance operations, to design the plant performance improvement plan, and to define the scope of the Maintenance Alliance Agreement.

Build the solid foundation

In the partnership development phase, a solid foundation for the agreement is created with the client and the aim is to clarify and reinforce the facts needed to establish the Maintenance Alliance Agreement and acts to satisfy several of our decision and risk analysis requirements. The main issues under *building the solid foundation* are:

Financial Audit:

ABB analyze the financial accounts of the client's business for the previous three years and for the present budget. The maintenance cost is aligned with the defined Full Service scope and important parts are to analyze the personnel costs as well as client's administrative costs.

Health, Safety and Environmental Management:

Client and ABB specialists are utilized to establish safety practices and since the work is performed on the client's site, ABB adapts to the clients system.

Technical Audit:

Understanding the technical risks is of key importance in developing a robust business case. ABB evaluates the output of the reliability analysis in the feasibility study and search for large unaccounted maintenance deficiency and once the plant related risks are understood; ABB defines the depth of the technical audit. Depending on the severity of the case, the competence level and workload related with the technical audit must be determined. ABB establish a rough criticality analysis to rank the most important equipment in the plant from a criticality point of view. Usually, most critical equipment gets the most advanced maintenance, while less critical equipment might be run to breakdown. ABB internal or external consultants may need to be engaged to execute an industry specific in-depth Asset Health Check.

HR Audit for Human Resources planning:

The main issue in this stage is to develop a complete review of the personnel and ABB's task is to identify potential liability and not to accept any liability from the clients past, this since salary levels and commitments often are the most critical issue affecting the business case.

Legal Audit

In this stage, the clients specific and potential legal issues are controlled and audited, if there are risks and doubts, ABB provides a separate legal audit report.

Mitigate risks.

The purpose of the audits mentioned above is to help ABB to understand and to mitigate the risks involved. A brainstorm scenario-based tool is used that asks what can happen and what can be done to prevent the potential risks.

Finalize the business case

The ABB project manager builds and maintains the business case for ABB and the value proposition for the client. It is therefore necessary that the baseline development during the feasibility study is correct and corresponds to the details and implications of the upcoming contract. Defining the scope of the services require much more detail than what is provided in the feasibility study. This since it must outline, in detail, the clients expectations and ABB's objectives and deliverables for the maintenance organization outsourced to ABB.

When negotiating the agreement financials, ABB's natural starting point is the value proposition and maintenance cost baseline from the feasibility study.

Develop MMMP

The MMMP is regarded as the most important working document of the partnership agreement and the main steps in developing the MMMP are:

1. A detailed study in order to verify the present maintenance situation, including review of OEE and Key Performance Indicators (KPI's).
2. The maintenance strategy is established linked to the client business and production strategy.
3. The study of the gap between the current situation at site and forthcoming the maintenance strategy.
4. The creation of the MMMP that implements ABB's strategy, including core, management and processes needed to execute the maintenance.
5. A visualization of the MMMP targets
6. A refinement of the full cost business model, linked back to the total maintenance cost baseline.
7. An establishment of the five-year KPI targets.
8. A summary of the OEE solutions.
9. Necessary preparations of the risk review process.

Mobilization

Systems and networks are installed, the new maintenance organization is put in place, implementation plans are finalized for HR, facilities, supply management, and accounting. A communication plan is developed to facilitate change management and identify issues early in the process.

Implementation

Process execution begins with the start-up of projects and training of personnel and new processes are introduced.

Contract management and development

The alliance management process governs the relationship and continuous improvement programs are introduced to increase performance at the site. This is described with the help of three cases:

2.6.5 Cases

A typical ABB Full Service client have clear improvement potential in its maintenance work, is aware of the problems but lacks time to address the problems by themselves. Clients that choose to adopt the ABB Full Service concept often wants to be able to focus on their internal core competence.

“If you for an example are a steel producer, you should worry about factors like how the price of iron ore develops and your actions according to that, rather than worry about if your machines are fully functioning”. (Larsson¹²)

ABB Full Service offers a more reliable production that always results in improvements in the performance of the client’s productivity and one of the most important aspects of the Full Service concept is creating a new work culture. The aim is to get the maintenance work at the client’s site more focused, continuous and where long-term improvement is the new norm. The effectiveness of operations, the optimization of costs and flexibility has therefore high priority and by outsourcing the maintenance personnel, the plant operator will be able to reduce staff and cut costs through improved efficiency.

The *Alfa*, *Beta* and *Gamma* case presented below serve as practical examples of the ABB Full Service business.

Case Alfa

Client Alfa, who is one of the Nordic region’s largest candy confectionery companies, has since 2000 a Full Service contract with ABB concerning the maintenance of the factory in the middle Sweden region. This contract developed and during 2002 ABB took over the full responsibility for all maintenance personnel on the site and of today about 30 people have ABB as their employer but the client Alfa as their place to work.

“The basic purpose with the service contract is to make our production competitive” says the production manager at Alfa. “We want to take advantage of ABB’s knowledge and methods in our other projects, i.e. when planning the purchase of new machines.” the manager¹³ concluded.

ABB’s maintenance personnel are in some ways involved in the development of the factory and by cross-functional contacts they are, together with the customer’s machine operators, working to overcome bottlenecks in the production and achieve a mind-set focusing on continuous improvement. The aim from ABB at client Alfa is to focus not only on technical solutions but also on improvements within areas such as organization, operator routines and other, “softer” aspects of the production.

¹² Karl-Johan Larsson, Manager, ABB Full Service Development Unit, interview, Västerås, 080213

¹³ Anonymus, production manager, Alfa, interview, city X, 080408

“The unique part of this contract is that we at ABB can get involved in so many ways” says the site manager¹⁴ and continuous; “but it has to be an active and trustful relationship where we work together and agree on the prioritization together and this relationship has to work well from the factory floor all the way via the operators to management and executive board”.

The goal for the efficiency project is to reach higher OEE-values. “We meet 15 minutes every day to discuss the latest values. Are the numbers red we must act quickly and if they are green we are closer to reach the goals we have set up.” says the production manager and he continues; “every percent at the green side means that the price per unit lowers, every piece of chocolate has become cheaper to produce.”

Since the beginning the contracts have been performance based with the fulfillment of certain goals linked to bonuses as incitements. The service contract also states how the maintenance work should be executed and developed within the joint venture.

“The presumptive maintenance work shall result in that we choose to shut down a machine for maintenance when we want it to stand still, a stop shall be planned, not due to a failure” explains the site manager¹⁵.

Many customers, like Alfa, have not realized the full extent of automation improvement potential in their production. They still label the employees as electrician and mechanics, without realizing the cross functional nature of industrial automation. To change this ABB needs to educate the customer about automation and its potential in their plants. In the case of Alfa, automation expertise was injected by ABB through the site manager, who has a background in the ABB Automation division. By taking advantage of this experience ABB as a whole will maybe benefit in terms of an expanded sale within the automation area. This Alfa case will serve as a example in this study, especially when it comes to showing how projects within the automation and power areas have been carried out until now and what lessons can be drawn from these.

Case Beta

Client Beta, who acts in the food-process industry, agreed on a Full Service contract in 1997 concerning the maintenance of their factory in the southern Sweden region. The Full Service concept had, at this time, a greater focus in strategy and management but was not fully developed. Furthermore, the former ABB employed site-manager did not have the same amount of guideline and standardizations as of today and relied instead on informal networks and connections between some of the existing Full Service sites in Sweden.

When the client contacted ABB, the client had a lack of routines and a various number of different complexes, often poorly maintained machines. The fact that the maintenance-personnel also were inexperienced, combined with a complex an

¹⁴ Anonymous, site manager Alfa, interview, city X, 080408

¹⁵ Ibid.

inappropriate work schedule, made the situation untenable and resulted in many malfunctions of the production.

When the contract begun, ABB transferred 30 people and immediately began to restructure their work-assignments. In the beginning the client had all their maintenance divided into separate workshop and the collaboration among them was insufficient with no effects of synergy within the site. The Full Service unit therefore put a lot of effort in consolidating the maintenance work of the client, something that in the beginning much was characterized as trial and error. The Full Service unit implemented routines and directives with the aim of getting the personnel to constantly be thinking in terms of preventive maintenance in their daily activities. Measurements and control-tools of how the preventative maintenance developed were also implemented at the client site.

The Full Service management had, in the beginning of the contract, also difficulties in how to proper handling the change of culture the transferred maintenance organization felt, which resulted in a delay when the new maintenance system was implemented. An action such as pinpointing the maintenance personnel, working sorely with preventive maintenance, giving them yellow caps serves as an example of basic and concrete way the site manager tried to implement the new mindset, and overlap the culture issues within the maintenance organization.

After almost a year, the Full Service unit successfully had created intended routines and necessary structure at the site, which immediately resulted in an increase of the dependability of the maintenance. Adequate measurements, continuous follow-ups and a more organized and centralized maintenance organization were some of the activities ABB brought to the client.

In 2000, the former site manager estimated that approximately 60 % of his intended work was achieved when the client chose to discontinue the Full Service contract¹⁶. This since the client never saw the direct benefits of having ABB as a Full Service partner, now that their maintenance fully functioned. The Full Service unit did not, in retrospect, make themselves indispensable, showing the client the expanded benefits in having a long-term relationship, resulting in a client wanting to do the same thing at a much lower price.

ABB managed, during this Full Service contract, sell two complete ABB robot-systems as well as an ABB signal-box. However, as the former site-manager¹⁷ explains “There were many more opportunities to further develop this potential, to sell products from other ABB divisions, but we were maybe not sufficient alert and active when those opportunities aroused”.

Case Gamma

Charlie has since 2001 a contract with ABB Full Service concerning the maintenance of the factory in western Sweden. The co-operation started already in 1999 by ABB taking over the management of some maintenance areas and personnel. This

¹⁶ Anonymous, site manager Beta, interview, city X, 080407

¹⁷ Anonymous, former site manager Beta, interview, city X, anonymous

developed and by 2001 when the Full Service agreement was signed, the maintenance-organization included 100 people.

The maintenance-organization, partly owned by ABB (51 %) and the client (49%) could serve as a typical Full Service agreement. The client is in the steel-industry and had, before the co-operation with ABB, some problems with maintaining their business profitable.

The client wanted therefore limit their maintenance-cost and by outsourcing the maintenance to ABB Full Service, with a fixed cost, the client has had the opportunity to focus in their core-business, something that has resulted in a much more reliable production cycle.

During this critical period the client also wanted ABB to investigate the potential for smaller improvements within the site that could increase the profitability of the site. This resulted in a thoroughly and expensive analysis made by a consultant from one of the ABB product divisions. The consultant advised the client to invest approximately 300 million SEK in ABB products, something that the client not nearly could afford or was willing to do. This resulted in a view from the client of ABB as only profit-eager only wanting to sell more ABB products when it instead was a simple lack of communication. The client, site manager and the consultant did not fully agree on what they wanted to achieve with the investigation. ABB had therefore hard to get attention to other areas of improvement the ABB solutions could offer.

The ordinary, maintenance operations have however gone very well with a satisfied client and the Full Service contract were extended in 2005 for another four-year period. About 50 % of the activities that the Full Service unit conducts are basic maintenance and the other 50 % are modifications, reconstruction and project.

A problem that the Full Service organization has is that the employees of the site do not clearly see the benefits in having the Full Service organization at the site. This combined with the lack of communication resulted in the 300 million SEK improvement proposal from the consultant has in some cases resulted in a negative approach towards ABB, seeing organization as an outsider only wanting to profit from on the client. The Full Service organization has therefore difficulties in finding the correct way of decisions when trying to provide the client improvement suggestions in other areas where they can contribute in.

When the client is a recipient toward new proposals, they often want subventions and price-reductions

2.6.6 The business of Full Service

The main benefits of a Full Service contract are;

- Improved plant performance with clear financial impact
- Focus on reliability and life-cycle management
- Maintenance work is managed as a standalone business

- A service mindset and culture is created
- The client gets access to ABB Know-how

The client might be able to achieve the same result by keeping the maintenance in-house, but the client will not have the same timeframe or cost structure as with a Full Service agreement. It will take a client up to three times longer since new methodologies has to be brought in by external consultancy and different resources, etc. (Samuelsson¹⁸)

A fast Full Service process, from the first contact in the Screening phase to the Implementation and start up, takes about a year and it is often the Partnership Development phase that absorbs the most resources and time since it must be made very thoroughly.

70-75% of the Full Service analysis process is the same regardless of the client industry. The methodology is the same for a paper mill and a candy manufacturer, but the maintenance impact varies a lot. If a paper mill is forced to a stand still due to a malfunctioning engine, the owner loses about 100 000 SEK every hour. The same figure for the candy manufacturer, if one of the production lines is forced to shut down, is about 5 000 SEK every hour. (Staudinger¹⁹)

When setting up a business together with their clients, ABB sometimes use an alternative procedure including the creation of a new company, see *gamma* case. This new company is initially owned by the clients and takes over the responsibility for the maintenance personnel. Gradually ABB buys the shares of the company to eventually own it by 100 percent. The procedure solves the potential problem of having to renegotiate the employment contracts for the maintenance crew of the client's site. (Larsson²⁰)

Full Service of today has, a great potential to grow in volume and improve profitability. The industrial service market in Sweden has not yet reached its peak even after several years of continuous growth. (accenture.com 080331; Enquist²¹)

ABB's product divisions, like Automation, acts in more mature markets relative to the service division; as such ABB Service's first priority is in growth, not in cutting costs. A global recession would threaten this trend, potentially cutting demand for ABB's Service customers and in the long run also ABB Service. On the other hand, maintenance is traditionally regarded as a stable and relatively recession-proof market.

“ABB have to be the best in a sport that continuously is getting tougher to win” – (Samuelsson²²)

¹⁸ Bengt Samuelsson, Senior consultant, ABB Service, interview, Västerås, 080214

¹⁹ Frans Staudinger, Senior project manager, ABB Full Service, interview, Västerås, 080218

²⁰ Karl-Johan Larsson, chief of ABB Full Service Development Unit, interview, Västerås, 080213

²¹ Lars Enquist, Sales person ABB Full Service, phone interview, 080325

By choosing a more systematic approach to production, Productivity Service Performance and Best Practices can be measured and shared throughout the organization. If the client is to develop a “world class maintenance operation” effectively, it has to be a part of the customer’s core process. Many industries have problems in keeping the maintenance function focused and need help in developing the operations; ABB Full Service solves these issues.

Often the key selling point for ABB Full Service is “How much is every 1% increase in OEE worth to you?”, according to Larsson, therefore it is important to link the results from the initial analysis to economic figures “If we help you increase your OEE by 1%, your net profit will increase by 1 million SEK”, Larsson finishes²³.

²² Bengt Samuelsson, senior consultant ABB Full Service, interview, Västerås, 080203

²³ Karl-Johan Larsson, chief of ABB Full Service Development Unit, interview, Västerås, 080213

3 Problem Discussion

This chapter describes all the relevant problems that were encountered during interviews with ABB Full Service representatives and their clients. The interviews, together with visits to ABB Full Service sites, have provided insight of the dilemmas and problems facing ABB, both long-term and short-term.

The purpose of this thesis is, according to the assignment from ABB, to develop the current ABB business model for Full Service by expanding the concept. This initial assignment has been developed during the process and complemented with information gathered from numerous interviews with personnel at ABB sites around Sweden. Through this problem analysis the aim is to further clarify the assignment, the objectives and form a basis for identification of relevant theory.

The method for this part has been to interview key personnel within the ABB Full Service organization and their clients. The first persons to interview were recommendations by the tutors of ABB. After this first round of interviews, the authors decided independently about whom to interview and when. However often acting on recommendations from the ones already interviewed, suggesting who could provide relevant information.

From the interviews a number of problems were identified. Each problem was ranked by relevance to the thesis; high, low or none, listed in this chapter are the problems with the higher scores. Some problems identified have consequently been sifted out due to irrelevance to the main assignment from ABB. These selections have been crosschecked with representatives from ABB in order to guarantee its accuracy and relevance.

To reach the objectives of the study, external as well as internal problems are included in the list. There are two different types of problems present:

- Problems with the current Full Service business
- Anticipated problems with reaching the objectives of the new strategy

In order to structure the various problems, and find similarities, the problems have been divided into four different classes. The class relates to where in the organizational hierarchy of ABB the problem is contained, e.g. a problem concerning the Full Service organization at site is categorized in the first group. However, if there is an issue between the Service organization and ABB Sweden, it is categorized in the last group. In other words, if any problem has connections to more than one hierarchical class, the problem is listed in the outer group of the two.

There is a potential problem with this method, some problems can e.g. be represented twice or more by different interpretations and formulations made by the authors. Other alternatives could be to not organize the problems at all to stay objective, or to organize them by the order they were identified. Four different relevant dimensions were identified that could be used:

- Full Service phase
- Type of services
- Organizational scope
- Affected area

To categorize the problems in groups by organizational scope seemed to be the natural choice. In the final analysis the use of two different frameworks including all the four above dimensions ensures that all aspects of the problems are included.

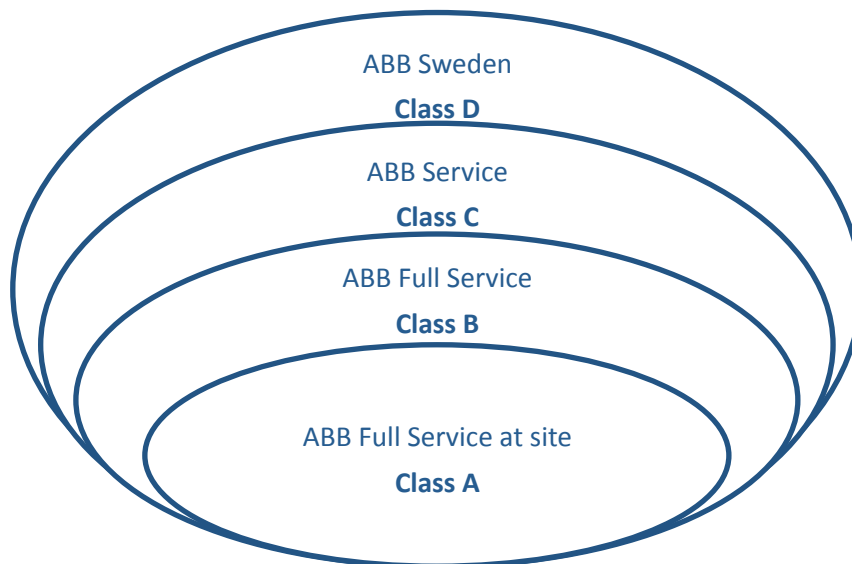


Figure 12 ABB's hierarchical classes

3.1 Class A – ABB Full Service at site

The problems sorted in *class A - ABB Full Service at site* is defined as; matters relating exclusively to the ABB organization present at the client facility, consisting of transferred client employees and ABB's site manager.

A.1 - The transferred maintenance-staff at the client site do not have the sufficient breadth in their competence in order to identify improvement opportunities and the overall sales potential of the site.

Priority: High

ABB has long understood the need to properly educate new employees in their specific tasks, but there is still need for a more technical competence within the maintenance-team. Maintenance-personnel must occupy several different competences in order to see the big picture and to continuously identify new ABB-opportunities at the client site. In order to help widen the scope of Full Service, increase turnover and cross-divisional sales, Full Service-staff at site must be competent enough to come with improvement suggestions. The maintenance-personnel must support their site manager and enlighten him in both specific and general improvement-areas where ABB can expand their scope. ABB University has this capability, but there is no standardized procedure or process within the Full Service organization to broaden the employees' competence in this regard.

A.2 - The ABB employed site-manager comes in a conflict-of-interest position when promoting ABB products

Priority: High

As an ABB employed site manager it is essential to maintain the client's confidence in that the ABB Full Service organization works 100% for the best of the client. Therefore it is problematic to put pressure on the Full Service team at site to increase sales of ABB services and products. It is however within the site-managers tasks to suggest improvements in increasing productivity and lower costs at the site; the problem arises when these suggestions are linked to the sales of ABB services and products. How can the client trust that the suggested improvements are not just a means to increase ABB sales?

A.3 - The ABB Full Service team lose specific site competence when the client retains and reassigns their best personnel, leaving less experienced staff to work for ABB.

Priority: Low

The customer tends to pinpoint and hold on to more competent personnel, assigning them to other departments, and leave less competent staff to ABB. This leaves the newly assembled Full Service team at site with a lack of knowledge in key areas of the facility. That the client's works to retain their most valued personnel is natural and can be hard to avoid. However, there are good reasons for the client to cooperate and facilitate this knowledge to ABB in some manner way.

A.4 - The transferred client employees at site continue to use their old networks and supplier-connections, even if ABB could provide the client a better solution.

Priority: High

In order to increase ABB-sales the transferred employees must wholly switch to an ABB mindset. The problem is that old ways of solving issues remain

and staff often chose to use the same service suppliers as they have always done. This is certainly not good for ABB's Service division as they lose potential sales opportunities and it may not be in the best interest of the client either as there is a good chance ABB will solve the issue in a more efficient way.

A.5 – When entering a new contract there is usually a substantial difference in attitude and culture between transferred employees and the ABB Full Service team.

Priority: High

One of the most important things ABB brings to the arrangement when transferring a maintenance function is in forming a new mindset for, and putting higher demands on, the maintenance staff. This is difficult to implement and there are often some employees that are hard to reach with the new agenda. One of the underlying problems in this area is that there is no common approach to working with competence development for all Full Service organizations. There are a lot of good examples from different sites but most work in this area seems to be on an ad-hoc basis.

3.1.1 Summary Class A – ABB Full Service at site

There are two overall issues in this group of problems. One is the lack of sales focus in the Full Service organization at site. The guidelines are lacking in this aspect and there are no demands or incentives on the Full Service team at site to drive sales or in any way increase the presence of ABB. Creating routines and developing an internal process with focus on driving sales could possibly solve these issues. The other issue is in developing the competencies of the transferred staff, forming them to become highly efficient maintenance employees with the right mind-set.

3.2 Class B – ABB Full Service

The problems sorted in *class B – ABB Full Service* is defined as; matters relating to the ABB Full Service organization and issues between Full Service and the various site organizations. This includes sales representatives, concept development staff and management.

B.1 - ABB Full Service Development Team has deep knowledge in maintenance, but lacks updated knowledge of systems and products, which is required to identify the total need of the customer.

Priority: High

Although most employees in the Full Service Development Team have a background from the product divisions, they lack sufficiently updated knowledge of products and systems. This is an obstacle in reaching the new objectives of Full Service. It is essentially an issue of broadening the competence of the organization in product and technical knowledge. The Full

Service organization is experienced in analyzing the improvement potential of the clients' maintenance and has put considerable work in documenting the process and refining guidelines, ensuring world-class maintenance to the client. But the Full Service organization does not have a process for analyzing the client's overall improvement potential. In order to expand and deepen the Full Service concept, it is of great importance to work proactively and point out improvement areas outside of pure maintenance. This would require the incorporation of resources and competencies from the product divisions.

B.2 - ABB Full Service does not have a structured approach to contributing to cross-divisional sales such as products and services.

Priority: High

ABB Full Service has an intimate relationship with the client, one that is unique compared to the product divisions of ABB. By working in such close cooperation ABB has an opportunity to influence the client in purchasing decisions and new ventures. These missed opportunities are not only resulting in the loss of a possible sale, ABB also misses a chance to tie the customer closer by showing how they can be an asset for the client. ABB should always have the client's best in focus and therefore one must not push ABB products when there are better solutions. However, the Full Service organization could do more to drive sales and push for improvement projects. These will in turn inevitably result in increased cross-divisional sales for ABB, as the client will pick ABB as supplier in at least some occasions without being influenced to do so.

B.3 – In some cases the screening process needs to be improved in order to more efficiently target potential clients.

Priority: Low

ABB Full Service has had problems with selecting appropriate clients to approach with the Full Service concept. When the Full Service business was introduced on the Swedish market, the eagerness to close deals was strong and ABB failed to ensure that clients completely understood the concept and whether they were willing to commit to the deep level of partnership that is required. Currently the rate of conducted feasibility studies versus signed contracts is about 25%, improving this rate is of course highly interesting for ABB. There is also another aspect of this problem, in the past clients have abused the Full Service concept as a way to get rid of maintenance staff before closing down a factory or in other cases thought that ABB would replace most of the staff. Misunderstandings like these must be avoided as early as possible in the screening process. Some of these issues have been resolved and today ABB is better at deciding whether a client is suitable for a Full Service partnership or not.

B.4 - The Feasibility Study phase of the process does not include power and automation aspects.

Priority: High

During the Feasibility Study, ABB need to include processes and routines to more actively sell services within power and automation. There is for example no lifecycle-analysis included in the process today. Could the Feasibility Study be expanded by such extra analyses and is the customer willing to pay for it? Perhaps ABB is willing to pay for it with the possibility of extended future sales based on analyses such as this?

B.5 – It is difficult to expand a Full Service agreement where the client uses competitor equipment for the most parts of their site.

Priority: Low

Some of the Full Service clients have a large installed base of competitor equipment. It can be difficult to sell ABB products and systems to these clients. For example replacing a rival control system with an ABB system can be up to three times as expensive compared to updating the current system.

B.6 – ABB Full Service need to offer continuous long-term added value, in some cases the client decided that they could retake the maintenance function after ABB has made the initial transformation.

Priority: High

In the past there are instances where ABB has failed to show the client the benefits of keeping the partnership long term. There is always the risk of losing the contract because the client thinks they can maintain the organization established by ABB at a lower cost. There are other instances where clients experience they are not receiving the full benefits they were promised by partnering with ABB. The clients believe they should be offered more of the knowledge and solutions from divisions outside of the Full Service unit.

B.7 – There is not enough sharing of knowledge and experience between different Full Service sites.

Priority: High

There are a lot of great ideas and different ways of solving problems on the various Full Service sites, but there is no organized process through which to share these. Good practices need to be embraced across all sites. Also there is no exchange of technical skills between the site organizations. Overall, little attention has been put to increasing synergies across the partnerships, something that could be beneficial to both ABB and the Full Service clients.

3.2.1 Summary Class B – ABB Full Service

Just like in the previous class there is a lack of routines and processes to support sales of ABB products and services. Synergies between Full Service sites on one hand and synergies between Full Service and ABB on the other are not realized to their full potential. How can the Full Service organization help the personnel at site towards a more structured approach to the sales work? There are also knowledge issues within the Full Service organization; how can the organization build competence and utilize the expertise of other ABB divisions?

3.3 Class C – ABB Service

The problems sorted in the *class C – ABB Service* is defined as; matters relating to the ABB Service division and issues between ABB Service, Full Service and the various site organizations.

C.1 - There is a lack of coordination in sales efforts between Full Service and the other units of the Service organization.

Priority: High

One of the key elements of this study is to analyze how to induce the sale of more product service within the Full Service concept. In other words there is a lot of untapped potential to sell more specialized product service packages at the Full Service sites. There is no structured and standardized approach to sharing sales information and passing on leads. There are certainly sites where this works well, but this is usually based on informal personal networks and without a standardized way of working with cross-divisional sales some opportunities will be missed. How should Full Service and Service interact and help each other for mutual gain?

C.2 – The current way of organizing minor and major Full Service contracts differently within the Service division have some drawbacks.

Priority: Low

The current organization of Full Service is a compromise. On one hand to have the minor contracts organized within the regional Service divisions helps to support an organization that would be too spread out geographically otherwise. Also, for minor Full Service contracts the coordination of service sales is better since they communicate within a common organization. On the other hand, sales coordination is a more serious problem for the large contracts that are handled on a national level by the Full Service organization. Also, by leaving the minor contracts outside the national organization ABB may not give them the full support they need. On a more general level, this organization may work well for now, but in order to take the next steps for the Full Service business a unified organization would simplify communication and coordination across sites.

3.3.1 Summary Class C – ABB Service

These problems mostly stem from various interaction issues between different units within the ABB Service organization. The problems are linked to the organization, the coordination and the communication within Service division. How can ABB Service units work together and find more symbiotic relationships?

3.4 Class D – ABB Sweden

The problems sorted in the *class D – ABB Sweden* is defined as; matters relating to the entire ABB organization in Sweden and the cooperation between ABB and the Full Service organization.

D.1 - Full Service needs to incorporate services from ABB's power and automation divisions in order to expand their offering.

Priority: High

This is one of the core issues. In order to expand the Full Service business, the processes must be developed along the lines of establishing collaborations with other ABB divisions. Full Service of today only offer fundamental maintenance and are not organized or have the right processes to handle a broader role within the customer organization where the full competences throughout ABB, such as systems and product services, can be utilized.

D.2 – The Full Service organization needs to manage staff with specialist competences such as automation experts and keep them up to date in their respective fields.

Priority: High

Experts with a special field need to be organized in a way that keeps them up to date but at the same time deeply involved in the client's site. This problem is essentially about the need for the expert to be part of both his technology division and the Full Service organization at the same time. The Full Service organization needs to develop a system for how to handle experts with special competence.

D.3 - The ABB-divisions are not sufficiently aware of the Full Service concept

Priority: Low

ABB personnel from all divisions are constantly working with industries all over Sweden. If the divisions are not fully aware of how the Full Service concept works, they will not be able to identify suitable clients for a Full Service partnership and relay the tip to sales staff at Full Service. Another benefit of keeping all divisions aware of Full Service is that it will facilitate better cooperation and understanding when it comes to exchanging expertise and resources.

D.4 - There are sometimes resource allocation problems between the product divisions, the Service organization and Full Service due to the internal pricing system.

Priority: High

In some situations, one unit can get a much higher price when directing an expert to work with an external client than what would be paid by lending the resource to another unit within ABB. Full Service is pressed to offer low prices to clients on services such as technical analyses, but the analysis consultants from the product divisions expect a higher price from external clients. This problem is especially relevant during favorable market conditions when there is a constant external demand on the product division's consultants. Full Service sees these services as a way of reaching a contract or expanding an existing contract, i.e. the lower price is justified by increased sales in the long run. This perspective could be useful for the product divisions as well; an analysis may lead to investments in ABB equipment.

D.5 – Life Cycle analyses and other services are sometimes performed for free within the ABB organization as a means to sell equipment, at the same time ABB Full Service can charge the client for the same kind of services.

Priority: Low

It is not good if different divisions of ABB treat the same client differently when it comes to pricing policies. It goes against the idea of "One ABB", where clients are supposed to perceive the different units and divisions within ABB as one, one company to communicate with, one company with consistent behavior and policies. At the other hand it is difficult to organize one unified sale approach towards a large client with 10-20 connections to ABB and its divisions.

D.6 – As a whole, ABB divisions are not sufficiently cooperating in sales, many opportunities may escape, both in selling equipment through Full Service partnerships and in establishing Full Service contracts through the product divisions' connections.

Priority: High

Full Service does not utilize existing partnerships as an alternate product sales channel and the business model needs to be developed in order to expand the concept reaching beyond the service organization. A Full Service contract is an excellent way of selling products seamlessly and continuously and this potential is untapped today. Likewise, ABB has a great many connections to Swedish industry every day through its product divisions, a way of developing Full Service contracts through some of these contacts need to be properly established.

D.7 - Full Service is not always taking part in the sales process when ABB negotiates major industrial investments such as new factories.

Priority: High

By being a part in the planning of a new site, Full Service will internalize their maintenance concept from the very beginning. There is a big potential in this kind of projects that is not fully exploited by ABB and Full Service. A good example of this potential is the biggest contract of Full Service in Sweden; the Gamma case and their site. Even if these major projects are rare in Sweden, Full Service should be involved from the very start, assessing a potential beneficial partnership. This holds both for greenfield investments as well as major developments of existing industries.

D.8 - How can ABB act coherently in their client interface considering a client can have many different connections at one time with various branches of ABB divisions?

Priority: Low

There are sometimes complications in the interface between different divisions, Full Service and clients. There are misunderstandings and miscommunications due to the fact that there is no central ABB position through which issues are handled between the client and the various ABB businesses. How can ABB strive towards the concept of “One ABB”, that clients perceive ABB as a one contact node, a common voice regardless of specific business?

3.4.1 Summary Class D – ABB Sweden

The overall issue in this group of problems is that Full Service is not tied tightly enough to the rest of the ABB organization. There is a lack of consciousness in other divisions of what the Full Service organization can offer the rest of ABB, there is also a deficient communication within ABB during the sales phase, and the cost allocation structure of ABB undermines many attempts of a more thorough cooperation between Full Service and other units. ABB should put more focus on the opportunities Full Service has to offer the whole organization by their continuous presence at clients' sites.

3.5 Analysis of identified problems

To get an oversight of all the problems they have been analyzed further through two additional frameworks.

Organizational scope versus affected area

This framework visualizes what organizational scope problems refer to and what kind of area they affect. The organizational scope dimension has been used to classify the problems throughout this chapter, so it should be familiar by now.

The different areas that have been considered are:

- *Organization* – Does the problem concern organizational issues?
- *Internal Communication* – Are there communicational aspects of the problem within the organization?
- *External Communication* – Are there communicational aspects of the problem between the organization and clients?
- *Process* – Does the problem concern processes?
- *Learning* – Is the problem knowledge related?
- *Culture* – Does the issue concern cultural aspects?
- *Control* – Are there control related issues such as internal pricing or incentives?

The result of the analysis shows the frequency of problems concerning each area versus the organizational scope.

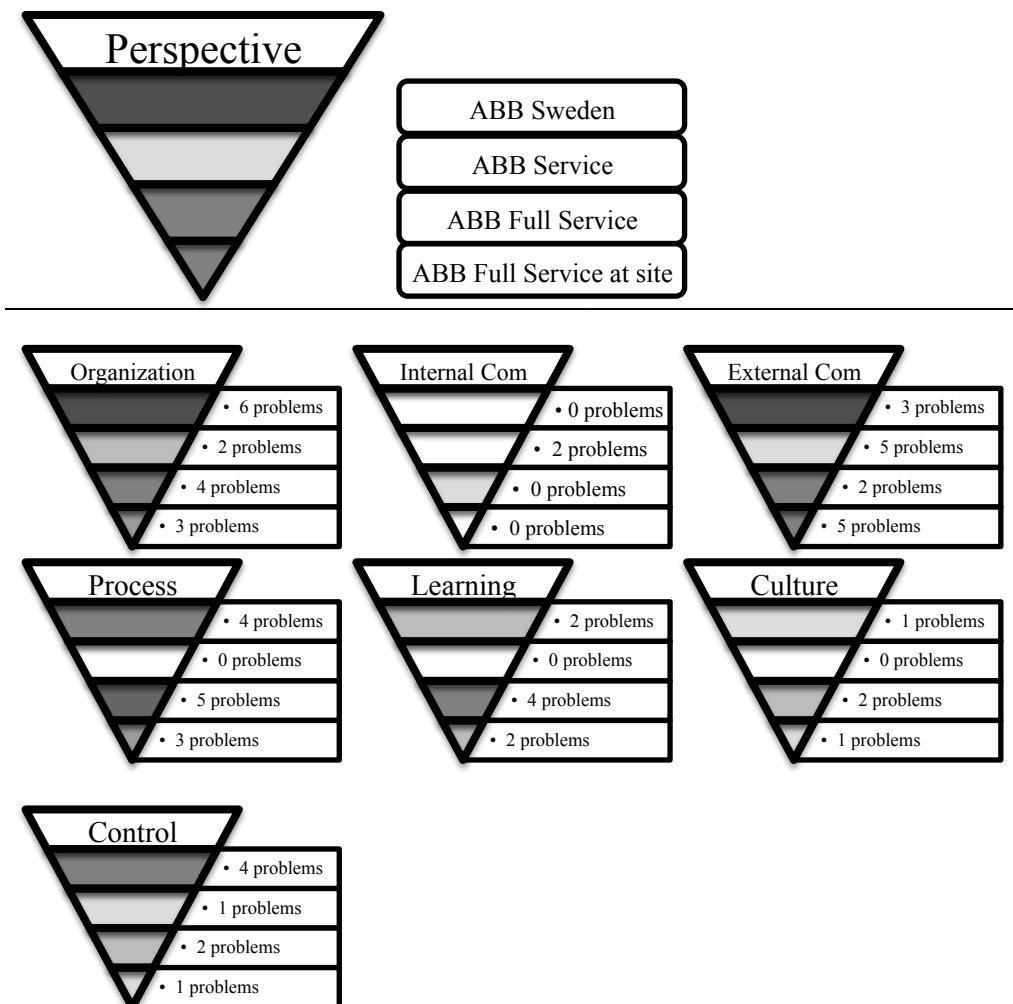


Figure 13 Organizational scope versus affected area - analysis

This framework pinpoints a number of focus areas that are more frequent in the discussed problems. It seems most problems relate to the Full Service organization or are ABB-wide problems within the Swedish organization. At the ABB-wide level, there seems to be a lot of problems concerning organization, process, internal communication, learning and control, marked with darker areas in the model. Within the Full Service organization top issues are process, organization and learning.

Full Service phase versus type of services

This framework puts problems in the context of Full Service phase combined with the kind of service they involve. The phases are the 7 phases of the Full Service process that are explained in the previous chapter. The different types of service are: Basic Maintenance, Specialized Service, Analysis and Products & Systems.

Table 2 Full Service phase versus type of services

	Prospecting	Screening	Feasibility Study	Partnership Development	Mobilization	Implementation	Contract Management
Basic Maintenance	3	2	1		1		
Product Service			3	1			2
Analysis & Consulting			4	1		1	
Products & System			2			2	5

The framework shows how most problems concern Product Service, Analysis & Consulting and Systems & Products. This indicates the direction of the assignment – a core problem is in moving the Full Service concept from basic maintenance to offering more specialized and deeper expertise in maintenance as well as all productivity raising activities.

Through the problem analysis identified problems are discovered to be dividable into two major themes. These two themes; *forming and nurturing the relationship* and *supplying and developing the competence* effectively captures the problems identified within the Full Service organization.

3.6 Revisiting the ABB assignment

Up to this point the assignment has been evaluated in light of a deeper understanding of the ABB Full Service business and an analysis of the related issues. This is a revisiting of the assignment with regards to a fuller understanding of the *academic issue*. A key insight from the problem analysis is that the core of the assignment is in moving the concept from dealing with maintenance to dealing with productivity. This

would indicate a fundamental shift in the Full Service concept. Moving the objectives forward a step from making sure the site runs to making the site better at running.

A key insight is that this step would not only increase the Full Service business, it would offer the clients more value from the partnership. By switching the focus to productivity-rising activities, ABB Full Service can utilize a broader range of its competencies in creating a long-term business impact for their clients. The increased span of services will bring the Full Service concept to a level the client organizations cannot match. Thus the attractiveness of the concept is strengthened and the argument that the clients can manage maintenance on their own is weakened. The ultimate aim is to deepen the Full Service partnership on several levels, increasing the scope, trust and value.

It is this shift that constitutes the challenge of this thesis. The objective, with regards to ABB, is to suggest implementations that would facilitate this change and secure a long-term relationship with the client, generating value for both parts.

3.7 Choosing theoretical perspective based on the problem analysis

Through this problem analysis the practical problem areas have been explored to some extent. This is the foundation on which to select appropriate theoretical framework relevant to the case. From the analysis, the top-level theoretical field that encompasses the full scope of the thesis to the highest degree is organizational theory. Organizational theory describes how companies organize and control in order to achieve their stated goals and objectives. (Hatch 2007)

3.8 Summary of the problem discussion

In this chapter all relevant problems identified during the interviews were described and analyzed. It appears that most problems relate to the Full Service organization or are ABB-wide problems within the Swedish organization. A key insight from the problem analysis is an increased understanding of the *academic issue*.

A fundamental shift in our view of the Full Service concept could also be identified, shifting focus to productivity-rising activities and building relationships. Moving the objectives forward a step from making sure the site runs to making the site better at running. It is this shift that constitutes the challenge of the ABB assignment. The objective of this master thesis, with regards to ABB, is to suggest implementations that would facilitate this change.

Through the problem analysis identified problems are discovered to be dividable into two major themes. These two themes; *forming and nurturing the relationship* and *supplying and developing the competence* effectively captures the problems identified within the Full Service organization.

From the analysis, the top-level theoretical field that encompasses the full scope of the thesis to the highest degree is organizational theory. Organizational theory describes how companies organize and control in order to achieve their stated goals and objectives.

4 Theoretical Framework

In this chapter the theories of the thesis is presented. These theories will be the groundwork for the solutions presented in chapters five and six; especially the general conclusions in the sixth chapter need the academic anchoring guaranteed from this part.

The theory presented in this chapter is selected by relevance to the general question and by descriptive qualities in relation to the subject. The chosen theoretical perspective of the thesis is organization; this was discovered through the problem analysis in the previous chapter. In this very broad subject selected areas have been pinpointed that describe aspects of the assignment and related issues to some extent. The first part of the chapter sets the theoretical scene from a broader organizational view, the second part elaborates on theories specific to outsourcing and the final part provides a closer look at the interface between the service supplier and the client. In the end of each of the three major theory areas, more in depth discussions on theories directly relating to the core of the thesis are provided. These are areas with strong links to the specific assignment from ABB and to the general thesis issue.

The theoretical approach is a consequence of the choice of the organizational perspective. The first step when selecting theories was to identify how the Full Service business could be described from an organizational standpoint. It was concluded that ABB Full Service is: Part of a multidivisional company, a service organization, an organization engaged in outsourcing, a maintenance provider, and so on. This formed a guide of which areas one should explore in order to understand the Full Service organization. The second step was to utilize insights from the problem analysis, here it was realized that identified problems could be arranged into two themes: competence development and nurturing the client relationship. The third step was to link areas identified by the first step with the two themes. Through this process the theoretical framework was built.

The chapter is structured in the following manner:



Figure 14 - *The theoretical approach*

Organization – A general discussion of the descriptive organizational attributes of the thesis case. Areas that are covered are; the organization of multinational companies, interaction between company divisions, centralization vs. decentralization, sub optimization, knowledge management in large companies and service orientated organizations.

Outsourcing – A discussion on outsourcing as a form of organization and associated issues. This discussion is further specified to the case of outsourcing of maintenance. Contained is a brief background discussion of maintenance. Issues in relation to outsourcing organizations are covered such as transition of culture, knowledge and experience. A theoretical presentation of the evolving field of the terminology of outsourcing is also presented as a foundation for the last part of the thesis where new terminology is proposed.

Client/Supplier interface – A major focus of this thesis is the client/supplier relationship and theories relating to the interaction between them. In particular, deep and long-term partnerships are of great interest. Several aspects of this interface are of covered such as; sales process, customer relationship management and partnership development.

4.1 Organization

The given assignment of this thesis is open in terms of theoretical perspective. The assignment is requires solutions based on a wide array of business theory. In order to create an academic structure a theoretical perspective is required. Organizational theory describes how companies organize and control in order to achieve stated goals and objectives. Thus, viewing this thesis with an organizational perspective is natural since the organization studied is a local business unit within a large multinational company. In this case the multinational company is ABB and the local business unit is ABB Full Service in Sweden.

According to Root (1994), a multinational company, is a parent company that:

- Engages in foreign production through its affiliates located in several countries.
- Exercises direct control over the policies of its affiliates.
- Implements business strategies in production, marketing, finance and staffing that transcend national boundaries.

There is a lot written on multinational companies, their effect on globalization, political influence, ethics etc. However, the most relevant aspect of multinational companies to this thesis is the organization of such companies and the problems inherited by such organizations. There are a few different competing forms of organizational structure applicable to corporations in this case; Multidivisional organization, Matrix organization and Service organization.

4.1.1 Multidivisional organization

The multidivisional structure is perhaps the most common one among the multi-international organizations, and one of the key benefits of such arrangement is decentralized decision-making. Decisions on business level strategies and operations are handled at the divisional level, while the corporate headquarter handles companywide strategies, planning and budgeting. The management controls the output of the divisions by financial targets and policies (Bruzelius & Skärvad 2000, p. 150). The divisional structure provides more efficient decision-making and allows for application of a common set of corporate management tools on a wide range of businesses. Other benefits are increased autonomy between divisions, a higher sense of responsibility and less bureaucracy (Grant 2005 p. 205).

Financially, and in one sense also physically, ABB's global organizational structure is multidivisional, and in compliance with theory the company has three organizational levels; the corporate center, the divisions and the business units. The divisional structure is based on product groups and corresponding technologies.

One of the problems associated to multidivisional structures is internal dependence between divisions, when resources are shared between divisions the allocation can become problematic as divisions, due to their independence have different objectives. In the thesis case, ABB Full Service suffers from this type of resource allocation problem with regards to utilizing qualified staff from different divisions when their own division also needs them. When internal competition occurs in companies, and divisions act on divisional level targets instead of on the company wide value, this is often referred to as sub optimization. (Hatch 1997, p. 218)

There are also communicational problems symptomatic to the multidivisional form of organizational structure, e.g. where several divisions have common clients, the sales coordination may suffer (Bruzelius & Skärvad 2000, p. 153). This is exactly what happens in the thesis case where ABB clients sometimes get confused when several different salesmen from different ABB divisions act without coordination.

As a consequence of the divisionalization of a company there are usually some restructuring of supporting units. When a corporation moves from a functional organization to a divisional one, old supporting units are sometimes kept at corporate level but now with result targets. Bruzelius and Skärvad (2000, p. 154) provides an example through the Swedish industrial company Sandvik where their service units have been lifted out of the divisions and put in a market context where they are responsible for creating revenues from internal divisions through internal pricing as well as from external customers. This has also been the development of the ABB Service function, from small supporting units towards a national unit with results responsibility serving internal as well as external clients. Just like in the Sandvik example, ABB Service is not a division financially but a support unit within the Swedish ABB organization.

4.1.2 Matrix organization

Most multinational corporations operate in a multidimensional environment; their businesses can be grouped by product, region or function. A matrix structure is defined as:

“Organizational structures that formalize coordination and control across multiple dimensions”

(Grant 2005, p. 208)

The matrix organization became popular in the 60's and 70's when several of the major companies adopted this form of structure. Over time most of these companies came to realize the significant drawbacks having a matrix organization and have now restructured. The matrix structure has advantages in that all dimensions of the company's businesses are accommodated for and each has a management focusing on the regional, product or functional needs. However, in doing this one sacrifices unity of command, the concept of having one position above every level with total responsibility.

The main criticism is that the matrix organization over formalizes the different dimensions creating a rigid structure that dampens entrepreneurship, slows the decision process and increases overhead administration. ABB actually used to be the poster child of the matrix organization, but just like most other companies, they have since restructured several times (Grant 2005, p. 209). However, today ABB's structure still has elements of a matrix organization as a support to a more dominant multidivisional structure. The dominant dimension is a product, and this is also the financial structure, but a secondary regional dimension is also affecting. To clarify, in the case of ABB Full Service Sweden, the unit reports financially to the global product division Process Automation at the Zürich headquarters, but it also answers to the head of ABB Service Sweden and the regional head of ABB Sweden.

Such a mix is academically referred to as a hybrid organization. Hybrids are organizations with elements of more than one organizational structure. On one hand hybrids can bring flexibility to a company, adjusting the structure after specific needs, on the other hand this form can be confusing and result in communicational difficulties (Hatch 1997, p. 222). The complexity of the global ABB structure is evident when interviewing Full Service staff; many admittedly have trouble explaining the structure and the chain of command in a straightforward way.

4.1.3 Service organization

ABB is a product-centered company, but the ABB Full Service unit is service orientated. The service industry provides an ever-growing part of the total world output; the sector passed the manufacturing industries already in the 60's. Various academic definitions of what constitutes a service exist but they all include a few basic criteria (Gummesson 2002, p. 325):

<i>Intangibility</i>	There is no physical manifestation of the output
<i>Heterogeneity</i>	Services are less standardized than products; one product is usually indistinguishable from another.
<i>Perishability</i>	Services cannot be stored and used at a later date.
<i>Inseparability</i>	Production and consumption of a service is intertwined

Service businesses are different in many ways from product businesses and put other demands on the organization. In the same time, the line between what constitutes a manufacturing company and a service company is blurring. During the last few decades many of the major manufacturing companies have gone from generating all revenue from products to generating an increasingly large share of revenue from services. Examples of this trend are General Electric from which $\frac{3}{4}$ of revenues now come from services and IBM that has realigned their business model from production to services (Normann 2000, p. 19). ABB has not followed this trend as of yet and the strategic focus remains on products and the sales of products. The Full Service unit is encapsulated within an organization that has a clear product focus; problems could arise where the smaller service unit has conflicting demands on the organization from those of the product divisions.

One major attribute of the service sector is the close interaction between service employees and customers. Compared to the product sector, the service sector has a much higher demand on the organization's ability to create and maintain personal relationships with the customers. Normann (2000, p. 25) describes an important dimension closely linked to service companies; personality intensity. It describes how important individual performance is in the outcome of a business transaction. This requires service oriented companies to work with social innovation, a term referring to finding appropriate roles for individuals within the organization, facilitating personal growth and providing rapid competence development. By working with these aspects of the organization, service companies can improve the quality and cost effectiveness.

One key element is the customer relationship, as this interface becomes increasingly more business-critical the subject attracts academic attention. New marketing theories are formed to address the specific needs of the service industry; examples are Customer Relations Management and Total Relationship Management. Normann (2000, p. 26) criticizes the established view that value is transmitted from producer to customer in a linear fashion and instead suggests that in the current business environment, value creation occurs through the interaction between the producer and the customer.

There are four important components of a service package:

- *Specialized ability to deliver services*
 - The ability of the service provider to deliver the service better or more effectively than competitors or the clients.
- *Connections and social relations*
 - The ability of the service provider to facilitate connections between the clients and other resources.
- *Transfer of know-how*
 - The ability of the service provider to transfer knowledge to their clients.
- *Management and organization as a service product*
 - The ability of the service provider to implement a service system for the client, the organization and management that lies behind the actual services.

ABB Full Service provides a service package with strong aspects of all these components; the assignment for this thesis is in many ways to further strengthen all of these, especially in the areas of Connections and social relations and Transfer of know-how.

4.1.4 Knowledge and the service organization

The development of the service industry is closely linked to the transition towards a knowledge intensive society. Normann describes (2000, p. 30) how, as customers gain more knowledge they get more involved in the service execution and collaborate for increased mutual value creation. The mutual dependence and integration between resources and functions is deepening at an increasing pace. In an environment of fast change and increasingly fierce competition knowledge development becomes a crucial objective of the management. Internal knowledge transmission and generation as well as acquiring external knowledge are important tasks for service organizations. Although paradoxical, the knowledge level of a company and the demand for increased knowledge is intimately linked.

Learning can be described as when individuals within the organization learn new competences that benefits the organization. Learning can also be described as when groups and organizations learn how experience or knowledge could be documented or how to develop new routines to capture. Often the knowledge of experienced and skillful co-workers and how they conduct their work, this, in order to create manuals for less experienced employees (Alvesson & Svenningsson 2007, p. 271).

The existence of experts in an organization, such as top surgeons in a hospital or specific engineers, with knowledge both in technical as maintenance areas, will not be a strong source of long term strategic advantage since those individuals may leave the organization or eventually retire. The organization must, if excellence is to be

sustained, capture and spread those persons knowledge within the organization. An example in how to achieve this is could be by using them in mentoring roles or by codification of their knowledge into work routines. However, these processes of spreading knowledge may as well educate competitors, when for example personnel move to other organizations; therefore innovation and creativity must be continuously nurtured within the organization. (Johnson, Sholes & Whittington 2005, p. 448)

Service organizations often have difficulties to control the quality of a performed service. The motivation, competence and actions of the personnel will, combined with the clients' expectations, constitute the achieved quality of a performed service. Since service organizations are dependent on the competence of their employees, there is a need for routines that reassures, capture and spreads the inherited knowledge of their personnel through the entire organization.(Hatch 2007, p. 384)

In a highly competitive environment companies must continuously strive for gaining and keeping competitive advantage. A key to sustaining competitive advantage is learning and managing knowledge within the organization. In the case of ABB Full Service this is even more pronounced because a crucial part of the business concept is in the transfer of knowledge between the ABB organization, the transferred client employees and the client organization. The academic field of Learning Organizations is working with issues related to learning and knowledge within organizations. Senge distinguishes (1990, p. 12) between two forms of learning; adaptive and generative. Adaptive learning is constrained to learning within existing frames of reference whereas generative learning is being creative, using fresh perspectives and discovering new ways of dealing with problems. When entering a new partnership the ABB Full Service organization is trying to lift transferred employees from an adaptive approach to the generative.

4.1.5 Summary of the organization theories

Our general discussion of the theory phenomena organization has the aim to describe and visualize aspects concerning a small organization such as ABB Full Service within a multidivisional organization.

Financially, and in one sense also physically, ABB's global organizational structure is multidivisional but the organization is also a poster child of the matrix organization, transferred into a hybrid organization. This complexity is evident to explain in order to fully understand and further describe the structure the Full Service organization is working within.

Service organizations such as ABB Full Service have a close interaction between the service employees and the customer, where individual performance constitutes the outcome of a business transaction. This result in a need to further describe theory of the knowledge management, a fundamental part since the transfer of knowledge between the ABB organizations, the client former employees and the client organization is one of the most important aspects of the business concept.

4.2 Outsourcing

In order to fully understand the complexity of the thesis this part will discuss the phenomena of outsourcing in general and specifically focus on the outsourcing of maintenance operations. The organization of the outsourcing provider is examined and main theories are explained. One paragraph is dedicated to a discussion on terminology in the field of outsourcing; this has relevance to theoretical contributions of this thesis where new terms are proposed and therefore it was deemed appropriate to expand on these issues in the chapter on theory.

One of the most relevant aspects of outsourcing within the maintenance industry to the thesis is in how to handle culture and change, knowledge and also how to create a learning organization. These issues are discussed in the second part of this chapter.

There are several different definitions of outsourcing in academic literature, all with a basic common meaning. Hirschheim & Lacity (1993, p. 17) provides a distinct definition suitable for this thesis:

Outsourcing - The purchase of a goods or service that was previously provided internally.

Companies outsource tasks or functions to external service providers for several reasons. One reason is to focus on core business processes and leave less important tasks to third parties. Another reason is to find more efficient solutions outside the organization to tasks the company are not fully equipped to complete in an expert manner. Outsourcing can be utilized to different degrees by different companies, from using third parties for small specific tasks to outsourcing entire business processes. The decision to outsource an activity is often made in the interest of lowering the company's cost, redirect or sustain capacity directed at the competences of other, more valuable activities, or to make more efficient use of capital, personnel, technology and resources. (Ford et. al 1998 p. 124-126)

The main advantage of outsourcing is that the company can concentrate on its core business and do what it does best, this since an activity performed better or more cheaply outside the company will not serve as a competitive advantage.

Other advantages generated by outsourcing are:

- Reduction of the company's risk exposure in for example changing technology or changed buyer preferences.
- Rationalization of company operations in ways that improve organizational flexibility.
- Decreased product cycle times.
- Reduction of coordination costs.
- Access to wider experience and knowledge.

However, it is also important to bear in mind that, a decision to outsource activities often affects other aspect of the company's internal operations. When companies

decide to outsource they give up some internal skills and risk losing crucial capabilities. Therefore organizations must be careful not to diminish competency in activities that in the long run contributes to the company's success. (Thompson & Strickland 2001) From this it is clear that the decision to outsource is an important strategic choice with significant future consequences, especially with regards to organizational capability and competency.

The adoption of outsourcing in Swedish companies is less than in the neighboring countries. According to a study by the consulting firm Accenture, only 50 % of large organizations in Sweden use outsourcing compared to 88 % in Finland and 75 % in Denmark. The same study reports that 32% of the organizations that are not using outsourcing today expect to do so in the next few years and more than 50 % of management in Swedish companies expect outsourcing as a phenomenon to grow during the next few years. (accenture.com 080331)

In the perspective of the society, outsourcing has received a lot of negative attention in the media and political circles in connection to globalization. Outsourcing has been blamed for loss of jobs in the western society to developing nations in areas such as Asia. Such negative attention has made companies more reluctant to outsourcing and many employees associate the word outsourcing with layoffs, which is not necessarily correct. There is no distinct connection between job losses arising from outsourcing other than short term adjustments, but the fear of job losses is still a great concern since it leads to noticeable resistant when companies consider an outsource proposal (Amit & Wei 2004, p. 11-13). This discussion is largely outside the scope of this thesis, but it has some relevance when linking the general attitudes to the perspective of potential clients and future staff in the Full Service case. The Full Service organization maintains a policy of discretion and to only contact high-level management when screening and nearing potential clients.

4.2.1 Discussion on the terminology of outsourcing

This is a presentation of terminology present in academic literature on the subject of outsourcing. The overview is needed to provide a foundation for a discussion in the last part of the thesis where new terminology is proposed.

Outsourcing is the external sourcing option; it can also be done internally, then term is insourcing. There is also a geographical dimension to outsourcing, different levels of "shoring", which relates to the geographical distance describing the relationship between the service provider and the service buyer. In other words, sourcing occurs across organizational borders and shoring describes geographical distance. The field is evolving and the terminology has not settled completely so terms and definitions vary somewhat between different authors but the following table outlines the general meanings:

Table 3 Different sourcing and shoring options, (Dibbern et. al 2004; Chakrabarty 2006).

Sourcing	Shoring
Insourcing – The service provider is a client entity	Onshoring – Outsourcing to supplier in the same country
Selective sourcing or Co-sourcing - The service provider cooperates with the client to perform a function.	Nearshoring - Outsourcing to supplier in a proximate country
Outsourcing - The service provider is a non-client entity	Offshoring - Outsourcing to supplier overseas or far away

Subrata Chakrabarty writes in “Making sense of the sourcing and shoring maze: Various outsourcing and offshoring alternatives” (2006) about sourcing alternatives and presents an overview of these two dimensions:

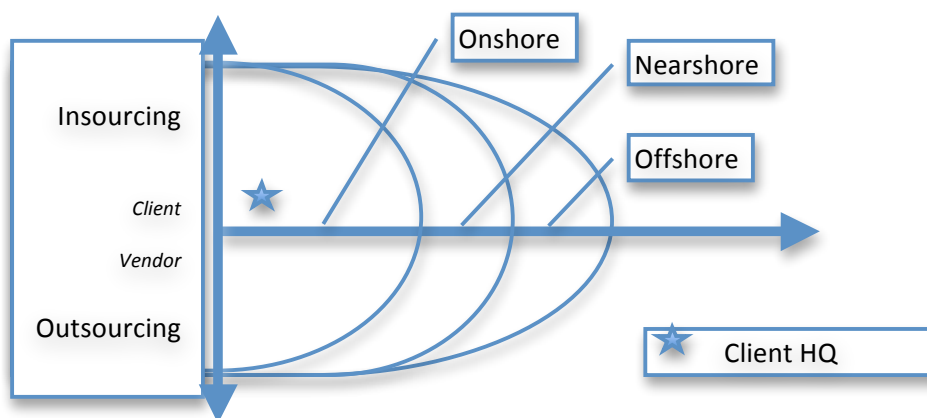


Figure 15 Sourcing and shoring – Onshore centric view, (Chakrabarty 2006).

Insourcing is basically internal outsourcing, in other words where an internal but autonomous unit is created to handle certain operations as an alternative to outsourcing. This is especially meaningful in the context of multidivisional organizations. The idea is to find a more cost-effective way of managing processes that are normally handled separately by each individual division such as payroll or information services for example. An integral part of insourcing is to develop the internal competency and implement best practices to achieve an efficiency level on par with the offering of external service providers. There seems to be some confusion around the term “insourcing”. In some articles and books the term refers to the act of reacquiring a previously outsourced process (Berndtzen & Larsson 2005), this is sometimes called “backsourcing” (Hirschheim & Lacity 1998, p. 644). The most prevalent meaning is however the one previously used discussed. This is relevant to this thesis because the biggest competitor to ABB Full Service when trying to

establish a new partnership is insourcing and the biggest threat to an established relationship is back-sourcing.

Wibbelsman & Maiero (1994) describes a model, see table 4 for sourcing alternatives; the “Multi-sourcing continuum” ranges from insourcing to outsourcing and describes different sourcing strategies on this range.

Table 4 Strategies of outsourcing, (Wibbelsman & Maiero, 1994).

Main Strategy	Sub-Strategy
Insourcing	“Ok as is” The function is considered to be managed satisfyingly within the organization
	“Fix and keep in-house” The internal operations need to become more efficient and should implement industry best practices to the function
Co-sourcing	“Rehabilitation and return” Function is reformed by third party, then kept in-house
	“Transition assistance” Third party overtakes some activities while the internal organization develops new skills
	“Capability development” Third party overtakes all activities temporarily or permanently while internal organization develops new capabilities
Outsourcing	“Option to reverse” Third party completely overtakes function, but there is a plan for an eventual reversal
	“Divest completely” The function is laid out on a third party, the function is not considered part of the core business

Millar identifies four specific forms of outsourcing, each has different characteristics but they are not mutually exclusive. (1) *Transitional outsourcing* is where a third party is hired to perform a technological transition or some form of migration. (2) *Business process outsourcing* is where a complete business function is outsourced to a third party. (3) *Business benefit contracting* is where supplier payment is based on realized business benefits of the client which spreads the risk between the two parties and links costs to benefits. (4) The last form is *General outsourcing*, which

encompasses one of three subtypes. (4a) *Selective outsourcing* is where a specific area is outsourced to a third party. (4b) *Value added outsourcing* is where an area is outsourced to a third party to provide a higher level of service/expertise/experience than could be achieved in-house. (4c) And the final subtype *Cooperative outsourcing* is where the client and a third party jointly performs a function. (Millar 1994 see Dibbern et. al 2004, p. 10-11)

To summarize the section on outsourcing terminology one can note that there is a wide array of different terms in the academic literature. Most of these sources are related to outsourcing of IT (Information Technology) services, which pioneered the outsourcing field. This chapter is mainly based on literature reviews of the field and the selected terms stated here are the most relevant ones to this thesis. Different sourcing options and shoring term are reviewed and alternate outsourcing forms are discussed.

4.2.2 Outsourcing & maintenance

According to the *European Federation of National Maintenance Societies*, the definition of maintenance is:

“All actions, which have the objective of retaining or restoring an item in or to a state in which it can perform its required function. The actions include the combination of all technical and corresponding administrative, managerial, and supervision actions.”

(efnms.org 2008-04-05)

Manufacturing companies have often invested a substantial amount of capital in their machines. The maintenance of these assets is one of the important factors that influence the return on investment since 15–40% of production costs can be attributed to maintenance costs. (Blanchard 1997, p. 71)

A few decades ago, maintenance was seen as an unavoidable, difficult to manage, part of a company’s production. This view of maintenance has gradually changed is of today an, fully recognized, separate and important business function (Pintelon et. al 2000), see figure 16.

Several studies highlights on new theoretical frameworks both related to manufacturing and maintenance. For instance, (Demeter 2003) studied manufacturing strategy and its competitiveness. She explains that an efficiently running production system will have a positive influence on business performance, depending on equipment performance, hence maintenance. Others, such as (Waeyenberg & Pintelon 2004) and (Al-Najjar & Alsyouf 2003) underlines the importance of maintenance and its role in contributing to positive business performance.

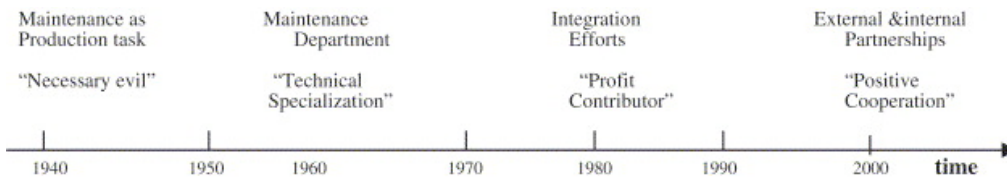


Figure 16 Maintenance management on a time perspective, (Pintelon et. al 2000).

The role of the maintenance manager

A maintenance manager must satisfy a number of different stakeholders within the manufacturing company in order to successfully conduct his work. The most important stakeholder is the *production manager*, the internal customer of the maintenance organization who is responsible for the company's processes and therefore needs equipment that is available and reliable. The *financial manager* focuses in the maintenance, especially in times of recession as a source of cost savings where in short sights, a wait with preventative maintenance or to delay some repairs would positively affect the budget. A third stakeholder to satisfy is the society, where the rapidly increasing demand of safety, health and environment has resulted in stricter laws and regulations. A failure to fulfill these circumstances could jeopardize the company's license to operate but also the commitment of the employees.

These three stakeholders must all get their required attention and the maintenance manager must therefore decide what and who to prioritize. Delahay and Haarman (2007, p. 25-46) describes in their book "Value driven maintenance, New Faith in Maintenance" the four drivers of value within maintenance and furthermore the need for a manager to fully understand and manage the values affecting the maintenance the most.

The four drivers of value within maintenance are;

- *Asset utilization* increases the technical availability of technical equipment, this since a higher technical availability increases the potential to produce and sell more products with the same invested capital.
- *Safety, Health and Environment* creates value since it creates a better working-climate but also avoids the risk in getting governmental penalties for the violation of regulations.
- *Cost control* and savings, having a smarter preventive maintenance program with higher technician productivity, lower procurement prices for material and services and the right amount of technicians, managers and indirect personnel will significant contribute on the maintenance budget.
- *Resource allocation* and a smarter management of resources, planning and surveying resources as spare parts and freeing the locked-in value such resources possess.

By controlling and managing the effect of these different values, the maintenance of a company more strongly will contribute to a more positive business performance. Key

aspects when trying to achieve a long-term perspective are organizational structure, training and education, as well as maintenance policies and processes. (Swanson 1997, p. 240)

The trend in manufacturing industries is toward fewer and larger, more sophisticated and capital-intensive production processes, the demand of faster and more sophisticated service naturally arise. Maintenance contracts and a shift to more preventive maintenance reduce the risk for increasingly major and expensive breakdowns. Process based companies have been early adopters of this type of preventive maintenance, mainly because of that the industry is extremely capital-intensive, constant productivity-improvements are necessary and a production stop, due to lack of repair, is unacceptable. (Berggren & Bergkvist 2006)

Outsourcing of maintenance

The trend of greater complexity in technology, processes and systems creates difficulties for companies to develop the internal competence needed to secure the productivity. This provides an opportunity for external service providers to offer a more cost-effective solution. Typical areas that service providers, specialized in maintenance, offer their clients are; general maintenance, up-grades of equipment, reconstructions and education of the client personnel. (Berggren & Bergkvist 2006)

To outsource a company's maintenance organization has traditionally been seen as a strictly cost-based decision. This is a view that has changed and today outsourcing of maintenance is considered from a wider perspective. Manufacturing companies increasingly realize that the maintenance function often constitutes of complex and extended sets of tangible and intangible strategic factors. Examples of such factors are; internal structure, processes and management procedures, personnel capabilities and their willingness for change and innovations. When outsourcing maintenance, a company frees internal resources for other activities and builds new competencies in advanced maintenance, not available at the site, from its outsourcing partner. (Bertolini, et. al 2004, p. 774-779)

Other reasons for using external maintenance services are (plant-maintenance.com 2008-03-29):

- Increased labor productivity.
- Improvements in work quality and equipment performance.
- Reduction of management effort.
- Better opportunity to keep in pace with rapidly changing technology.

The typical ABB Full Service site has a large variation concerning the complexity and age of machines, differences in the competence and experience of the maintenance personnel and a lack of maintenance routines. This complex environment demands a focused approach to maintenance operations. Clients often turn to a third party, such as ABB, because the internal organization fails resulting in production stops and costly malfunctions.

The management must consider the risk of losing competencies and control of the production plant when contemplating the option of outsourcing. This aspect is especially critical since maintenance is closely linked to the company's productivity. The production function itself is at the core of the business and know-how in this process is considered a crucial element for the preservation of competitive advantage. Activities that easily could be outsourced and acquired by a third part is usually non-core competencies that are standardized, well defined and easily repetitive activities such as repair of common equipment, electric and electronic parts and plant overhauls. The extent of the outsourcing and the consequent benefits and risks depend on the qualifications of the outsourcing partner. (Bertolini et. al 2004, p. 781)

In addition to maintenance expertise, service providers must possess a wide and deep knowledge of the client's business. To remain an attractive partner the service provider must continually improve rather than to sustain the maintenance operations. (Berggren & Bergkvist 2006)

The most successful outsourcing arrangements are those in which the service provider brings a philosophy of partnership and mutual benefits. It is therefore important to obtain a spirit of co-operation and understanding to sustain an ongoing relationship that benefits both parties (Judenberg 1994 p.36). Most maintenance outsourcing partnerships are in the form of business benefit contracting, where supplier payment is based on realized business benefits of the client which spreads the risk between the two parties and links costs to benefits (Dibbern et. al 2004). It is important that the relationship between the company and the outsourced maintenance organization gets suitable monitoring and evaluation procedures.

4.2.3 Culture and the importance of change

Both organizations that wish to enter an outsourcing contract and outsourcing service providers must consider the cultural impact when joining in a partnership. Different cultures, values, and ways of doing business vary a lot from company to company and go beyond geographical borders. Since diverse values, approaches, and conflicting cultures can result in a destructive relationship, a clear understanding of how to resolve conflicts is important when building an effective long-term relationship (Johnson, Scholes & Whittington 2005). One cannot assume, as in some of the early ABB Full Service contracts, that the transferred maintenance-personnel will be automatically integrated into the ABB organization and adopt the right mindset.

Training in how to address these conflicts is important in order to support change in the relationship. This since short-term success is achieved by managing the relationship between the two organizations; future success is built when developing relationships and attempting to change the position in a wider network. This requires an awareness of the different skills and technologies each company posses but also how to integrate, use and develop these skills in different ways. (Ford, et. al 1998, p. 268-270)

Change management is a structured approach to handle change in personnel, groups and organizations that enables the change from a current stage to a desired future

stage. Personnel confronted by change often experience a form of culture shock when established patterns of company life alter. (Stuart 1995, p.558)

This is important to bear in mind when an outsourcing provider such as ABB Full Service is faced with resistant of change when trying to create a new maintenance organization at the client's site.

A company's education and training should address the softer side of a partnership construction. In addition to communicating vision and objectives, the training also must convey what is expected of the employees and how changes circumstancing from this new relationship might affect them. Benefits from such training would include strong leadership engagement and extensive employee participation. These elements help to eliminate change resistance and motivate employees to fully engage in the success of the company reaching beyond their former specific task. (Johnson, Sholes & Whittington 2005, p. 135-136)

Training and education provide not only an increase in employee skills, but also a common base of language, understanding and knowledge from which to work. Knowledge exchange results in joint learning that in return could result in the joint creation of new products, processes, and services. In particular, education initiatives aimed at relationship building, communication, trust, commitment, and shared benefits can help achieve an improved fit between companies. (Grant 2005, p. 174)

4.2.4 Knowledge management in outsourced organizations

To integrate knowledge exchange into an outsourced organization, internal and external specialists, must translate their specific knowledge into rules or directives in order to guide the practice and behavior of others. Processes that allow the personnel to input their knowledge into a combined process must as well be implemented into the organization. This interaction with the sharing of knowledge and experience is often a social process relying on the interest of the personnel, and the success is often assured as long as the mutual benefit is clear. This knowledge-sharing could also happen through formal processes, for example as the internet, but there is an underlying need for social contact and trust, this since exchange of knowledge more likely occur in cultures of trust without strong hierarchical or functional boundaries. (Johnson, Sholes & Whittington 2005, p. 133-136)

But for knowledge interaction to work efficiently there is also a need of a fundamental degree of common knowledge. The common knowledge, for example an understanding of specific technical concepts and processes of production, makes it easier for different employees to collaborate and to interact with each other. The common knowledge would include a common language to support the communication within the organization but also serve as a base for a common culture. This common culture would support compatible behaviors and recognizable processes, often hard to achieve in outsourced maintenance-organizations. By recognizing the specific features of different knowledge processes, it is possible to

recognize different organizational structures and systems needed to support each knowledge process. (Grant 2005, p. 172-174)

An outsourced organization, such as ABB Full Service, and the close interaction between the service employees and the customer, where individual performance compose the outcome of a business transaction results in the need of fully handle the transfer of knowledge between the ABB organizations, the transferred employees and the client organization since it is the most important aspect of the business concept.

4.2.5 Integrating learning in outsourced organizations

Organizations have traditionally been seen as structures built for stability and for maintaining control rather than supporting change. This formation of the organization is not suited to the increase in dynamic conditions for changes of today, and this is something that sometimes is reflected in the employees. A learning organization is capable of regenerating knowledge, experience and skills of the personnel within a culture that support mutual questioning and provide a shared purpose and vision. The management of companies should encourage processes that release knowledge in individuals and encourages the sharing of knowledge. With such processes in place organizational changes will be embraced more quickly and employees will become better equipped for identifying potential opportunities. Since information and relationships within an organization are both horizontal and vertical, the management should address the importance of social networks where interest groups co-operate and learn from each other. Many new ideas on how to improve operations arise from within an organization. By creating an environment that embraces these ideas the company can form and sustain a competitive advantage. (Johnson, Sholes & Whittington 2005, p. 589-590)

Organizational learning could also be described as an organization where testing, reflecting and mutual learning is normal aspects of the work, and in which learning provides a input to individual satisfaction and enables the organization to be innovative and productively adaptive (Watson 2001, p. 222)

Handy (1989 see Bruzelius & Skärvad 2000, p.245) explains that learning organizations are stimulated when the employees gets greater acting space and individual development budgets. Mentorship, courses and seminars, study circles, question time, and brainstorming sessions also stimulate learning. Handy also discusses obstacles from the management that does not encourages a culture of learning such as; seeing problems as a sign of failure, ideas descending from a lower level in the organization often is neglected, and that information spread throughout the organization often failures. Learning organizations stimulates the learning process and it is of great importance that when employees enlighten new ideas, they also get the opportunity to participate and to follow how their ideas develop within the organization.

The challenges for managers within the organization is to recognize the potential benefits of different processes of strategy development in order to build learning organizations capable of adapting and innovating within a changing environment,

however this must be complemented with the benefits of the more formal processes of analysis and planning when implementing. (Johnson, Sholes & Whittington 2005, p.590)

4.2.6 Summary of outsourcing theories

Outsourcing is central to this thesis. Some of the most important aspects of the subject stem from issues related to the organizational form that is outsourcing. In accordance with the chosen methodological approach, one must therefore form a thorough theoretical understanding of outsourcing terminology and theory on associated areas. In the chapter on outsourcing it has been decided to include a brief overview of maintenance in order to fully understand the specifics of outsourcing of maintenance services. Main insights from this chapter are the importance of cultural integration between the client organization and the service provider, how service providers can develop competencies by working with learning initiatives and general issues associated with outsourcing in general and outsourcing of maintenance in particular.

4.3 Business-to-business – relationship in a service contract

The relationship an organization as ABB Full Service and their clients have could be described as an outsource relationship, however, especially within the maintenance-industry, there is a need to further clarify this relationship in order to describe this specific phenomenon more distinctly. The interface between the two players will in this chapter be further examined as well as the importance of image and brand within this industry.

In this thesis, the expression *business-to-business* defines the relationship between two companies that have business together, in contrast to the other meaning of the expression that relates to e-commerce. This same expression has also been known as *industrial marketing* in the United States. (Gummesson 2002, p. 328)

Service is very much about relations, and service is personal in contrast to a product offering. This means that the competence and social skills of a service provider is crucial for creating successful businesses. As a service provider you must be much more present and active during the process compared to a product sale. Service to manufacturing companies, such as the ABB Service division with technical service and maintenance, is distinguished from service companies like the staffing company Manpower or facility service provider ISS. The word partnership is frequently used to describe this kind of relationship, mostly because it is associated with some positive characteristics of a relationship such as cost efficiency, flexibility, enhanced service and capacitation. (Zineldin & Bredenl w 2003, p. 459-461)

With this in mind it is interesting that Lacity and Hirschheim showed (1994, p.7) that the typical outsourcing cases seldom were outsourcing partnerships. As a matter of fact the term *strategic partnership* is often not suitable to characterize a typical relationship between an outsourcing supplier and its client. As a result of this, a normal outsourcing relationship often cannot be classified as a partnership *or* a strategic alliance. Nevertheless the partnership status of a relationship is very much

wanted and should be the aim for every business conducting outsourcing activities. Lambert, et. al investigated (1996, p.36) the cooperation's between organizations and concluded that some of the partnerships that were considered successful were not in fact true partnerships at all. In order to create a successful relationship, a partnership, between an outsourcing supplier and its client, trust must be established between the two. (Augustson & Bergstedt 1999, p. 80-81)

In his article "When outsourcing goes awry" in Harvard Business Review, Peisch (1995, p.24) claims that a majority of failed strategic cooperation's do so because of inability in creating mutual and sustained value for those involved. This has led to a lot of academic attention to the selection of suitable partners.

To ensure that a partnership becomes successful and lasting it is important to articulate exactly what kind of perceived perceptions you have in the beginning of the relationship. The failing of a proper evaluation of a presumptive partner is according to Medcof (1997, p.718) one of the main reasons of failed partnerships. A partnership sets high demands on the management and its capability to handle change in a dynamic and complex environment. Leadership in a partnership requires more skills within integration and networking than in a traditional company (Augustson & Bergstedt 1999, p.75).

As mentioned earlier most of the research papers about partnerships focus on the positive effects for the companies rather than on the problems and challenges there are in these kinds of relationships. Studies that examine how the business relationship should be designed in every unique case are much fewer (Spekman 1991 see Stuart & McCutcheon 1996, p.7).

Considering that outsourcing partnerships is a dynamic process a systematic approach is needed (Lambert, et. al 1999, p.28). In the decision of taking part in a partnership or not, the motives for the partnership should be considered. Every company has their own unique reasons for forming a partnership, which makes it hard to strategically translate the motives into goals for the partnership. One part of the cooperation always risks getting the bitter end of the deal, in worst case both parts are affected negatively.

4.3.1 Developing the relationship

Is it always necessary to develop a business relationship to a partnership? Management has to make decision; is it necessary to establish that close connection with an outsourcing provider? Some companies do not want to risk putting itself in the hands of another company. Must the relationship have to be developed to a partnership? Or can the company achieve the wanted goals at their own? A common belief among managements is that a partnership should be developed in time, and they always origin from a successful business relationship. It is also believed that a lot of time and resources has to be invested in order to succeed with a partnership. (Lambert et. al 1996, p. 26)

This is what happened in the Gamma case, where the client wanted ABB to investigate the potential for smaller improvements within the site that could increase the profitability of the site. The result was a thoroughly and expensive analysis resulting in a ABB proposal the client not nearly wanted or expected and the relation was at that time very stressed. The client and ABB did not fully agree on what they wanted to achieve with the investigation and the potential extended partnership and as a result ABB had therefore, beyond the ordinary maintenance contract, hard to get attention to other areas of improvement the ABB solutions could offer.

As a result of this problem, a partnership is not always considered to be the best option (Cooper, et. al 1997, p.76). A partnership could give the partners mutual benefits but the commitment could vary over time. There have been examples of outsourcing partnerships where the partners realized that the results have not been satisfying due to the lack of a systematic approach to the process. (Grover 1996; McFarlan & Nolan 1995; Zineldin 2003)

In a time when the technical solutions of manufacturing gets more complicated, manufacturing companies have problems with performing all kinds of service and maintenance necessary. External actors that are specialized in service and maintenance are needed. A trend in the industrial market is that manufacturers tend to focus more on buying a function rather than a service. The questions to the maintenance provider are formulated like; "This machine must produce 100kg per hour, every day. Help us make this happen!" The maintenance provider of today guarantees productivity and accessibility. This requires that the maintenance provider have a vast understanding of their clients business and its production. (Berggren & Bergkvist 2006)

If the service provider is to perform pro-active maintenance and take a pro-active role, the focus is rather functional than product-centered. This means that payments for maintenance are related to function rather than time spent or spare parts used. The downsides for the maintenance provider are a long-term financial risk but the up side of a contract like that is an often long-term steady cash flow. Due to this special kind of long-term relationship, a pro-active maintenance provider enhances the product rather than maintains it at its present state. (Berggren & Bergkvist 2006)

A problem with this business is the risk and valuation of the long-term cash flow. It could be a risk that the client adds more responsibility and demands to the contract than what originally was intended, demands that can be very hard for a maintenance provider to charge extra for without risking the contract. This paradox is explained by Grönroos (2004, p. 142); the development of new and better services is not fully appreciated by the customers, not because they are unwanted but mainly because the benefits of these new features are not communicated properly to the customer. This means that the customer is not willing to pay more for the new service provided. A long-term commitment to a Full Service contract is also a big investment for ABB, both in time and money, and points out the importance of choosing the right customers. A long-term commitment requires stabile counterparts that share common goals.

A partnership is developed between the maintenance provider and the manufacturer. This process is described in the following model:

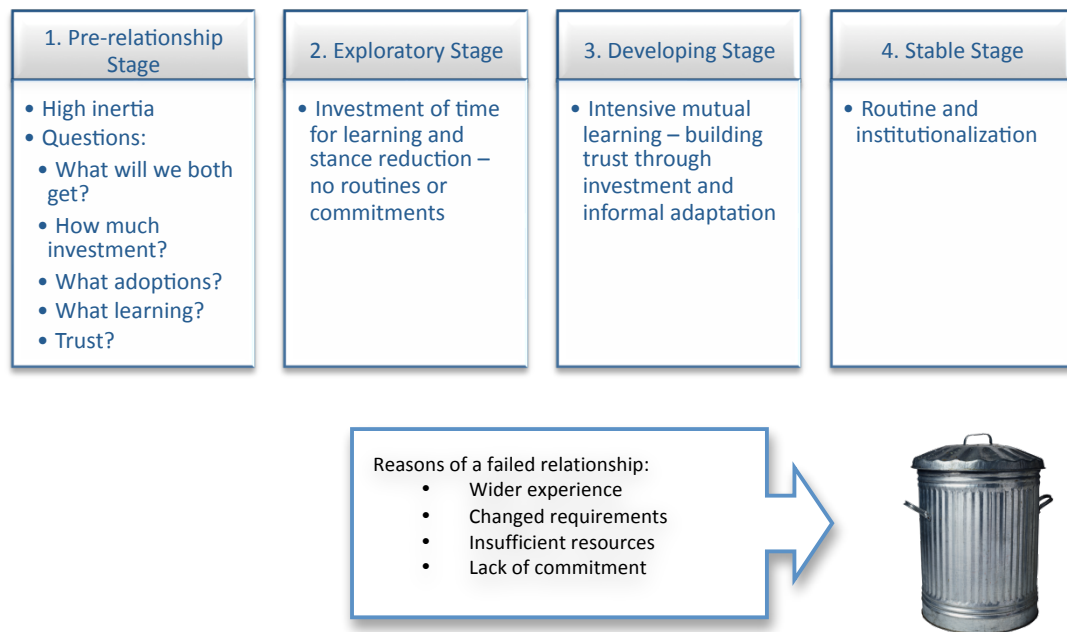


Figure 17 The development of buyer-seller relationships in business markets - Here modified to suit outsourcing services. (Ford et. al 1998, p.29)

The model in figure 17 summarizes the different stages in the process of developing a relationship to a partnership. The critical stage is the first stage where the right questions have to be articulated and answered properly. This is the groundwork for every successful relationship. It is also important to bear in mind the main reasons for a failed relationship during the whole process of development. It is easy to not pay enough attention to the changing conditions for the contract or to lose the focus.

The importance of image and brands has increased within the maintenance business and it is very much related to products. Most industrial service and maintenance purchasers would not consider buying service or maintenance from a provider that not makes related products and do not have that kind of explicit knowledge. Having a reputation of being a supplier of great products and of being in the frontline of the technical development makes the service provider an attractive choice for maintenance services. (Berggren & Bergkvist 2006)

4.3.2 Summary of the business-to-business relationship theories

The relationship ABB Full Service has with its client could simply be described as a business relationship. However, the word partnership actually better describes this specific kind of outsourcing relationship, the word is often associated with positive characteristics such as cost efficiency, flexibility and enhanced service quality.

Furthermore, for a successful partnership, establishing mutual trust is of outmost importance in order to achieve a deep and long-term partnership.

A partnership is often a delicate dilemma; both parts want the best out of it at the least input. Especially at outsourcing situations the service provider could face problems with clients demanding more and more service for the same price as earlier, or even less. This can be avoided by setting up mutual goals and making sure that both parts equally shares the rewards and risks linked to the business.

4.4 Summary of the theoretical framework

This chapter outlines the theoretical framework, which is one of the foundation inputs from which solutions are to be found. His chapter has explored the theoretical landscape of three key areas; organization, outsourcing and the client-supplier relationship. Critical areas in relation to these broader subjects are change management, knowledge transfer, partnership development and organizational learning. An expanded part on outsourcing terminology has been included in the form of an overview of the current academic literature in preparation for a discussion later in the thesis.

5 Assignment Reflections and Solutions

This chapter is the result of the ABB-case analysis and presents possible solutions to the specific assignment from ABB. These solutions are grouped into two themes that are presented separately. The chapter ends with an analysis of the possible future for Full Service and an investigation of the link between problems identified in chapter three and the solutions.

The chapter is about solutions to, and reflections on, the assignment from ABB. The conclusions is formed, in light of the given assignment, from the merger of the following parts; the understanding of the Full Service business, the problem analysis and the researched theories. In the final conclusion of the problem analysis, two main themes were identified as critical to the assignment, the supply and development of competencies and the forming and nurturing of the client relationship. This path was followed in forming the theoretical framework for the thesis, beginning in a broad descriptive discussion of the organizational problems associated with the Full Service business from a variety of perspectives, on to a more specific discussion on the outsourcing organization and further on dissecting the business to business interface. Throughout the theory chapter, specific attention was given to aspects relating to the two themes, competence development and nurturing the client relationship. As a natural progression, the solutions presented in this chapter are grouped in these two themes.

The method for finding specific solutions to the ABB assignment is by support of theories, best practices identified in interviews and ideas of the authors. This is done with a hermeneutic approach, interpreting the subject in the context of larger theoretical and empirical systems (Larsson 2005, p. 18). A hermeneutic circle based on theory, empirics and the authors' own input formed an understanding of the subject and led to ideas of solutions. A key part of this process was synthesizing insights to form applicable solutions through group discussions and brainstorming.

The two themes identified in the problem analysis is a natural base from which to discover solutions. Through a selection process some ideas are discarded due to factors such as achievability and fit with the overall objectives. Starting from an idea and applying theory and best practices as well as feedback from clients and ABB, the ambition is to bring the original seed of an idea to a full-blown solution. The presented solutions are in some cases already in use at a Full Service site. However, in these cases the idea has been identified as a best practice and suggested to become a standard part of the Full Service concept. Overall, a lot of potential improvement in the Full Service business lays in standardization of existing if yet intermittent processes. Implementation and quantification aspects of each solution are then considered.



Figure 18 Specific methods for identifying relevant solutions – The iterative wheel and the solutions themes.

5.1 The first theme - The supply and development of competencies

Many of the problems identified in chapter three originates from the need of getting ABB Full Service Sweden more productivity oriented. Since there is a lack of sales focus in the Full Service team, with no incentives present to drive sales or in any other way increase the presence of ABB, there is a need for the organization to adapt this focus. By concentrating in how to develop and supply the competence level, the organization would not only strengthen the ABB-awareness of the personnel, but also get better possibilities to offer the client a wider scope of different productivity-increasing activities, preferable ABB-solutions. By increasing the competence of the maintenance personnel as well as of the personnel within the Full Service Development Unit, an insight in how ABB could provide different solutions to the client is created.

5.1.1 Supplying external competence

ABB Full Service should expand the Full Service Development Unit with one or two specialists from relevant lines of business such as automation and power division, which would result in creating a multi-functional team. The main task for the specialists in the multi-functional team is to support the Full Service site managers in the initiatives to, and the performing of, site analyzes. These analyses' purpose is to investigate the potential for increasing the productivity at the site in areas that are not covered by the ABB Full Service methods of today. An example of such analyses could be to investigate the status of the client's power supply and the need for better and more reliable transformers.

The team's members should be recruited from all the different areas within ABB that Full Service wishes to include in its offering to the clients. The specialists should at least have a few years of experience within the ABB area of interest and have a wide professional network. This would also indirectly result in a mutual transfer of competence between the new technical experts and the more maintenance-oriented Full Service personnel. Since the workload and the competence might not be covered solely by the specialists, there is still a need for the Full Service unit to occasionally hire experts from other divisions in order to satisfy the clients need.

A problem with setting up a team like this would be to maintain the competence and motivation for the people within it. No matter how good a specialist is, these skills need to be constantly developed. If a specialist were employed full-time within the Full Service, the risk would be that this person no longer could stay updated with the latest research within its field and for this and other reasons experience a diminishing motivation. The solution is to assign this person half time with working in Full Service and half time with this person's former job in order to ensure the continuous development of skills and professional networks.

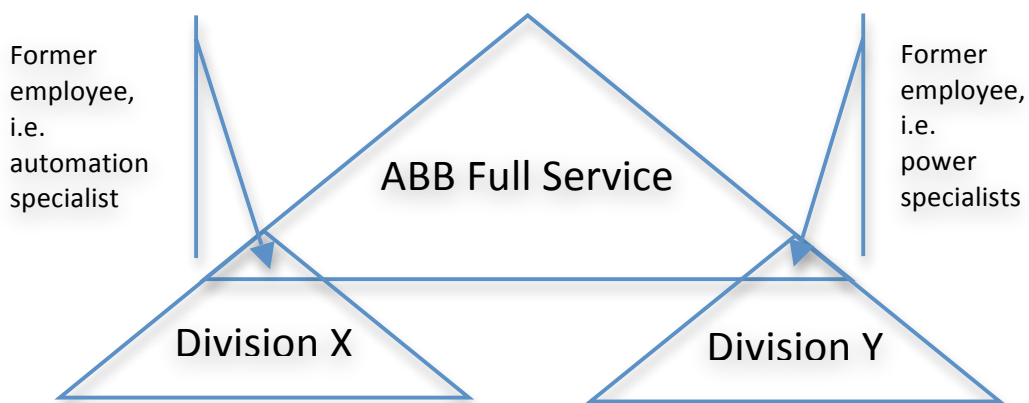


Figure 19 The triangles of motivation for Full Service specialists.

Figure 19 illustrate how the issue of keeping these specialists motivated. The inner triangle represents the original organization where the specialist is assigned. The outer triangle is the new team within the Full Service organization.

5.1.2 Focusing on alert employees

The site manager should, as early as possible identify within the transferred maintenance personnel, alert and ambitious employees. These one or two persons, depending on the size of the site, should in a dialogue with the site manager get an individually suited competence development program where both general and specific areas are covered. The purpose by identifying and developing the competence of these employees is to get an alternative channel to the multi-functional team, by giving them the competence to detect and suggest smaller productivity-raising activities. For example the result of such a suggestion could be investing in a new robot, preferable from ABB robotics. Other objectives for this person would be to serve as a natural link between the Full Service multi-team, the site manager and the ordinary maintenance personnel. This person will translate and communicate the importance and need for new ideas and areas of improvement, serving as a role model or a natural bridgewithin the group of transferred maintenance personnel, communicating and translating new ideas and improvement suggestions, constantly trying to improve the activities. This is an indirect way of influence the mindset of the maintenance personnel.

These alert employees should at first get the opportunity to study at ABB University, or other departments within the ABB organization as well, where they will be getting a much broader competence within areas such as maintenance, service, automation and programming etc, resulting in a deeper insight in different solutions ABB could offer the client. However, by sending the employee to ABB University, he will also get a much tighter connection with ABB.

These alert employees should also get the opportunity to participate in internal and external exchange programs. The internal exchange program, where the employee gets the opportunity to practice in different areas of the client's site, and by having for example mentorships and study circles, will give a deeper insight in, and overall picture of, his work and where possible ABB opportunities could occur.

The external exchange program would include opportunities where the alert employee visits and practice the work on other similar Full Service sites. Influences of possible new best practices, common solutions and an expanded network, where the alert employee constantly gets an update of new; better ways to conduct his work would serve as a foundation for constantly learning, developing and reinventing themselves. When this exchange period is ended, the employee as well as the Full Service site has developed many new different approaches in how to better improve the work at site, resulting in opportunities to more hands-on expand the presence of ABB solutions.

In order to fully capture best practices and to spread new ideas, experiences and solutions of common problems within the different Full Service sites, all the site managers in Sweden should have annually meetings with workshops, where they together with the Full Service Development Unit exchange experience and reflects over how to further improve their on-site work. At these meetings the discussion should be about what is best practice and how these outstanding processes could be implemented at all the Full Service sites. This is supposed to be a forum where new ideas and procedures can be discussed and new knowledge spread throughout the Full Service organization.

5.1.3 Motivation of the maintenance personnel

The maintenance personnel need to get an attitude transformation where the service mindset and a mentality of continuous improvements get well established. It is not enough to only give these newly transferred personnel an ABB t-shirt, assuming that they automatically will switch to the right mindset. Education-packets, especially during the contract start-up, and pedagogic tools should be implemented on a continuous basis. It is of great importance that the personnel can identify their specific role within the organization, and see how their actions could affect the performance of the site. Tools such as *Toyota's 5 why* and *Lean manufacturing* will help the personnel visualize how to conduct their work more efficiently. Mentorship, courses and seminars, study circles, question time, and brainstorming sessions also stimulate the learning of how to more efficiently conduct their work. By focusing in motivating the personnel, to get them to constantly think one step further, not barely

just how to conduct their work, constantly reflecting on underlying reason to why problems continuously occur, improvements will be naturally integrated.

The aim of focusing on how to develop the competence of the transferred maintenance personnel as well as knowledge-broaden specific alert employees, and the resulting different improvements they contribute with is also a way to show the client that ABB provide a great value beyond their agreed assignments. An indirect result is a client with a more positive view of ABB, more receptive to different productivity improvements the Full Service specialists/sales persons suggest.

5.1.4 Summary of the first theme of solutions

- Recruit and integrate one or two specialists from relevant divisions such as automation and power divisions into the Full Service Development Unit.
- The Full Service site-managers should identify alert and ambitious employees and offer them knowledge development programs at ABB University as well as internal and external exchange programs between different Full Service sites.
- Annually held meetings with workshops between the different Full Service site-managers and the Full Service Development Unit in order to identify best practices.
- Focusing in motivating and creating a service mindset, where continuous improvements reflect the work the maintenance personnel conduct.

5.1.5 Analysis and reflection of the first theme of solutions

A crucial part of ABB Full Service's business concept is in the transfer of knowledge between the ABB organization, the transferred client employees and the client organization. Many of the problems reported in chapter three relates to a lack of efficient integration of the different reigning cultures into the new maintenance organization. The aim to focus on supplying and developing competence on different levels of ABB Full Service will solve many of these problems direct as indirect and the overall objective is to create a foundation of organizational learning.

The management of the Full Service organization should encourage processes which release knowledge in individuals and encourages the sharing of knowledge, resulting in employees better equipped for identifying potential opportunities. Since information and relationships within the ABB Full Service organization are both horizontal and vertical, the addressing of social networks and co-operation with interaction between different levels of the Full Service unit creates a mutual learning from each other. Another result of the competence broadening will be the tightening of the connection between the transferred maintenance organization and ABB.

Grant discuss (2005, p. 174) the importance of creating a common knowledge and by using the alert employees as the link between the maintenance personnel and the Full Service management the collaboration and interaction will increase. Many new ideas

on how to improve operations arise from within an organization and the result of a common language that enables interaction between different levels of the Full Service organization will create an environment that embraces new ideas and a sharing of knowledge. Norman describes (2000, p. 26) the importance of internal knowledge transmission and generation as well as how acquiring external knowledge is important tasks for service organizations. Although paradoxical, the knowledge level of a company and the demand for increased knowledge is intimately linked.

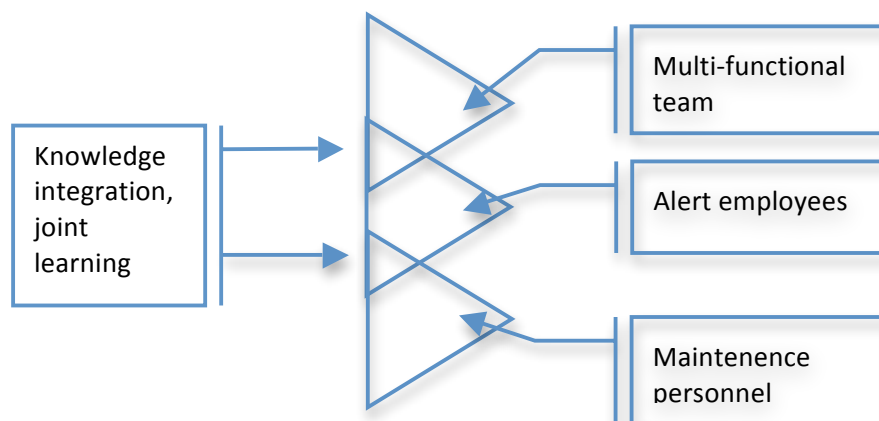


Figure 20 Joint learning and cooperation within each level of the organization at a Full Service site.

To integrate knowledge into the Full Service organization, the multi-functional team as well as the maintenance personnel, must translate their specific knowledge into rules or directives in order to guide the practice and behavior of others. Johnson, Sholes, Whittington describes (2005, p. 133-136) the need for processes that allow the personnel to put their knowledge into a combined process also must be implemented into the Full Service organization. This interaction with the sharing of knowledge and experience is a social process relying on the interest of the personnel, and the success is often assured as long as the mutual benefit is clear. A difficulty is especially the management of the transferred maintenance personnel and getting them motivated and service minded. Tools such as education and the implementation of different pedagogical processes will not alone create a service mindset and an ABB mentality. The dependency of the alert employees is strong, especially in the beginning of a contract and they will serve as role models in how to constantly work to achieve improvements of the work methods. This in view of the fact that there is an underlying need for social contact and trust, and exchange of knowledge more likely occur in cultures of trust without strong hierarchical or functional boundaries.

In order to create an organization that learns and achieves improvements, the maintenance personnel should be stimulated and given more acting space. Handy

(1989 see Bruzelius & Skärvad 2000, p.245) discuss this and also explains what common obstacles that does not encourages a culture of learning could be; seeing problems as a sign of failure, ideas descending from a lower level in the organization often is neglected, and that information spread throughout the organization often fails. These are obstacles that the site manager must properly navigate through in order to encourage and motivate the employees.

The site manager must furthermore stimulate the learning process and it is of great importance that when employees enlighten new ideas, they also get the opportunity to participate and to follow how their ideas develop within the organization.

Keller (2001, p. 550) found after case tests that personnel working in multi-functional teams tend to improve their works, especially since more perspectives of a problem were being examined routinely.

The need for specialists that perform site analyzes have earlier created difficulties as it has been unclear from whom these hired specialists should get paid, but the arrangement with a half-time employment at each organization solves this dilemma. The main issue is instead within recruitment. The required specialists must possess both a broad and specific competence within many different areas in order to truly be useful. They must also be flexible since their workplaces probably will be on short-term with many traveling days. Experienced, motivated and flexible specialists are hard to find and the Full Service unit must therefore provide potential candidates the right incentives. A result of this could be that the Full Service organization needs to expand its budget to finance the recruiting of these new employments.

A down side by bringing more functions to a team could be, as Keller mentions (2001, p. 552) that the cohesiveness is diminished as a result of an increased job stress related to the increased work load.

The Full Service organization should in such cases carry the difference between the price the client is used to pay and the price the respective division charge. This since, even if the organization not get any direct revenue, the indirect benefit from an increased client value and satisfaction, with resulting productivity-increasing are of greater importance. Furthermore it is a sales argument, when promoting the Full Service contract towards new potential clients, that the contract includes the total expertise of whole ABB and this is important to live up to, any internal ABB sub-optimizing problems should not affect the client.

There are some good examples of companies, which use different types of multi-functional teams to enhance productivity and ensure organizational knowledge. The use of pre-defined groups within the emergency health care is widespread and a necessity to deliver safe and accurate trauma treatment. At consulting-firms like McKinsey and Accenture the use of multi-talented teams is a way to meet the customers demanding assignments. Often are the assignments given to consulting firms' comprehensive and spreads over many businesses and areas. To find a solution that deals with all aspects of an implementation, experts from all professions need to be involved in the process of finding a solution. This is secured by putting them

together in teams. In the manufacturing industry, companies like Volvo and Ericsson use multi-functional teams to ensure best practice and a continuous learning curve as well as keeping its employees motivated. Volvo has also been successfully using different exchange programs where similar construction units have practiced in different parts of the organization.

5.1.6 Implementation of the first theme

The project manager should, during the Partnership Development phase and in the stage *Building the solid foundation*, identify potential alert and ambitious employees and recommend the start-up manager/site manager different candidates suitable for individual knowledge development. The site manager should during the mobilization phase organize a schedule in what, why, by who and when the development program should embrace. This to reduce time spent when training and introducing new processes in the implementation phase. During the implementation phase the site manager must begin to transform the mentality of the maintenance personnel into a service mindset by having workshops and seminars. The alert and ambitious employees should here serve as a role model by leading the way of the change. The site managers should during the entire Contract Management and Development phase focus on how to continuously work with the aspects of knowledge management mentioned above.

The use of the specialist within the multi-functional group is present both during the feasibility phase as well as later when it is time to develop the contract with the client to cover more than just fundamental maintenance.

5.1.7 Quantification

In order to fund the multifunctional team, the Development Unit would have to expand their budget with approximately 1.2 million SEK. This since the salary of an ABB employed specialist is estimated by the authors of the thesis to 0.6 million SEK/year. The two specialists, working part-time within the Full Service organization, would however rapidly bring back this investment to the organization. An example of this is the extended income from the site analyses the specialists would conduct; according to Staudinger²⁴ ABB charge the client 0.3-0.5 million SEK depending on the scale and complexity of the needed analyze, at each occasion and these specialists would easily perform five to 10 analyses each year.

5.2 The second theme - Forming and nurturing the client relationship

In this second theme the focus will be on the connection between ABB and its clients. How can it be developed to enhance sales for ABB and productivity for the clients? Activities and processes that support the development from a professional relationship to a true partnership are presented. Some of the problems earlier identified for ABB were related to the need of an update of the storylines. This need will also be addressed in the following theme.

²⁴ Frans Staudinger, Senior project manager, ABB Full Service, interview, Västerås, 080218

5.2.1 Active work with the client relationship

This is a solution concerning the sales process of ABB Full Service and how to work with sales of productivity linked activities in a professional relationship. Judging from the problem analysis it is clear that ABB Full Service needs a structured approach to sales that goes beyond the process leading to a signed Full Service contract in basic maintenance. ABB can become better at cooperating with the clients in creating and conducting projects for mutual benefit. There are two different improvement areas in question.

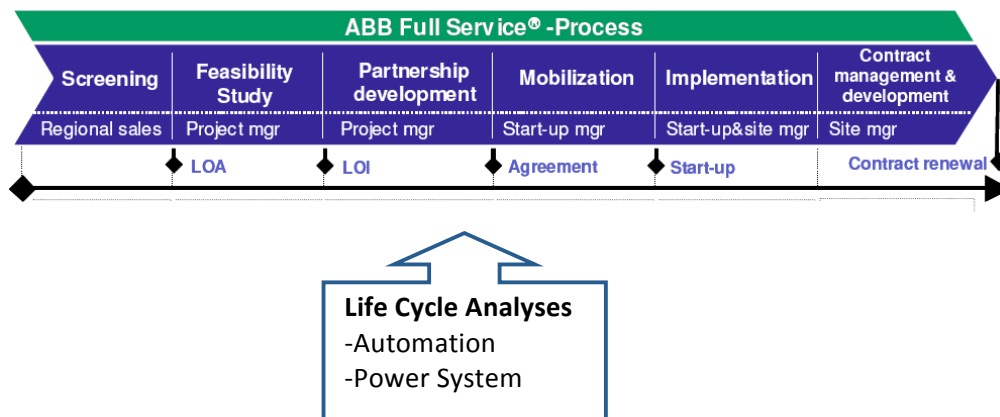
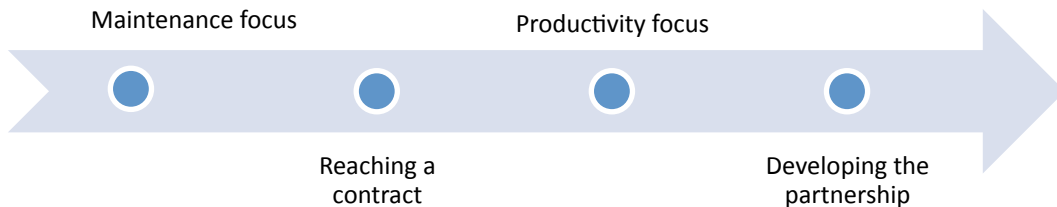


Figure 21 The implementation of Life Cycle Analyses in the Full Service business plan.

ABB should develop an improved sales process in line with the new agenda of shifting to a productivity focus. There are several strong arguments for why both the client and ABB should benefit from such a shift. The sales process however is only concerned with the benefits on the client's side. The core argument here is that ABB Full Service can combine a thorough understanding of the client with the assistance of its maintenance organization with the technical competence in areas such as automation and power technology from all ABB divisions. Several additions to the sales process are required in order to reach agreements that fulfill the future vision of Full Service. Concrete examples of such additions in the Feasibility Study are broader Life Cycle Analyses, making a full site inventory and assessing the productivity related improvement potential. These studies would then be included in a Productivity Management Assessment and used as material for a Productivity Management Master Plan (PMMP) in the Partnership Development phase.

ABB's sale approach:



ABB's objective:

Figure 22 A timeline of the change process for the Full Service business.

Much like the already existing Maintenance Management Master Plan (MMMP), the productivity plan would be aligned with the client production strategy. This is a document created jointly between the client management and the Full Service organization that would state the intentions in the productivity area. The PMMP would have a more long-term focus than the MMMP and would not be binding, instead suggesting possible productivity increasing projects and assessing the improvement potential of these. Perhaps the client has a low level of automation at the site, then the plan would suggest a more thorough automation analysis in year one, and depending on the outcome of this an automation project in year two, then in year three the focus could shift to an assessment of energy efficiency and so on.

5.2.2 Developing the sales process after the relationship is established

The other improvement area is in developing the sales process *after* the relationship is established, this holds true for both maintenance activities and broader productivity related work. In the past some Full Service partnerships have been broken up after the revised and more efficient maintenance approach has been implemented by ABB. If the client comes to believe that ABB has nothing new to bring to the table it is a natural reaction to again take over the maintenance operations. The challenge is in maintaining and developing the client relationship by constantly bringing in new ideas and showing long-term improvement plans. If ABB has more competence in maintenance and a broad range of expertise within the organization, this must also be utilized and realized at the client site. ABB Full Service must clearly and repeatedly show the client that they could not come close to doing the same work on their own.

To stimulate projects and analyses that go beyond maintenance and focus more on overall productivity an Internal Productivity Plan (IPP) could be created. This would be an internal ABB document focusing on sales strategy; there are five key objectives of this plan:

- Increasing the client's productivity.
- Showing the client continuous productivity improvement in a wide range of areas.
- Showing the client what comes next, a long-term engagement plan.

- Increasing the Full Service agreement turnover.
- Increasing sales in productivity related areas such as analyses and consultancy work.

→ All this will in the long run lead to an increased ABB equipment and systems sale.

The IPP is a way to focus the attention of the Full Service site managers and crew on productivity issues. In order to achieve the above objectives, the Full Service organization must put pressure on the Full Service sites to facilitate and create such projects. This is a sensitive issue; it is of paramount importance to nurture the relationship with the client. By putting pressure on the site manager to conduct productivity projects ABB might risk losing the client's confidence in that ABB's sole objective is to care for the client's best. To avoid the conflict of interest for the site manager that this might cause, the idea is to keep the demands independent. ABB could require that there should be at least one productivity related project at the site in a specific year, but ABB should not require that this is an ABB project. The only responsibility of the site manager is to convince the client of the need for, for example an energy efficiency analysis. The client should then choose the best supplier of this analysis and if they do not use ABB, the site manager has still fulfilled the demands of the year for productivity related projects.

It is important to not forget that as in many sale situations the clients might need education in order to fully understand and accept the need of such analysis. The process of informing the client is a delicate matter and cannot be rushed, but the forum of a partnership gives good presumptions. It is much harder to convince a client that you do not have a previous relation to. If you as a service and outsourcing provider have a record of giving good advice, you will of course be more likely to succeed with convincing the client the next time.

The IPP should be created together with the PMMP and be updated every year. The document will be created by the ABB site manager in cooperation with the responsible sales person and the proposed team of cross-divisional experts suggested in the first theme of solutions. The site manager will be the one responsible for fulfilling the key objectives set from the IPP.

A good way of motivating the customer to stay and renew the Full Service contract and to really elucidate the ABB-factor of a contract can be to include a discount of ABB products in a Full Service contract. That gives ABB an advantage when new contracts and projects are initiated and it also supports the making of a true partnership. "If you choose us at ABB, we make sure to give you a discount on our products". A step even further that line would be for ABB to suggest investments at the client's plant and also fund them. This should be based on the making of a deal with the client guaranteeing that ABB could get a bigger share of the financial benefits of such a productivity rising activity than for the normal Full Service contract.

5.2.3 Summary of the second theme

The suggestions to ABB regarding how to nurture and develop the relationship with the client can be summarized as follow:

- Combine a thorough understanding of the client from its maintenance organization with the technical competence.
- Additions in the Feasibility Study: Life Cycle Analyses, making a full site inventory and assessing the productivity related improvement potential.
- Include the results of the new studies in a Productivity Management Assessment and use it as material for a Productivity Management Master Plan in the Partnership Development phase.
- Include an Internal Productivity Plan to be a part of the site managers' daily responsibilities.
- Include discounts or even investments of ABB products and services in the Full Service contracts.

5.2.4 Analysis of the second theme

By implementing this theme of suggested solutions, ABB Full Service will have a better and more structured approach to the partnership development towards its clients. Once the partnership status is reached, the IPP will insure that productivity enhancing projects are initiated. Projects that in the long run will make the contract more profitable for ABB and hopefully also result in sales for ABB product and service divisions.

The Life Cycle Analysis gives ABB the necessary information needed to understand the potential of the client. The difficulties of making these screenings compulsory in the Feasibility Phase relates to funding and expertise. It is critical to make the client understand the benefits of such analysis to ensure the willingness to pay for it. If this fails ABB Full Service could pay for the experts conducting the analysis, considering it as an investment or cost of sale. It is however difficult to calculate if such an investment is profitable or even what the exact result is. This type of projects would be in line of what Peisch claims (1995, p. 24) to be important, the creation and display of value creating activities that in the long run nurture a partnership and makes it last longer.

Related to this problem is the question about who will perform Life Cycle Analysis. The question of hiring internal consultants from other divisions as experts highlights the "One ABB"-dilemma. If one division of ABB benefits of an action, should another division accept lowered margins? A expert from i.e. Automation division making a Life Cycle Analysis of a factory can in this times of high business activities earn a substantially income to its group. By accepting the lower price ABB Full Service can charge its skeptical clients, the margins of the Automation group will be lower. A solution to this problem is for ABB Full Service to hire these kinds of experts part-time, as suggested in earlier solutions, or charge the client full price, but that will make the sales work of the analysis even harder. Perhaps the client can pay a part and ABB Full Service the difference for the ABB Automation expert? Grönroos

described (2004, p.142) this dilemma, how a client is unwilling to pay more for more service; the client always want more for less, especially by the time the contract is running.

The results of such analysis would however be very valuable for both ABB and its client. It is not like these analyses never are performed today, but it is done rarely and not as a routine. The suggestion is to make these kinds of analysis almost compulsory for new ABB Full Service clients and then repeat the process at appropriate intervals. ABB can use the results to get a better understanding of the clients business and at the same time the status of the factory's equipment is clarified, giving the site manager a good idea of where the next problem will arise. This enables the site manager to be one step ahead and plan in what area the next project should be initiated.

For the client the main benefit of the analysis is knowledge of the status of the production equipment and answers to the questions; when do the manufacturers no longer support the critical parts of the machines in the production line? When must a new investment in replacements be made? When is upgrading a product no longer financially motivated?

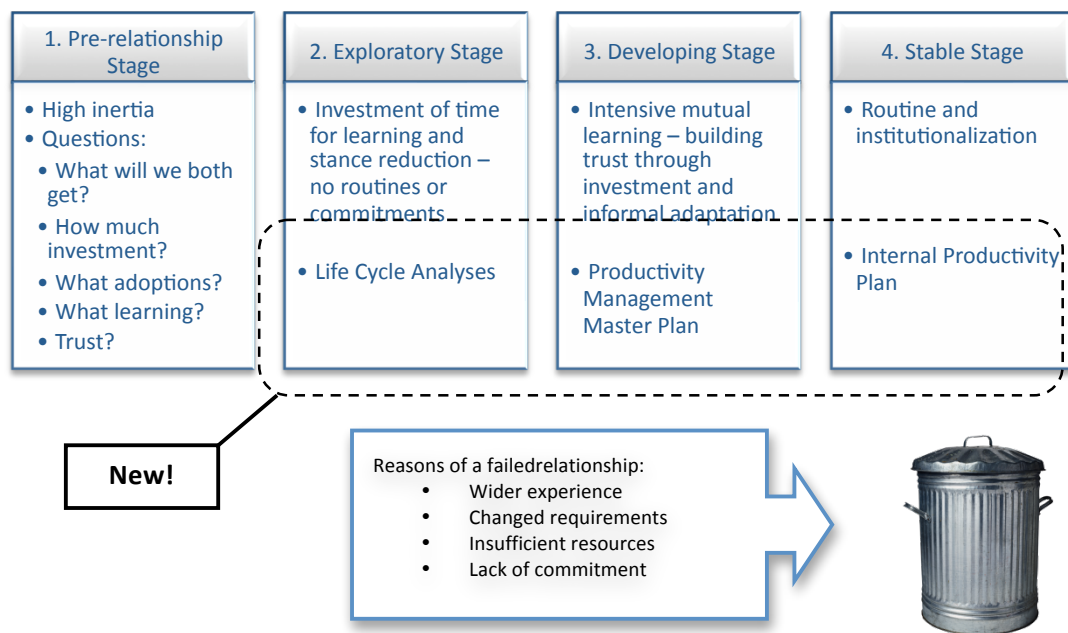


Figure 23 – The development of buyer-seller relationships in business markets - now updated according the solutions suggested in the theme, (Ford, et. al, p.29).

The purpose of an IPP is to get a systematic approach of the internal sales work and at the same time not compromise the much-needed independence of the site manager. This is a process that fits under the fourth stage, the Stable stage in figure 23 of developing routines and institutionalizing. The plan only states what productivity enhancing projects shall be conducted, not that it necessarily must be ABB that wins the contract and performs them. ABB will of course have an advantage of already

being on site and having good relations with the client, the trust from the third stage of the model in Figure 23.

The problem with formulating a plan like the IPP is to make it something more than just a paper. It must be a constructive process where the ABB Full Service development team and the experts from the product divisions together with the site manager formulate a plan for the contract period. What are the focus areas for the next years? This plant needs a new production line within two years, how can ABB best act to both ensure that the productivity is enhanced and maybe get a piece of the new contracts. Should the Plan include a project within Automation? Maybe the client would be helped by analyze the level of automation needed to enhance the productivity.

Sometimes a client needs to be educated in order to accept certain projects and new ideas from ABB. The site manager must be a good sales man at the same time, as this person must act in order to help the client the best way, even if it means giving the job to a competitor. Augustson and Bergstedt writes (1999, p. 80-81) in their article *Outsourcing of IT-services* about the necessity of trust in a partnership relationship. These types of actions really bring that kind of trust to the limit, but it is also an excellent opportunity for ABB to show its client that they are serious in the commitment of their mutual businesses.

Some customers have expressed that they have not really experienced the full advantage of hiring one of the largest engineering companies of the world. The outcome of a contract with ABB Full Service is kind of average and not really groundbreaking. These actions can make the client more aware of what benefits can come out of a partnership with ABB. The suggestion of a discount on ABB products or investments in the client's plant reinforces the positive image an ABB partnership can have. Like Spekman (1991 see Stuart & McCutcheon 1996, p.7) claimed, it must also be remembered that each client need its own solution, there is no blueprint of a process that fits every client and every sale situation. This kind of approach to the partnership guarantees that kind of tailor-made projects with the best for the client in mind.

5.2.5 Implementation

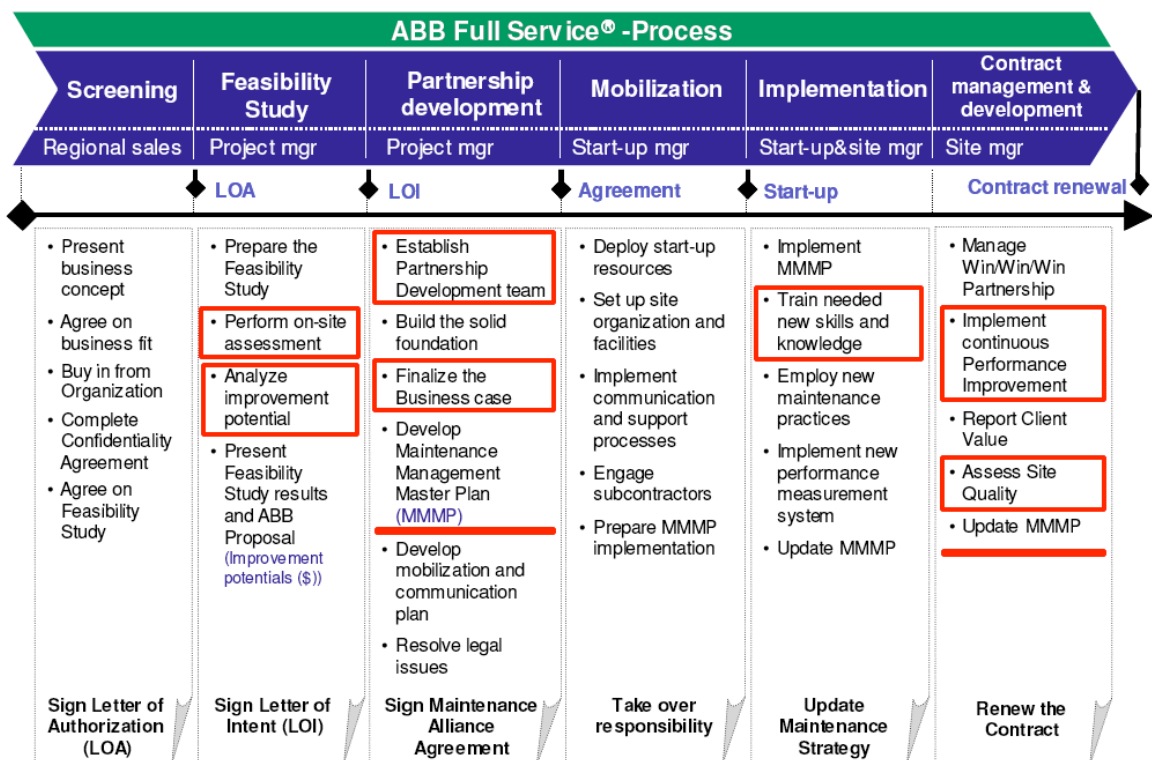


Figure 24 The Full Service business process – adjustments highlighted

The marked areas are the ones affected by the suggested solutions. In the Feasibility Study the add-ons of Life Cycle Analysis and analysis of making a full site inventory and assessing the productivity related improvement potential is performed routinely.

Once the analyses are performed, the results are used in the Partnership Development phase to finalize the expanded Business case. In this phase the MMMP is also conducted, now together with the PMMP.

In the Contract management & development phase the storylines are updated with the IPP and the new updated PMMP.

5.2.6 Quantification

The question must be how to value these kinds of suggested actions from a financial aspect. What is it worth for ABB? What should a reasonable financial objective be? It is close to be outside the scope for this thesis but according to interviews with ABB representatives the target internally is that a Full Service contract should give ABB extra sales worth 10 % or more of the contract value. Earlier one of the cases presented in this thesis had a contracted value of 13 million SEK per year and it generated 3,5 million SEK in increased sales during that same year. However, remarkable no one at ABB follows up these figures routinely and according to

Enquist²⁵, it is a very moderate target. The potential for extra sale should be up to 20 % of the contracted volume after the implementation of the suggested solutions on this theme. This follow up must be on a month-to-month basis to work efficiently as a key financial objective.

5.3 Final Analysis and Summary of the Solutions

In this fifth chapter several suggestions for improvement of the Full Service concept have been presented. In table 5 is a short summary of the solutions suggested in the two themes.

Table 5 Summary of the solutions suggested in the two themes.

Supply and Development of Competencies	Building and Nurturing the Client Relationship
Recruit specialists	Combine the technical competence with the understanding of the client
Attention to alert employees	Life Cycles Analyses
Annual meetings and workshops	Productivity Management Master Plan
Focus on a service mindset	Internal Productivity Plan
	Include discounts and investments in the Full Service contracts

As previously mentioned, for maximum impact, new ideas as well as those already in use at one site need to become standardized and implemented across all Full Service partnerships. This is intimately connected to the use of storylines and how these are followed. There is some indication of that the current storyline documents could be further developed. In some phases the storyline is too detailed and for some phases there is too little detail in how a Full Service partnership should be managed. The storylines should represent the core of the concept, in other words they should outline the minimum demands put on a site organization. In line with the two themes in this chapter, the storylines need to address how to manage the staff and how to manage the client relationship. Now, there is naturally some very substantial differences between one Full Service site and another, one cannot manage them all in the same way. Nonetheless, ABB needs to define a concept core that constitutes what Full Service means which is applicable to all sites, no matter if it is a steel mill or food manufacturer. Some of the solutions presented in this thesis could be included in such a core because they are applicable to all industries. This is how working solutions and best practices from sites should be standardized and implemented in all Full Service organizations.

²⁵ Lars Enquist, Sales person, ABB Full Service, phone interview, 080429

5.3.1 Reflections on the ABB assignment

As a conclusion of the work with Full Service it could be appropriate to take a step back and revisit the original assignment. Through this project a lot of insight into the business model has been gained, in light of this one can assess whether the proposed changes are a sound strategy. In one sense, there is plenty of development potential in the Full Service concept such as it is today. Some of the proposed changes in this thesis address problems inherent in the current incarnation of the concept. These are changes that could be implemented without attempting to broaden the service array by utilizing more of the expertise in the product divisions. This includes working with the personnel at site and strengthening the client relationship.

However, there are many strong arguments for why the new Full Service strategy actually coincides with the incumbent problems and where the new strategy can help address the organizational problems present in the current Full Service model. The development of the Full Service business in this new direction stems from a desire to increase revenues from the Full Service contracts and to realize the potential of the Full Service business as a sales channel for ABB equipment from the product divisions. In scrutinizing and suggesting hands on implementations of the new strategy one can now see that such a strategy goes hand in hand with some positive side effects. In effect, by implementing the strategy one would at the same time solve some of the problems troubling the current Full Service business model. As discussed above, there are some problems in developing a positive attitude and strengthening the competence of the new employees at site. Other problems relate to the client relationship and in assuring a mutually beneficial partnership. By taking the step of incorporating more of ABB's competencies into the Full Service concept one can potentially ease some of these issues and in the same time reach the objectives of increasing revenue and improve cross-divisional sales. The reason for this is twofold:

- The proposed solution for incorporating product division competencies and thus increasing the service offering is to bring in experts from these divisions into the Full Service organization and out to the Full Service sites. These experts will in turn, as proposed, become a central part of the competence development. So the necessity of the one objective is at the same time the solution of an apparently unrelated problem.
- The other objective is to increase sales of productivity related work and ABB equipment, in other words to make more of ABB available through the Full Service partnership. One of the problems in the current Full Service concept is that clients complain that they are not seeing enough benefits from hiring one of the biggest engineering companies in the world, something they were promised during the sales process would bring a lot of value to the partnership. By broadening the range of services ABB can increase sales and at the same time show the client how they continuously add value to the partnership in a long-term perspective. Again, by fulfilling the objectives of the new strategy one simultaneously deals with an existing problem.

In conclusion it is clear that the new strategy is beneficial in more ways than was anticipated. In taking a step back to review the original assignment it is clear that the new direction is not only a natural way to develop the Full Service business but also a necessary step to improve the core concept.

5.3.2 The future of Full Service

It is highly probable that the Full Service business will grow in Sweden as well as globally. Outsourcing in general is less common in Sweden than in other Nordic countries. According to a report from the consultancy-firm Accenture the market for outsourcing of complete business processes is expected to more than double in Sweden (accenture.com 080331). In Finland, outsourcing is more widely used and this is also where the outsourcing of maintenance first originated in ABB. Thus one can look upon Finland as an early adopter when it comes to outsourcing in general and outsourcing of maintenance specifically. Judging from the Finnish market, there is still a lot of growth potential for Full Service in Sweden. Full Service in Finland has a turnover of 190 million USD compared to Full Service in Sweden 35 million USD²⁶. Considering the likelihood of major growth for the Swedish Full Service organization, one can speculate on possible consequences and try to preempt future organizational issues relating to this scenario.

Reorganization

One possible problem on the horizon is the current Full Service organizational structure. Today there is a separation between major and minor Full Service agreements. The major agreements are handled through the national Full Service organization, answering to the head of Full Service. The minor agreements are handled by the regional Service organization responsible for their geographical area, answering to the head of the regional organization. The reason for this division is that ABB wanted to work with more focus on the major agreements within one nationwide organization and with the smaller ones the need for a geographically close support organization tied them to the regional Service organizations.

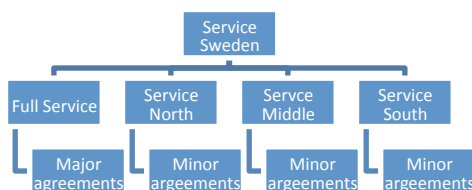


Figure 25 The current organization of Full Service with regards to major and minor contracts.

As the Full Service grows it may be wise to reconsider this organizational structure. In order to give full support and ensure consistency across all sites one should organize all Full Service agreements under one dedicated organization.

²⁶ Karl-Johan Larsson, Manager, ABB Full Service Development Unit, phone interview 080213

5.3.3 Transition towards a service focus

There is a global trend where traditional manufacturing companies are slowly transitioning towards becoming increasingly service orientated. There are numerous examples of this trend, such as IBM, GE and so on. This trend has also affected ABB but so far only marginally and the focus on products is clear. The potential in the after sales market is great and many companies are shifting from generating most of their revenue through products to service. The trend is illustrated in the following model:

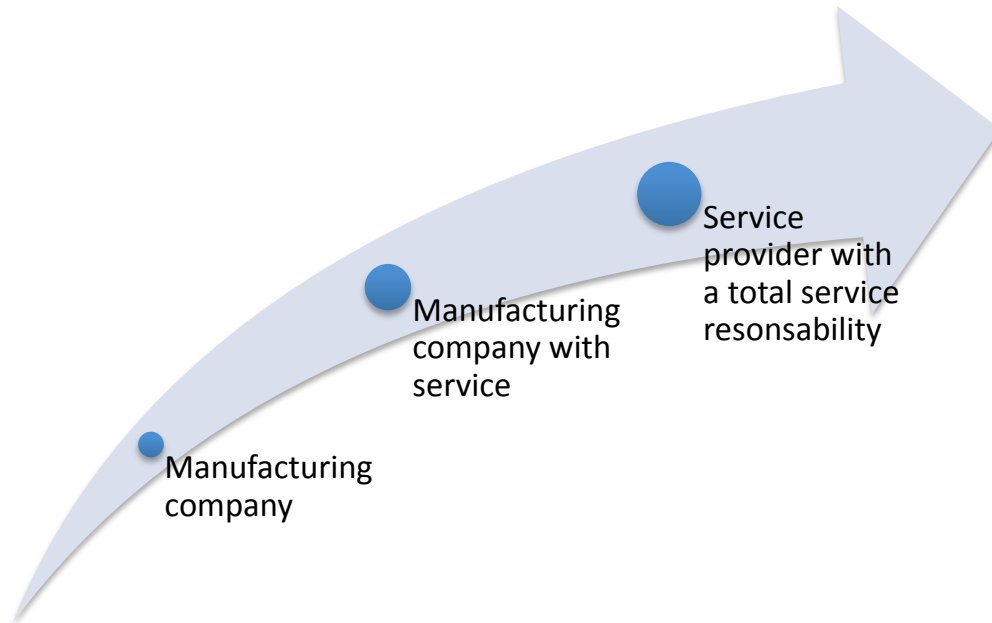


Figure 26 The development from a manufacturing company to a service provider.

ABB should perhaps prioritize services more, an investment in Services in general and the global Full Service organization could well be the tipping point for developing a global market for technical outsourcing services. Such an investment could be in the form of creating a global Full Service support organization that will not charge the national organization for their services. Another idea is to invest in R&D of services and maintenance, perhaps building a *Centre of Excellence* in services.

5.3.4 Limitations

The solutions presented in this chapter are based on and developed through the chosen method. The scope of this thesis is constrained by the project participants' area of knowledge and time. The work has been focused on a holistic approach, attempting to address all major issues and suggesting methods to reach all objectives of the assignment. This goal has been accomplished only partly, there are still some issues unanswered and the suggested solutions can potentially bring new problems. There is also the question of the depth of the suggested solutions. Since the focus has been on a broad approach, there is a lack of detail in the suggestions. However, this is

justified on the basis of the necessity of addressing the complete range of issues and assignment objectives in order to facilitate the shift demanded by the new strategy. Where possible, suggestions on implementation and an outline of further steps have been provided.

5.3.5 Internal Validity Assurance – Linking Problem to Solutions

Table 6 Linking problem to solutions.

Problem	A.1	A.2	A.3	A.4	A.5	B.1	B.2	B.3	B.4	B.5	B.6	B.7	C.1	C.2	D.1	D.2	D.3	D.4	D.5	D.6	D.7	D.8
Relevance Rank	High	High	Low	High	High	High	High	Low	High	Low	High	High	High	Low	High	High	Low	High	Low	High	High	Low
Competence Development	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■
Client Relationship		■					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Final Analysis															■							
Unsolved								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

To conclude the chapter on solutions it is appropriate to assure the internal validity by linking problems to solutions. In table 6 each problem identified in chapter three is checked to see if the issue has been resolved by the proposed solutions in this chapter. In this analysis it has been decided to focus on the problems that are not or only partially resolved and discuss the reasons for this. Problems D.3 and D.6 relate to informing the rest of ABB about the Full Service business. They are indirectly and partially solved by forming multifunctional teams consisting of members of ABB product divisions. These individuals will inevitably spread information about Full Service through informal communication channels, although not on a large scale, this is the reason for the partial status. Problem C.1 relates to sales coordination between Full Service and the ABB Service division, it is thought to be partially solved by the idea of unifying the Full Service organization which would increase the pressure to resolve such issues. From the table it is clear that all problems have not been resolved, this is most evident in the D class, relating to ABB-wide issues but two problems in the B-class are unresolved as well. On closer examination these are problems outside the scope of this thesis, the reason they are not resolved is that this would require changes in, or new directives from, the global or national organizational level of ABB. This is one of the chosen limitations in the first chapter on method.

6 General Reflections and Theoretical Contributions

This chapter finds general conclusions from the work with ABB Full Service. Are there lessons to learn for other companies in similar positions? How well does the current theory explain issues facing the Full Service organization? Are there any possible theoretical contributions to be drawn from the work?

The aim of this chapter is to bring the thesis to a higher level of abstraction. Conclusions will be drawn from problems, theory and proposed suggestions. An answer to the core academic issue, as stated in chapter one, is sought in light of the work done with ABB Full Service. The first part is a discussion on outsourcing, connecting what has been learned empirically to the theoretical discourse. Here, new terminology is suggested which is needed to fully describe the form of outsourcing engaged in by ABB Full Service. In the following parts of the chapter, characteristics and qualities of the defined phenomena are discussed. This is done through the two general themes that have been used in previous chapters, focusing on competence development and the client-supplier interface. The reflections and theoretical contributions offered in this chapter should be useful to a broad array of areas where outsourcing of services is considered; facility management, HR, product development, IT and financial services just to name a few. The conclusions should be especially interesting for service providers engaged in outsourcing activities that are tightly intertwined with the physical operations of the client. Most suggestions and reflections are from the perspective of the service provider but there are insights to be gained for organizations considering outsourcing as well.

The method for selecting these important aspects of the thesis is to put the findings from the ABB-case in a theoretical context. This is an explorative approach where possible gaps in the academic understanding are identified by reading relevant articles and crosschecked with other literature.

6.1 Discussion on outsourcing in general in relation to outsourcing of maintenance

There is a plethora of terms in this evolving field of study and it is still too early to see emerging standards. This is shown through several academic articles attempting to provide a guide to the terminology (Dibbern et. al 2004; Chakrabarty 2006; etc.). In many cases one term has several different meanings, in other cases different terms overlap or define roughly the same phenomenon. More significantly, the model of outsourcing used in the Full Service business is not described in the academic discourse to a full extent. Thus, in order to fully explain maintenance outsourcing from a theoretical perspective, the current terminology is insufficient.

Most of the academic papers on outsourcing relates to IT (Information Technology) or IS (Information Systems) processes. This area pioneered outsourcing services and now a major part of the overall IS-services market is in outsourcing contracts. It is therefore natural that academic attention to outsourcing started in this sector and that

most terms originated in the IS field. However, information technology services differ substantially from many other services subject to outsourcing, maintenance services in particular. There are signs that the general academic studies on outsourcing are still heavily influenced by its IS roots. One should consider the possibility that the subject is not fully explored in the context of other services and that there are still meaningful contributions to be made when reflecting on the field from the point of view of a less academically explored service.






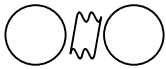
There is not a lot of academic writing on the subject of outsourcing of maintenance (Berggren & Bergquist 2006). The articles that do discuss the subject do so from a fairly narrow perspective and generally lack a contextualization with regard to the broader field of outsourcing. Most articles approach the subject from a strategic point of view, discussing the negatives and positives of outsourcing maintenance (Bertolini et. al 2004; Al-kaabi et. al 2007; Tarakci et. al 2006, etc.). The authors of this thesis feel there is a need to connect this specific form of outsourcing to the broader field and put outsourcing of maintenance in context with other services subject to outsourcing. By taking a step back and viewing the findings of the thesis from a general perspective one can identify where there are missing pieces in the current theory and terminology on outsourcing.

One important difference between outsourcing of IS and maintenance is that maintenance requires staff at the site at all times. This holds true for some other services subject to outsourcing as well, for example facilities and warehouse management. However, most processes that are subject to outsourcing differ from maintenance operations in that there is no need to be permanently present at the site. What separates maintenance operations from many other processes is also the direct link to the physical production process. Different processes have varying demands of presence. For example, service providers offering cleaning services need to be present at the site to do their work, but perhaps only once a week. A service provider in recruiting needs to be in the same geographical area to conduct interviews, but there is no need to visit the client facilities and so on. In the other extreme, IT is possible to outsource to geographically distant locations, what is known as “offshoring”, with no demands on presence at the site at all.

It can be concluded that different types of services, subject to outsourcing, have different demands of presence. This dimension is largely absent in academic literature, at least with regard to differences in presence within the closer geographical area. Whilst the multi-sourcing continuum developed by Wibbelsman and Maiero goes a long way in defining sourcing options as varying degrees of separation between organizations, there is an opportunity to create a similar continuum with a geographical dimension (1994).

Table 7 The geographical outsourcing continuum

Geographical outsourcing continuum

Organizational Situation	Presence Demand	Example Services	Specific Term	Symbolic Description
The business process is managed by a service provider with a permanent organization on site.	Permanently at site.	Maintenance services.	Not available.	
The business process is managed on the site by a service provider with an organization intermittently on site.	Intermittently at site.	Cleaning services.	Not available.	
The business process is managed by a service provider within the geographical proximity of the client site.	In the immediate area.	Recruiting services.	Not available.	
The business process is managed by a service provider present within the same country as the client site.	In the same country.	E.g. product development services.	Onshoring	
The business process is managed by a service provider present in a proximate country.	In a proximate country.	E.g. customer service.	Nearshoring	
The business process is managed by a service provider in any country.	No demand of presence.	E.g. software development	Offshoring	

The table above illustrates the demands put on different service providers. This strengthens the case for added terminology. The latter part of the spectra, concerning onshoring, nearshoring and offshoring, is well defined and discussed in academic literature (Dibbern et. al 2004; Chakrabarty 2006; etc.). On the other hand, the continuum shows that there are areas of outsourcing that, to the knowledge of the authors, are not thoroughly explored academically. At least from the geographical perspective, terminology is missing to describe the organizational situations described in the first three rows of the continuum. This thesis is based on ABB Full Service that is described adequately by the first row in the table – a service provider with demands of permanent presence at client site. This is the area of focus for this thesis and it will be further explored in the following. However, from the geographical outsourcing continuum it is clear that outsourcing organizations with demands of intermittent site presence and service providers that need to be in the immediate area are equally

unexplored academically. Although interesting, these areas will not be explored further by this thesis.

The geographical outsourcing continuum leads on to a continuation of the discussion on presence demands on service providers in general and on providers of maintenance specifically. In most maintenance outsourcing contracts, service provider's staff must devote 100 % of their time to a single client present at their site at all times. This makes maintenance outsourcing a binary business, for each signed contract the service provider needs to employ an entire maintenance organization; it is almost impossible to stretch existing staff across multiple sites. This is the explanation why service providers of maintenance routinely take over the maintenance organization at site and hire the client's maintenance personnel. The only other option would be to recruit the entire staff externally, exclusively for the contract, which is considerably more difficult and would bring a host of negative side effects.

6.2 Intra-organizational outsourcing

The above discussion helps in distinguishing the outsourcing form ABB Full Service engages in. There are two distinct properties of maintenance outsourcing, separating this from other forms of outsourcing:

- The service provider organization must be present at the site at all times
- The service provider takes over the client organization of the outsourced process

As mentioned previously, the second property is a natural consequence of the first. Other solutions to the first demand are impractical and inefficient. This form of outsourcing has some interesting qualities:

- The service provider becomes very closely integrated into the client organization, which demands a highly functional partnership based on trust.
- Because of that the service provider takes over the client organization it must then deal with change management and cultural issues.
- It is simple for the client to backsource the processes, requiring the service provider to show continual improvement and to bring continuously added value to the partnership.

When considering the addition of a new definition to the theoretical discourse two questions arise. Is the phenomenon in question clearly distinguishable and identifiable by some defined characteristics? Are there meaningful qualities of the phenomenon that justifies an addition to the terminology in context of the existing theoretical landscape (Larsson 2005, p. 26)? An addition to the area would be considered cumulative, in that it is an extension of existing theory. As Larsson states; it is important that existing academic terms are applicable to, and discussed in relation to, the empirical material and that new terms are added only where current terminology is insufficient (2005, p. 26). The authors of this thesis feel that these questions are answered affirmatively. The phenomenon is both easily distinguishable and has

meaningful qualities. Further on, the described phenomenon is missing in the current theoretical landscape. It is therefore appropriate to name and define the new term.

Intra-organizational outsourcing:

- Where an organization outsources a business process interlinked with the physical operations, requiring the service provider to take over a preexisting unit and its employees.

The name intra-organizational outsourcing aims to describe the tight integration of the service provider into the client organization. If one were to objectively observe the site, the two organizations would be difficult to tell apart. It should be clear that the term is from the perspective of the client organization; it is intra-organizational because the client essentially outsources part of its internal organization, not just the process. This discussion is relevant because the thesis generally has the perspective of the service provider. It is however natural to define new terms from the perspective of the client since all other outsourcing terms are expressed in this way.

6.3 Virtual and dynamic outsourcing

There seems to be two different types of intra-organizational forms depending on the level of service the provider is offering. In a sense ABB Full Service is a “virtual” service provider in that the client mostly pays for intangible services such as new processes, organizational optimization and a different attitude towards maintenance. There are however certainly some tangible aspects of the offering too; ABB usually brings in a new maintenance manager and sometimes maintenance engineers. The objective of ABB is largely in substantiating the offering, increasing the tangible aspects.

The discussion on tangible and intangible services is important because the degree of “virtual” services has significance in the longevity of the partnership. If the service provider’s major offering is in soft aspects such as organizational transformation, addition of new processes and in teaching a new mind set, the partnership will probably end when the new paradigm is established. However, if the service provider can extend the offering somehow so that it is clear to the client that what is offered is significantly more than what could be performed in-house; there is a case for a permanent partnership. The key is in keeping the distance between what the client could achieve by back-sourcing the services and the value provided by continuing the partnership. There is another important aspect of this reasoning; there is a clear divide in what is demanded from a service provider who works with facilitating an organizational transformation, to what is demanded from a service provider working to establish a permanent partnership. In order to be able to add value to the proposition to such an extent as to become attractive for a permanent partnership the service provider must have a lot of resources and provide cutting-edge solutions from a broad array of areas to offer the client. This probably means that the service provider must be part of a greater organization such as in the case of ABB and its Full Service unit. For a smaller player the challenge to compete with such an added value offering is perhaps too great. A possible configuration would be to create a network

of suitable partner companies that together could form a broad offering, but this would certainly be more complex to manage than using resources within a multidivisional organization. These two different forms of intra-organizational outsourcing have been named virtual and dynamic outsourcing:

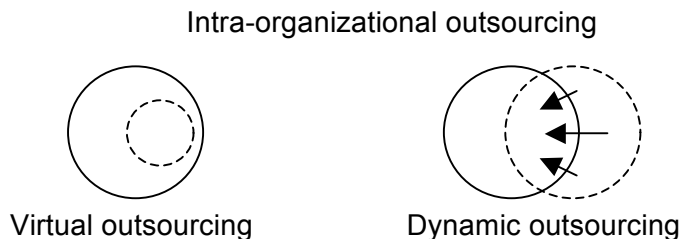


Figure 27 Intra-Organizational outsourcing.

Virtual outsourcing:

- Where the service provider acts as a facilitator for the transformation of an internal service organization by use of intangible services such as change management, new processes and cultural modification.

Dynamic outsourcing:

- Where the service provider provides a continuous stream of extended services by incorporating resources and solutions from a broad array of expertise areas through the intra-organizational outsourcing partnership, ensuring a permanent value differential thus eliminating the risk of back-sourcing.

The focus of this thesis has been on dynamic outsourcing, this is the core of what ABB Full Service aims to achieve. The reflections in the following parts of this chapter deals largely with issues in dynamic outsourcing, concepts and ideas are aimed at organizations that wish to pursue or engage in dynamic outsourcing partnerships.

6.4 Competence development in dynamic outsourcing partnerships

Service providers that work with intra-organizational outsourcing must be prepared to handle the cultural integration of the transferred personnel into the service organization. The cultural impact is often substantial when two organizations with diverse values, approaches and ways of doing business meet, from the top management down to the individual co-worker. A clear understanding of how to integrate the two organizations is needed. Initiatives in integrating the cultures should include communicating visions and objectives. A distinct message of what is expected from the employees and how the management wants them to improve their work would ease the cultural transformation, allowing the employees to see more clearly how the change will affect them. Properly handled, fast benefits can be

achieved but it is also important to realize that the complete integrating process takes both time and effort. This process is usually coupled with increased costs in the initial phase before changes take effect.

For an organization to achieve dynamic outsourcing, focus on the management of the organization's knowledge and competencies is imperative. Expertise and experience needs to be developed and transferred between personnel and units within the organization, and knowledge must also be injected from external sources. By working with these aspects of the organization, service providers can improve the quality and cost effectiveness of their offering and maintain the necessary value differential discussed previously in this chapter.

A key insight is that educational initiatives aimed at relationship building, communication, trust, commitment, and shared benefits is more important than technical competence development in achieving a higher level of service quality. It is important to standardize the processes of knowledge transfer and competence development to create a nurturing environment for organizational learning. All hierarchical levels of the organization must be involved in these processes, laterally as well as vertically. For a service provider within a multidivisional corporation such as ABB Full Service, these processes should be initiated on numerous levels, between individuals as well as organizations. An indirect result of implementing knowledge transfer, between and within different hierarchical levels, is an increased understanding, and the creation of informal communication channels between organizations, sites and individuals.

Vertical learning initiatives are knowledge sharing between different hierarchical levels. These initiatives are mainly targeted at down-streams benefits, where more experienced and competent staff shares insights with personnel on a lower hierarchical level. However it is noteworthy that important information is relayed upwards in the hierarchy as well through such initiatives; this can be information such as improvement suggestions and identification of potential problem areas. The most effective knowledge exchange is often between neighboring hierarchical levels. As seen in the Full Service case, the understanding decreases as the hierarchical gap becomes larger. An example of such an initiative is mentorships, where high potential personnel is identified and matched with a more senior expert. These individuals can then relay gained knowledge horizontally in the organization.

Lateral learning initiatives should be formed between different client sites, exchanging knowledge between staff on all levels, from site management, specialists and down to operations personnel. These initiatives could be in various forms, exchanging personnel between sites during longer time periods, creating inter-site groups discussing best practices and developing informal communication channels to motivate experience sharing. Knowledge and experience sharing should also take place within each site, by improvement groups and other initiatives. Other lateral learning initiatives can be formed on the inter-divisional level, where experts from other divisions than that of the service provider offer new perspectives on the outsourcing partnership and the client sites.

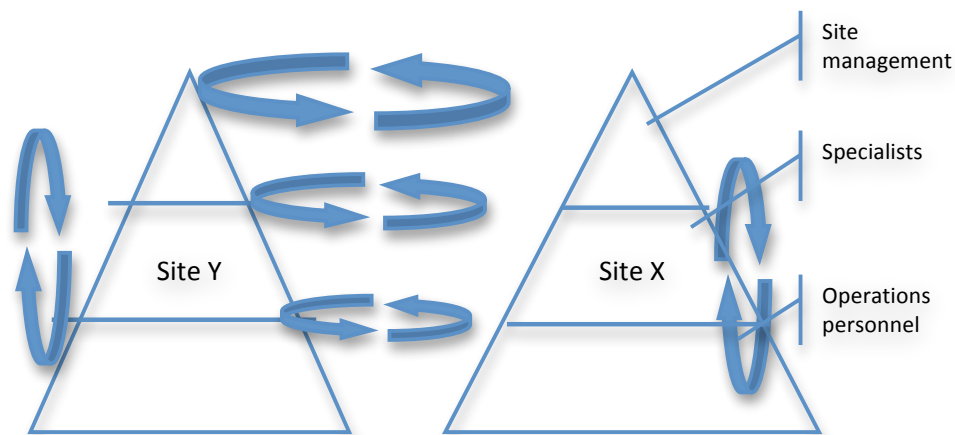


Figure 28 Vertical and lateral learning initiatives should be implemented across the organization of the service provider.

The aim of increasing focus on knowledge and experience sharing within and surrounding the service provider is to find synergies in having more than one service site and in being part of a greater multidivisional organization. By realizing such synergies the service provider can increase the level of its offering and inject added value to the client organization. It is essentially about finding a source of competitive advantage in relation to the client organization as well as in relation to competing service providers.

6.5 The relationship between the service provider and the client organization

With the aim of creating a mutually beneficial outsourcing partnership, sustainable in the long term, suggestions for the case organization ABB Full Service were presented in the previous chapter. Nurturing the client relationship is critical for reaching dynamic outsourcing. There are a few important insights gained from the previous work:

- A true partnership should be the goal for every client relationship.
- The client relationship should be nurtured by establishing trust through positive actions.
- A structured sales process combined with long-term development goals will help to bring mutual value to the partnership.

Lacity and Hirscheim showed (1994) that most outsourcing relationships never reach the partnership status, even if this is a stated goal. By suggesting and initiating projects that clearly aims at increasing productivity and bottom line value for the client the service provider can show its intentions are for the good of the client. This is an important first step in creating a partnership based on mutual trust.

An important realization in this thesis is that clients often want to see more benefits from working with a service provider that is part of a larger multidivisional

corporation. This coincides with the wish from service providers to increase revenue from outsourcing partnerships and provide opportunities for sister divisions.

This means that the service provider must be prepared to take on more responsibility and be willing to go further in sharing risks and rewards (Grönroos 2004). In order to be an attractive long term partner the service provider must offer flexibility and be able to follow the client as the business environment fluctuates. It is important to be able to offer the client contracts that are long term to ensure stability yet flexible enough to evolve alongside the client. Such a combination will increase trust in the partnership and the client will become more interested in deepening the relationship.

A partnership is a delicate relationship that needs to be handled with care. To conduct active sales work in such a relationship without damaging hard-earned trust is difficult. This is why it is so important to carefully plan the sales initiatives and to follow a structured approach with long-term goals, this is imperative in reaching a dynamic outsourcing partnership. One of the suggestions in the previous chapter is to develop an Internal Productivity Plan to ensure that the right activities are performed at the right time. The process of developing such a document is in itself a good way of ensuring that these questions are addressed. An important aspect of such a document is that it focuses on how to increase productivity and add value for the client, instead of turning the focus towards increasing value for the service provider. This relates to Lampert's idea (1999) of a systematic approach to the problem of maintaining an outsourcing partnership in a constantly changing environment.

To create a true partnership, all activities of the service provider should be in the interest of the client, even internal activities must be directed at creating mutual value. To develop such an attitude of including the client's perspective in all processes takes time and effort, but is necessary to achieve dynamic outsourcing.

6.6 Future research

The discussion on presence demands on service providers in this chapter revealed gaps in the current theoretical landscape. Based on this discussion new terminology was proposed. However, it was chosen to leave parts of the geographical outsourcing continuum undefined. This choice was based on the scope and focus areas of the thesis. This presents an opportunity for further research. There also appears to be a good prospect for further research on the link between partnership development and intra-organizational outsourcing, outlined by this thesis. Added conclusions from this special client-supplier relationship could probably be drawn, conclusions that can be useful to partnerships in other contexts.

6.7 Validation of the thesis

With the theoretical analysis finalized, the academic validity of the thesis will be examined in the four-step question process presented in the first chapter.

- **Reliability – to what degree has the layout of the study affected the results?**

The choice of the *organizational* perspective for the thesis is considered to have been the choice that influenced the results the most. By this choice, the authors narrowed down the scope influencing limitations and choice of theories. Were one to choose another perspective, like *business strategy* or *technical maintenance*, this would probably have resulted in different solutions to the problems identified in chapter three. The other potential perspectives would not necessarily create less effective solutions but would probably not offer a holistic take on the core issue. These choices would “cure the symptoms but not the illness”.

- **Internal validity – Is there a good foundation to the conclusions? Has what was intended to be studied really been studied?**

In chapter five, proposed solutions are analyzed and linked to the problems identified in chapter three. The analysis is presented in table 6 and concludes that most of the major problems should be solved by an implementation of the solutions presented in the two themes.

The issue of the thesis has been developed throughout the process as in new insights provide a better understanding. Concerning the added terminology, there is always a risk that the authors missed some definitions in the explorative literature phase. If this is the case, then it is possible that the added terminology is unnecessary. However, this risk is considered low as significant effort went into the literature overview.

- **External validity –to what degree can the conclusions be generalized?**

The new definitions and suggested processes are believed, by the authors, to be of interest to service providers in particular but also to organizations considering outsourcing. The focus is on organizations engaged in intra-organizational outsourcing but the findings should be useful for companies engaged in other outsourcing forms as well. Academically, researchers within the fields of organization and business could find definitions and related findings in building successful partnerships and working with knowledge transfer useful.

- **The overall validity of the study**

To summarize the above points, the authors believe the validity of this thesis is strong. By taking measures early on to increase the reliability, as stated in chapter one, the most significant influence on the thesis is concluded to be the choice of theoretical perspective. Any choice of perspective is an inevitable influence source but the authors believe the organizational perspective provides the most valuable solutions. The internal validity is ensured by the structure of the thesis, analyzing solutions in the context of identified problems for example. Finally the external validity is secured by appropriate generalizations and a thorough literature review to make sure new terminology is justified.

6.8 Summary and validation of the general reflections and theoretical contribution

In this chapter the author's contribution to theory has been presented. A new definition, *intra-organizational outsourcing*, is introduced together with its sub-terms *virtual outsourcing* and *dynamic outsourcing*. The requirements for creating a successful partnership in an outsourcing agreement are investigated and supporting processes are proposed. Finally the importance of nurturing competencies within the service provider organization by initiating lateral and vertical knowledge sharing is stressed.

7 Executive summary

This is a brief summary of the thesis. The background, issue and findings are presented. New definitions and key insights in the general as well as the specific case are discussed.

This master thesis was originally based on a specific assignment given to the authors from ABB Full Service, a unit specializing in providing maintenance outsourcing:

“How can ABB Full Service expand its offering of providing fundamental maintenance by seamlessly incorporating the business concept with competencies and solutions from other ABB divisions?”

The academic issue was developed throughout the thesis, resulting in the following formulation:

“From an organizational perspective; how can service providers bring continuous added value to intra-organizational outsourcing partnerships?”

Many of the key findings of this thesis are reflected in the issue. The term *intra-organizational outsourcing* is a proposed addition to the terminology in the academic discourse on outsourcing. The definition of the term is:

- Where an organization outsources a business process interlinked with the physical operations, requiring the service provider to take over a preexisting unit and its employees.

This is an accurate description of the form of outsourcing that ABB Full Service is engaged in. The authors note that this kind of outsourcing relationship is not sufficiently described in the current theoretical landscape, justifying the addition and definition of a new term.

A subset of intra-organizational outsourcing is also added; *dynamic outsourcing*. This term that is central to this thesis. It describes what ABB Full Service should aim for in their client partnerships. *Dynamic outsourcing* is defined as:

- Where the service provider provides a continuous stream of extended services by incorporating resources and solutions from a broad array of expertise areas through the intra-organizational outsourcing partnership, ensuring a permanent value differential thus eliminating the risk of back-sourcing.

Insights and propositions in the thesis concern how to achieve dynamic outsourcing. Solutions are provided through two main themes; *competence development* and *nurturing the client relationship*.

Competence development for achieving dynamic outsourcing

Service providers that work with intra-organizational outsourcing must be prepared to handle the cultural integration of the transferred personnel into the service

organization. Properly handled, fast benefits can be achieved but it is also important to realize that the complete integrating process takes both time and effort.

For an organization to achieve dynamic outsourcing, focus on the management of the organization's knowledge and competencies is imperative. Expertise and experience needs to be developed and transferred between personnel and units within the organization, and knowledge must also be injected from external sources. By working with these aspects of the organization, service providers can improve the quality and cost effectiveness of their offering and maintain a necessary value differential to show clients the benefits of remaining in the partnership.

A key insight is that educational initiatives aimed at relationship building, communication, trust, commitment, and shared benefits is more important than technical competence development in achieving a higher level of service quality. All hierarchical levels of the organization must be involved in these processes, laterally as well as vertically.

Vertical learning initiatives are knowledge sharing between different hierarchical levels. These initiatives are mainly targeted at down-streams benefits, where more experienced and competent staff shares insights with personnel on a lower hierarchical level. However it is noteworthy that important information is relayed upwards in the hierarchy as well through such initiatives; this can be information such as improvement suggestions and identification of potential problem areas.

Lateral learning initiatives should be formed between different client sites, exchanging knowledge between staff on all levels, from site management, specialists and down to operations personnel. These initiatives could be in various forms, exchanging personnel between sites during longer time periods, creating inter-site groups discussing best practices and developing informal communication channels to motivate experience sharing. Other lateral learning initiatives can be formed on the inter-divisional level, where experts from other divisions than that of the service provider offer new perspectives on the outsourcing partnership and the client sites.

The aim of increasing focus on knowledge and experience sharing within and surrounding the service provider is to find synergies in having more than one service site and in being part of a greater multidivisional organization. By realizing such synergies the service provider can increase the level of its offering and inject added value to the client organization. It is essentially about finding a source of competitive advantage in relation to the client organization as well as in relation to competing service providers.

Nurturing the client relationship for achieving dynamic outsourcing

An important realization is that clients often want to see more benefits from working with a service provider that is part of a larger multidivisional corporation. This coincides with the wish from service providers to increase revenue from outsourcing partnerships and provide opportunities for sister divisions.

By suggesting and initiating projects that clearly aims at increasing productivity and bottom line value for the client the service provider can show its intentions are for the good of the client. This is an important first step in creating a partnership based on mutual trust.

To conduct active sales work in such a relationship without damaging hard-earned trust is difficult. This is why it is so important to carefully plan the sales initiatives and to follow a structured approach with long-term goals. It is important to be able to offer the client contracts that are long term to ensure stability yet flexible to evolve alongside the client.

To create a true partnership, all activities of the service provider should be in the interest of the client, even internal activities must be directed at creating mutual value. To develop such an attitude of including the client's perspective in all processes takes time and effort, but is necessary to achieve dynamic outsourcing.

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