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The interaction of Global and Local Best Practices within Manufacturing

Master's thesis in Quality and Operations Management

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CHALMERS UNIVERSITY OF TECHNOLOGY
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Abstract

The purpose of this thesis has been to *investigate the interaction of Local Best Practices and Global Best Practices within the manufacturing function in multinational corporations.*

The analysis of the conducted interviews with seven companies shows that there are some differences in how Local Best Practices are handled compared to the handling of Global Best Practices. A model showing the early stages of the Best Practice transfer for both Local and Global Best Practices was developed.

There is a missing link between Local and Global Best Practices. Various Local Best Practices are not being used as contribution to a Global Best Practice to a large extent as they could have been. By the use of internal benchmarking, Local Best Practices and knowledge gained locally could be transferred. Different detail levels and perspectives upon the operations can be mentioned as reasons for this missing link. Global Best Practices are often connected to IT or Lean initiatives and provides a framework for how to work within the company. Local Best Practices on the other hand, are context dependent and are often concerned with operational activities at the local site. Local Best Practices can be transferred between sites as those Practices work as parts of a palette, where each site can pick the Practices they think fit their context the best and from which they will benefit from the most.

The transfer of Global Best Practices to the individual sites are facilitated by the connection to the IT systems, which when they are harmonized, forces a specific way of working. Lean initiatives and overall processes provide a framework for how to work globally. Those frameworks often provide a basis from which the individual sites could develop Local Best Practices.

So, Local Best Practices are transferred between sites, Global Best Practices are being used as frameworks globally, but the contribution of Local Best Practices to Global Best Practices is to a large extent missing.

Keywords: *Best Practice, Global Best Practice, Local Best Practice, Benchmarking, Interaction, Manufacturing strategy, Global Manufacturing Network, Knowledge-based view*

Sammanfattning

Syftet med denna uppsats har varit att undersöka hur interaktionen mellan Lokala Best Practices och Globala Best Practices fungerar inom tillverkningen i multinationella företag.

Analysen av de genomförda intervjuerna med respondenter från sju olika företag, visar att det finns vissa skillnader mellan hur Lokala Best Practices hanteras gentemot hanteringen av Globala Best Practices. En modell som visar hur de tidiga faserna i Best Practice överföring har tagits fram. Denna modell fungerar för att beskriva såväl överföring av Lokala Best Practices som Globala Best Practices mellan och inom enheter.

Studien visar att det i stor utsträckning saknas en koppling mellan Lokala och Globala Best Practices. Olika Lokala Best Practices används sällan som bidrag vid utvecklandet av en Global Best Practice. Lokala Best Practices och intern kunskap skulle kunna överföras i högre utsträckning i företagen genom att använda sig mer av intern benchmarking.

Olika detaljeringsnivåer och perspektiv är några av orsakerna till att denna koppling mellan Lokal och Global nivå saknas. Globala Best Practices är inte sällan kopplade till IT eller till olika Lean-initiativ, där Globala Best Practices fungerar som ramverk för hur man skall jobba i hela verksamheten. Lokala Best Practices däremot, är kontext-beroende och berör ofta hur man skall arbeta operativt på de lokala fabrikerna. Dessa Lokala Best Practices överförs mellan fabriker genom att de används som en palett, där varje enskild fabrik kan välja de Practices de tycker passar deras förutsättningar samt som de tror kan förbättra deras specifika verksamhet. På så sätt kan Lokala Best Practices anpassas till kontexten på varje enskild fabrik, samtidigt som kunskap överförs.

Överföring av Globala Best Practices till alla fabriker underlättas ibland av IT-systemen som används då dessa, när de är harmoniserade, i mångt och mycket visar på ett tillvägagångssätt och arbetsgång. Lean initiativ och övergripande processer ger ett ramverk för hur företaget skall arbeta globalt. Dessa ramverk ger en bas ifrån vilken de individuella fabrikerna sedan kan utarbeta sina Lokala Best Practices.

Sammanfattningsvis så överförs Lokala Best Practices mellan fabriker medan Globala Best Practices används ramverk. Bidraget från olika Lokala Best Practices vid utformning av Globala Best Practices däremot, är begränsat.

Nyckelord: *Best Practice, Global Best Practice, Lokal Best Practice, Benchmarking, Interaktion, Tillverkningsstrategi, Globala Tillverkningsnätverk, Kunskaps-baserat perspektiv*

Preface and Acknowledgements

This thesis has been carried out as a part of the Master's programme of Quality and Operations Management at Chalmers University of Technology. The research has been carried out during the autumn 2014. I hope you will find the research area and the findings interesting. Before letting you read the introduction chapter, I would like to express my gratitude to all of you who have contributed in one way or another to this research.
I am very grateful to all respondents in this research, who represented following companies: ABB, Ericsson, Husqvarna, SCA, Volvo Car Corporation, Volvo Trucks and one more company that wanted to remain anonymous. Thank you so much for taking your time, for the valuable insights and for sharing your knowledge and experiences. You made this research possible.

I would also like to thank Triathlon Consulting Group and the great consultants there who helped me with input, new perspectives and good advises. Thank you for lovely lunch breaks needed during long days of writing and for cheering me up when I was stuck. Also, thank you for letting me use the lowest table available, for the coffee and for being so kind to me. I have felt very welcomed and I have learnt so much. Thank you.

And to Simon, thank you for your support at home, for cooking all the food, for driving me to work and home again. Thank you for letting me whine when I needed to and for pushing me in the right direction.

To all of you that have to read through my text, thank you. You know who you are. I owe you.

Last, but not least, I want to say thank you to my supervisor at Chalmers University of Technology, Nina Edh Mirzaei. I do not know where to start. Thank you for being so supportive, for reading through my extensive texts over and over again, for sharing your knowledge, for guidance and for support.

I hope you will all enjoy the reading!

Siri Jagstedt

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1 Introduction

This chapter aims to give a basic introduction of the research. It results in a purpose of this research, with associated research questions. The introduction chapter also presents the scope of the study and a disposition of the report.

Manufacturing can be a powerful resource within a company, used to achieve competitive advantage on the market (Skinner, 1969). Hence, it is important to link the manufacturing to the overall corporate strategy (Dangayach & Deshmukh, 2001; Skinner, 1969). Manufacturing strategy includes all the steps and decisions regarding all issues of both tangible and intangible resources within the manufacturing function and should be linked to the corporate objectives (Slack, Chambers, & Johnston, 2010; Miltenburg, 2009; Anderson, Cleveland, & Schroeder, 1989). The Manufacturing strategy points out the overall direction for the manufacturing in order to contribute to the objectives of the firm as manufacturing provides products that are vital for the survival of the company in the long run (Slack, Chambers, & Johnston, 2010).

Manufacturing strategy can be seen from two perspectives; a market-based view or a resource-based view (Brown & Blackmon, 2005). The market-based view stresses the importance of gaining competitive advantage by using external opportunities and aligning the company's resources to them (Brown & Blackmon, 2005). The resource-based view is arguing that what makes a company strong is its resources (Slack, Chambers, & Johnston, 2010). Manufacturing strategy has evolved from a market-based view to a resource-based view, meaning it is getting more important for companies to focus on the operational resources in the manufacturing strategy, including knowledge and practices, as this could be a competitive advantage (Gagnon, 1999; Dangayach & Deshmukh, 2001). This thesis will be based upon the latter view upon manufacturing strategy, resulting in a perspective focusing on the resources within the company. Gagnon (1999) argues that learning, including sharing of knowledge and culture, could be an integrated part of operations to be a source of competitive advantage. Manufacturing is nowadays spread over the world with facilities in different countries over distant locations (Dangayach & Deshmukh, 2001), which influences the manufacturing strategy and the manufacturing processes.

Companies today face two competitive pressures; globalization and pressure for local responsiveness (Miltenburg, 2009). When pressure is high for globalization, this means that the pressure is high for the company to operate and manufacture products on a worldwide market. A pressure for local responsiveness means that the company has to adapt the practices being used to fit the needs and requirements of the varying customers around the world (Miltenburg, 2009). Those two pressures influence the international manufacturing strategy for the company (Miltenburg, 2009), and it can also influence to what extent companies choose to handle the interaction between Local and Global Best Practices. A manufacturing strategy can help the company to position on different

markets (Acur, Gertsen, Sun, & Frick, 2003). By being present at local level in different countries, there are opportunities to gain competence and knowledge from as well the market as the resources used. By treating the foreign plants as strategic important as the plant nearby the headquarters, it is possible to gain advantage compared to competitors (Ferdows, 1997). The knowledge gained in local plants can be of use worldwide as well. Knowledge and successful practices can be transferred to other sites and be a Global Best Practice as well since learning from Best Practices can be applied in other settings as well (O'Dell & Grayson, 1998). Because of that, there is an important interaction between local practices and Global Best Practices. Decisions being made on operational level influence the strategic decisions and the other way around (Anderson, Cleveland, & Schroeder, 1989).

Manufacturing has a great potential as a contribution to the overall competitive ability and it is important to have a manufacturing strategy closely linked to the corporate strategy (Skinner, 1969). Knowledge about a practice and the practice itself are closely related and are extremely hard to separate (Wellstein & Kieser, 2011). Within a company, there exists a tacit knowledge base as a part of the internal resources, which can have an impact on formulation of the manufacturing strategy (Dangayach & Deshmukh, 2001). Large multinational companies, with facilities in different locations, often work with issues of how to transfer this knowledge, including practices of how to do things among the different manufacturing facilities (O'Dell & Grayson, 1998). Best Practices are an important part of the knowledge basis within a company and when taking a resource-based view upon the firm, Best Practices can also be an important competitive advantage to survive in the long run (Lu, Mao, & Wang, 2010).

In the globalized society of today, multinational corporations[1] mainly have two strategic options when deciding how to work with their manufacturing processes – to decentralize the decision and let the local factories develop their own processes, or to centralize the decisions in order to have universal and standardized processes (Garnier, 1982; Quester & Conduit, 1996).

The objective of having standardized processes is to achieve a more efficient and cohesive organization (Slack & Lewis, 2011). Meanwhile, standardization of the processes will allow for a greater level of flexibility, which will facilitate for personnel and management to easily move to a new production site (Slack & Lewis, 2011). In addition, logically it can be argued that standardization can facilitate the use of the same language between source and recipient, which is important for the efficiency of knowledge sharing (Grant, 1996).

When developing such standardized global processes, companies often work with what is sometimes called *Best Practices* (Camp, 1992), a concept that can be defined as

[1] *Multinational corporation: corporation that is registered and operate in at least one other country that its home country* (Collin, 2006)

processes, methods or techniques which have been accepted or prescribed as being the most effective and efficient ways of doing something or achieving a particular aim (Collin, 2006). One way of generating such Best Practices is to work with *benchmarking* (Camp, 1992), the process where a company compares its processes and performance metrics with the Best Practices within itself, within their industry or with companies in another industry (Collin, 2006). Benchmarking is widely used and can be applied in various industries and departments (Jarrar & Zairi, 2000a). In this thesis, focus will be on parts of the *internal* benchmarking - benchmarking within the company (Bergman & Klefsjö, 2010). This since internal benchmarking is a strong tool when trying to improve the performance of a company (O'Dell & Grayson, 1998). Benchmarking and the application of Best Practice is a powerful way to improve processes and performance for the corporation as well as the performance of the individual units (Jarrar & Zairi, 2000b).

Practice is a process that is being used in an established and routinized way within the organization. It can refer to different techniques as well as teamwork or involvement from different employees within the organization (Voss, Åhlström, & Blackmon, 1997). At an overall level, large corporations are better than medium-sized and small companies in implementing Best Practices (Ulusoy & İkiz, 2001). The performance of a company or a unit refers to the measurable aspects of the outcomes. It originates the practices or the processes of the company. The business performance, such as customer satisfaction, is being affected by the operational performance of each department (Voss, Åhlström, & Blackmon, 1997).

If a company can transfer Best Practices internally, it can be a competitive advantage on the market (Lu, Mao, & Wang, 2010). Internal knowledge is hard to imitate for competitors and the sharing of knowledge among different facilities within a company can result in important opportunities for a company in order to build a sustainable advantage (Szulanski, 1996). The ability to transfer internal knowledge and Best Practices within manufacturing can even be essential for the survival of the company in the long run (Lu, Mao, & Wang, 2010). The process of identifying and transfer those practices internally is, however, harder than most people think (O'Dell & Grayson, 1998).

Knowledge can be transferred both vertically and horizontally within a company (Lu, Mao, & Wang, 2010). Transfer of Best Practice within a firm typically involves horizontal knowledge sharing and transferring of practices already being used somewhere (Szulanski, 1995), for example between manufacturing units. Applying a knowledge-based perspective on the organization and a resource-based view upon manufacturing strategy, the knowledge that can be gained inside of an organization is considered a competitive resource (Lu, Mao, & Wang, 2010). Internal benchmarking is a way to transfer and use this resource to its fullest potential within the firm (Szulanski, 1996).

When multinational companies have similar factories at various locations, there is a risk of sub optimization between sites. In order to avoid this, the adoption of a global uniform practice is a good way to improve the overall performance in a company. Thus, commonly used approaches to adapt a practice, such as only written information, do not provide

enough information or motivation (O'Dell & Grayson, 1998; Slack & Lewis, 2011). Therefore, it is important to involve both explicit and tacit knowledge in this (O'Dell & Grayson, 1998). This can be achieved by adopting a Best Practice approach (Camp, 1995).

Plenty of literature focus on describing effects of applying Best Practices as well as how to spread the Best Practice approach in a company. Several success factors and barriers have been identified of how to facilitate Best Practice diffusion (Szulanski, 1996; O'Dell & Grayson, 1998). Yet, quite little is written about how local practices are identified and developed within a company. Companies already work with these issues, but do not always achieve the intended and desired result (O'Dell & Grayson, 1998). A study intended to identify how those processes actually work in companies is therefore of both practical as well as academic relevance because of the conceptual and general approach in the literature on the research field. The academic literature has mainly focused on how to transfer Best Practices, rather than on how to actually identify potential candidates for a Best Practice within a company (Wellstein & Kieser, 2011), even though a lot of the "stickiness to a successful transfer" (Szulanski, 1996) occur in the initiation phases of the Best Practice transfer (Szulanski, 1996). The benchmarking process has changed continually from a continuous process of the evaluation of different products to an approach of benchmarking as a continuous process of identifying, learning as well as implementing Best Practices in order to stay competitive (Anand & Kodali, 2008). Benchmarking is closely related to a Best Practice approach and this process, because of the evolvement of the research of the field, more attention is needed, focusing on the identification and the evaluation of potential practices in a benchmarking process in order to achieve Best Practices.

1.1 Research problem

In multinational corporations, the needs for local responsiveness as well as globalization result in that companies have manufacturing facilities in different markets around the world (Dangayach & Deshmukh, 2001; Miltenburg, 2009). When taking strategic decisions about how to run the manufacturing in the distant factories, companies have to consider both the options of having standardized and global processes as well as letting the factories develop their own practices and knowledge (Quester & Conduit, 1996; Garnier, 1982). Decisions being made on operational level influence the strategic decisions and the other way around (Anderson, Cleveland, & Schroeder, 1989). Practices are an important part of the knowledge basis in the company (Lu, Mao, & Wang, 2010), and the process of identifying and transfer practices within a company, both within each plant and between the different plants is difficult (O'Dell & Grayson, 1998). As internal knowledge is hard to imitate, the possibility to share practices within the company can be a competitive advantage (Szulanski, 1996).

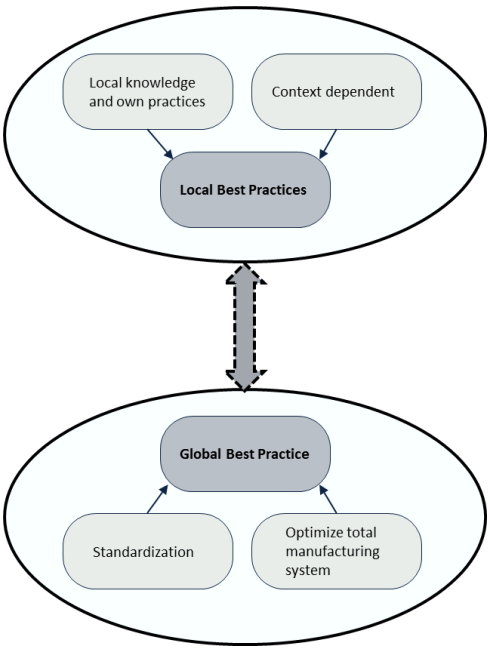

Figure 1 - Interaction of Global and Local Best Practices

As the focus for multinational companies is to optimize the total manufacturing system instead of just each individual unit (Friedli, Mundt, & Thomas, 2014), standardization and Global Best Practices can be an important part of the manufacturing strategy. However, practices and knowledge are dependent upon context (Jarrar & Zairi, 2000a; O'Dell & Grayson, 1998), meaning companies also have to consider flexibility for each individual site. The companies have to balance between this standardization and flexibility for each specific site and its context. Hence, the problem is how to handle this issue of local practices compared to the Global Best Practices.

This is also the problem within the academic field, as even though companies are working with the issue of identify and developing Best Practices at local and global level (O'Dell & Grayson, 1998), little is yet written about the subject. The academic field has mainly focused upon the transfer of Best Practices, rather than how to identify candidates for a potential Best Practice (Wellstein & Kieser, 2011) and the interaction between Global and Local Best Practices.

1.2 Purpose and Research Questions

The purpose of the study is to

Investigate the interaction of Local Best Practices and Global Best Practices within the manufacturing function in multinational corporations.

This interaction regards both interaction between Local and Global Best Practices as well as between different Local Best Practices at different sites, focusing on the early stages of the transfer, including searching and evaluation. In order to be able to understand those different kinds of interaction, Global Best Practices and Local Best Practices must be individually understood regarding the development and transfer of those. As complementary to the purpose, there are therefore two research questions about Local and Global Best Practices.

Research question 1:

> *How are Local Best Practices in manufacturing developed and transferred within multinational corporations?*

Research question 2:

> *How are Global Best Practices in manufacturing developed and transferred within multinational corporations?*

Hence, the research will be based upon those three areas; Interaction of Global and Local Best Practices, Local Best Practice development and transfer, Global Best Practice development and transfer.

When evaluating Best Practices, the basis should always be the improvement of the overall company rather than just individual sites in order to avoid sub-optimization within the corporation (Davies & Kochhar, 2002). The interaction of Local Best Practice and Global Best Practice is very important in order to get an understanding of how knowledge can be shared within a company in order to achieve the highest possible performance for the overall company. The contribution of this study to the field of Best Practice is practical examples of the interaction Local Best Practices and the Global Best Practice within a firm. The contribution is also a broader understanding of the process of transferring Best Practices within manufacturing for companies with plants in different countries, producing the same kind of products.

1.3 Scope

The thesis will only focus on the early stages of Best Practice transfer; in this thesis defined as searching and evaluation, which are related to both Szulanski´s (1996) initiation and Jarrar & Zairi´s (2000a; b) searching and evaluating. The validation stage will be fairly covered, but is not the main focus of this research. The later stages of the transfer will not be covered in this research, as those later stages have been covered in

several studies. Those stages appear after a decision about what is considered a Best Practice is taken.

Table 1 - Included transfer stages of the Scope

Stage definition in this thesis	**Stages Szulanski (1996)**	**Stages Jarrar & Zairi (2000a; b)**
Searching Evaluation (Validation)	Initiation	Searching Evaluating (Validating)
~~Implementation~~	~~Implementation~~	~~Implementing / Transfer~~
~~Review~~	~~Ramp-up~~	~~Review~~
~~Routinizing~~	~~Integration~~	~~Routinizing~~

The study is limited to large companies (>10 000 employees) with a global presence. The study will include companies that are producing physical goods, in other words, they should be working with manufacturing, which in this thesis means "production of machine-made products for sale" (Collin, 2006, p. 246). The thesis will take a resource-based view upon manufacturing strategy, focusing on internal, horizontal benchmarking in order to improve the overall performance for all manufacturing sites within the corporation. This will be done by looking at the internal resources within a company with focus on knowledge. The resource-based view will be extended in this thesis to focus on a knowledge-based perspective. The study will be delimited to the manufacturing processes and the interaction between the Local Best Practices and Global Best Practice.

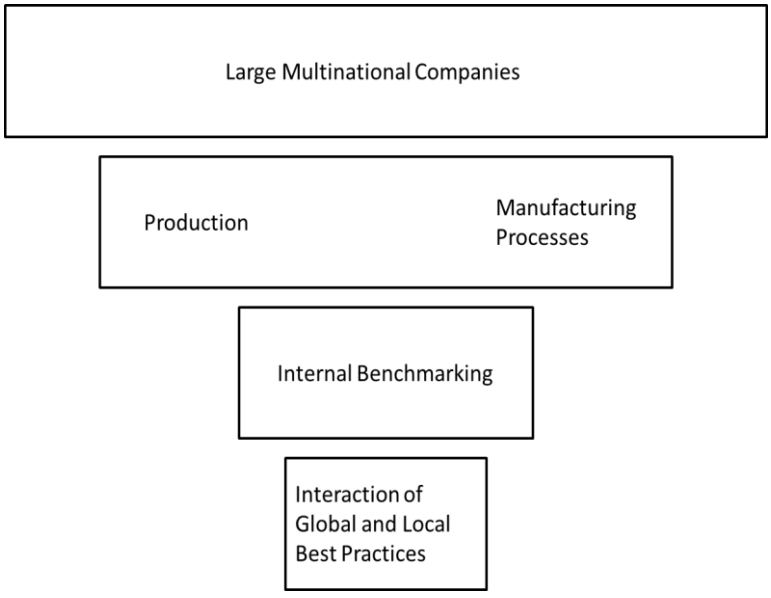

Figure 2 - Scope and Boundaries

The definition of Best Practice in this study will be influenced by the fact that the study has its basis in internal benchmarking. This definition of Best Practice will to a large extent influence the focus of the research.

The given delimitations and boundaries will be connected to the selection criteria of the company that will participate in this study. The criteria and the connection to the boundaries will be described further in chapter 3.2. Any quantitative evaluation of the companies Key Performance Indicators (KPIs) are not going to be made as it is not necessary to answer the research questions.

1.4 Disposition

This disposition shows the outline of the report in order to give an overview of the content within the different chapters.

Chapter 1: Introduction

This chapter aims to give a basic introduction of the research. It results in a purpose of this research, with associated research questions. The introduction chapter also presents the scope of the study and a disposition of the report.

Chapter 2: Theoretical framework

Theory needed to understand the topic as well as for conducting the research is presented, starting with basic theory of production, global manufacturing networks and manufacturing strategy. The theoretical chapter goes deeper into theories about Best Practices, the process of Best Practice transfer and facilitating factors as well as barriers. Also benchmarking and the linkage between Best Practice and benchmarking are described. The chapter ends in an analytical framework used in the report.

Chapter 3: Methodology

The methodology chapter aims to give the reader an understanding of the conducted research, how research design and methodology were chosen, how data were collected and how the method choices influenced the research in different ways. The chapter also discusses the quality of the research as well as ethical considerations.

Chapter 4: Empirical findings

In this chapter, the empirical findings will be presented company by company. The findings for each anonymized company will be structured according to the early stages of the transfer process described in the theoretical chapter; the concept of Best Practice, searching and evaluation of potential Best Practices.

Chapter 5: Analysis

The analysis will be structured according to the first steps of the Best Practice transfer described in the theory (see 2.11.1); including the concept of Best Practice, searching and evaluation. In the end of each stage, the impact of local and global perspective upon the Best Practice transfer will be analyzed.

A new model for the early stages of Best Practice transfer will thereafter be presented and further analyzed, with focus on the differences and interaction between Local and Global Best Practice transfer.

Chapter 6: Discussion

In the Discussion, the theory is compared to the analysis and findings from the research. The results of the analysis are discussed from a theoretical as well as a practical perspective with basis in the developed model of the early stages of the Best Practice transfer. In the end, the research questions are answered.

Chapter 7: Conclusions

This chapter summarizes the research and its contribution. Managerial implications of the research are described as well as proposals for future research.

2 Theoretical framework

Theory needed to understand the topic as well as for conducting the research is presented, starting with basic theory of production, global manufacturing networks and manufacturing strategy. The theoretical chapter goes deeper into theories about Best Practices, the process of Best Practice transfer and facilitating factors as well as barriers. Also benchmarking and the linkage between Best Practice and benchmarking are described. The chapter ends in an analytical framework used in the report.

2.1 Production and manufacturing

Production can have various meanings dependent upon the area of interest. In terms of industry production, the term can be defined as "the work of making or manufacturing of goods for sale" (Collin, 2006, p. 317) and is closely related to both manufacturing and operations. A production department can be defined as "the section of a company which deals with the making of the company´s products" (Collin, 2006, p. 317) and production can hence be seen as an operation that is making use of resources.

Production will in this study be used as a quite wide term with the meaning of converting resources into goods or services. Production refers not only to the process of processing raw material, but rather different kinds of resources such as IT, labor and capital. The production can both be to external and internal customers.

Manufacturing is in the heart of production, where parts are processed into final products. Manufacturing can be defined as the "production of machine-made products for sale" (Collin, 2006, p. 246). Manufacturing processes can have different designs and be of different types depending on what is being manufactured. Some examples are project process, jobbing process, batch process, mass process and continuous process, shown in figure 3 (Slack, Chambers, & Johnston, 2010). The chosen process type is to a large extent dependent on what the volume and variety of the produced products are.

Manufacturing will in this study be defined as the total process of transforming material into a complete product by the use of labor, machinery or processing such as chemical or biological tools. Manufacturing processes includes the activities needed to transform inputs such as raw material into outputs to a customer.

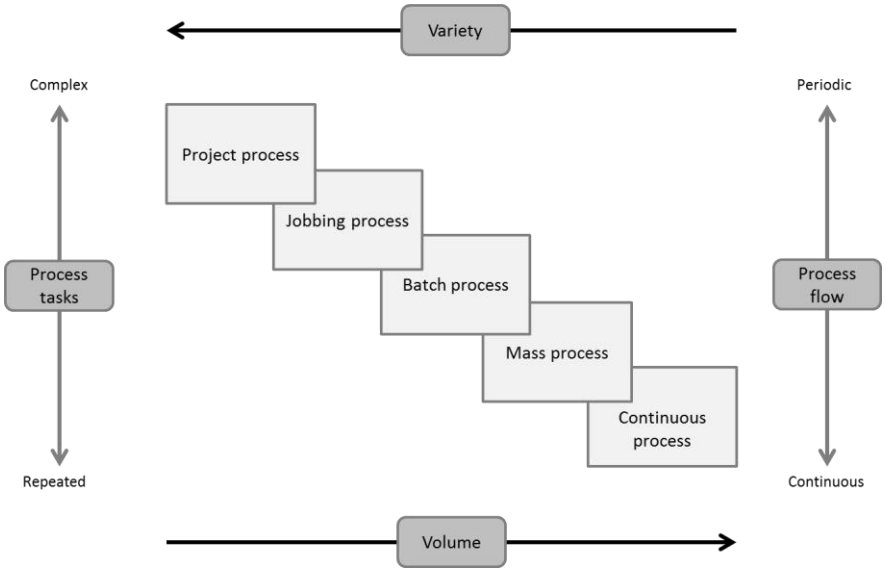

Figure 3 - Manufacturing process types (Slack, Chambers, & Johnston, 2010)

2.2 Global manufacturing network

The manufacturing has been going through various stages and changes since the industrialization years. In the beginning, each production site was mainly supplying the local market. As the technology and the markets developed, relations between different sites and companies occurred across borders and continents (Friedli, Mundt, & Thomas, 2014). By establishing manufacturing sites across the world, companies gained many advantages, including lower costs for taxes and labor. This also facilitates that the companies can be present nearby the local customers (Ferdows, 1997). Multinational corporations have played a large role in the development of globalized manufacturing and the capacity of those large corporations manufacturing sites is rapidly increasing (Friedli, Mundt, & Thomas, 2014). The increased globalization has led to increased competition, also regarding manufacturing (Dangayach & Deshmukh, 2001). The global manufacturing systems are under a lot of pressure and in order to stay competitive, the different plants have been subjects for many performance improvement initiatives. The focus for the companies has shifted to involve the entire manufacturing system within the multinational corporations instead of just each individual site (Friedli, Mundt, & Thomas, 2014).

Manufacturing strategy can be seen from many perspectives, including industry, company, unit and factory (Miltenburg, 2009). When looking at a global manufacturing network within a company, the perspective and focus will be from a company´s perspective in terms of optimize the total manufacturing system within the company instead of sub-optimization of each unit (Miltenburg, 2009; Friedli, Mundt, & Thomas, 2014). Different countries have different reasons to have manufacturing facilities at different locations around the world. Some reasons are tangible and possible to measure, such as reduction of costs, taxes and logistic lead times, but also intangible reasons such as learning from customers, competitors and attract global talents (Ferdows, 1997). By

using those intangible benefits in the network, the overall performance can be improved and manufacturing can be an important part of the corporate strategy and the global manufacturing network as a competitive advantage (Ferdows, 1997; Miltenburg, 2009).

Each manufacturing facility can provide six strategic outputs; cost, quality, delivery, performance, innovativeness and flexibility. A manufacturing network, on the other hand, can provide four more; accessibility, learning, mobility and thriftiness (Miltenburg, 2009). Positive effects and benefits from each manufacturing unit can be separated from the benefits gained from the total network (Miltenburg, 2009; Ferdows, 1997). As the companies´ manufacturing units are spread around the world, IT is often used to align and link those together (Dangayach & Deshmukh, 2001). To gain the most out of this global network, and to get the advantages from facilities in different countries, foreign factories must be used as an advantage and the perspective should be at the total manufacturing network and the overall performance (Miltenburg, 2009; Ferdows, 1997). If only one manufacturing unit were used and seen as competitive, the company would miss out on great opportunities for knowledge and expertise that occur at different sites around the world (Ferdows, 1997).

The big challenge for manufacturing companies around the world and the development of manufacturing strategy is that the strategy of manufacturing cannot be seen as independent from various locations but must be seen from a global and holistic perspective (Friedli, Mundt, & Thomas, 2014). In today's dynamic and competitive environment, an optimization focusing on the performance of the total manufacturing network must be prioritized in order to stay competitive in the long run (Friedli, Mundt, & Thomas, 2014; Miltenburg, 2009).

2.2.1 Harmonization

Harmonization is the process of moving away from the usage of many different practices as this result in diversity of incomparable practices within the company. This includes moving from many to fewer methods and practices by grouping and convincing the corporation to use only some available practices (Tay & Parker, 1990). The expression of harmonization is closely related to the word standardization in terms of standardization as an expression of moving to uniformity. Standardization however, can involve also other types of movement to uniformity than harmonization. Standardization can also be defined to involve to which degree different processes allows varying over time rather than between different sites (Tay & Parker, 1990; Slack, Chambers, & Johnston, 2010). Harmonization is being used in order to be able to compare things between different sites, countries and department (Tay & Parker, 1990).

2.2.2 Centralization and decentralization

Degree of centralization within a firm can be defined as the authority regarding decision-making between the headquarters and each individual facility (Garnier, 1982). Centralization and decentralization within multinational corporations have a lot to do with

to what extent the facilities are autonomous, in general; the less autonomous units, the higher degree of centralization (Quester & Conduit, 1996; Garnier, 1982)

The degree of centralization in an organization is an important structural issue of multinational companies. Centralization means that the authority of decision-making to a larger extent is at headquarters rather than at facilities around the world (Quester & Conduit, 1996). In large multinational corporations, the decision making is split in different ways between the headquarters and each individual facility. However, the structure and how autonomous departments are, provide instruments for organizing resources to some degree of centralization rather than decide the level of it alone (Garnier, 1982).

The factors influencing how this division are made are quite complex, especially within firms operating at very different places, in different cultures around the world (Garnier, 1982). Among factors that are common for companies applying centralized decision-making there are factors associated with the facilities of the company. First, the company often has manufacturing facilities in many different countries world-wide. Second, those facilities produces standardized product. Third, those facilities serve a larger market than the one they are established in. Fourth, the activities of the units within the organization are integrated to each other to a large extent. This could for example be regarding the flow of the products (Garnier, 1982).

If each manufacturing facility has authority to make decisions by themselves, the organization is probably quite decentralized regarding the decision-making. Of course, this can vary and the centralization-decentralization division is not clearly black or white (Quester & Conduit, 1996; Gates & Egelhoff, 1986). Hence, in general, facilities tend to be quite autonomous if it has as a mainly assignment to serve the local market and if it has not much interface and interchange with other facilities and departments within the corporation (Garnier, 1982). The degree of centralization in relation with the size of the total corporation has been disputed as some find positive and some find negative relationships (Garnier, 1982; Gates & Egelhoff, 1986).

2.3 Manufacturing strategy

The definition of manufacturing strategy is not consistent for all researchers as many have their own definition influenced by different aspects and the terminology can be confusing as it sometimes points in different directions (Anderson, Cleveland, & Schroeder, 1989). Slack, Chambers, & Johnston (2010) define the concept of Operations strategy as "the overall direction and contribution of the operation´s function with the business; the way in which market requirements and operations resource capabilities are reconciled within the operation" (Slack, Chambers & Johnston, 2010, p. 664). Where operations in general can have quite a broad meaning; all functions enabling activities necessary for the company to move forward and meet the customers demand. Operations produce the goods or services that are necessary for the company´s survival (Slack, Chambers, & Johnston, 2010).

Manufacturing strategy is a process of steps, starting with the formulation of the strategy and end in manufacturing performance that influence the overall business performance (Miltenburg, 2009). Manufacturing strategy is closely linked to Operations strategy and is sometimes used as the same term (See Skinner, 1969; Anderson, Cleveland, & Schroeder, 1989; Dangayach & Deshmukh, 2001). Manufacturing however, has a narrower meaning in this study than the term Operations. In this thesis, the term manufacturing strategy will be used as synonymous to the concept of Operations strategy.

The pioneer within the research about manufacturing strategy is Skinner (1969), who argued that the manufacturing function within a company should be used as a competitive advantage in the organization. He stresses the importance of linking manufacturing strategy with corporate strategy (Skinner, 1969). The manufacturing strategy must be aligned with the corporate strategy and so must the operations within a company be (Anderson, Cleveland, & Schroeder, 1989). This connection and alignment have been achieving a lot of attention within research (Dangayach & Deshmukh, 2001). A quite commonly criticism towards the operations managers in manufacturing is that their focus often is on the daily tasks and to improve the operational efficiency rather than focus on strategic thinking and the impact of their choices (Hill, 1986).

Hill (1986) argues that there are two parts of manufacturing strategy; the process part with the choices of different kinds of processes, and the infrastructural part, dealing with the choices of that are not of process-related nature. Those infrastructural decisions concern working structure, organizational issues and control for example (Hill, 1986). The process choice must be aligned with the manufacturing strategy, but when consideration has been taken to trade-offs for example, the focus shifts (Hill, 1986). Processes are hard to change as they often require high investments. Infrastructural decisions include for example the skills and the organization of the workforce, the quality aspects and organizational knowledge (Wheelwright, 1984; Hill, 1986). Hence, the infrastructure of the manufacturing is an essential part of the manufacturing strategy as it deals with decisions that are being made continuously in the organization (Hill, 1986).

Different aspects has been identified as parts of the infrastructural system; the resource allocation, the product and process development systems, the measurement and recognition system, human resource systems, organization and work planning and control systems (Hayes, Pisano, Upton, & Wheelwright, 2004; Wheelwright, 1984; Hill, 1986).

Areas of interest for decisions within manufacturing strategy are equipment, plants, planning of production and control of the same, labor, organization, management, processes, product design and infrastructure (Skinner, 1969; Dangayach & Deshmukh, 2001). Also the deviation of operations strategy as structural and infrastructural issues has been raised (Slack, Chambers, & Johnston 2010). Strategic choices often involves both structural and infrastructural decisions, those choices are commonly researched (Dangayach & Deshmukh, 2001).

Since the late 1970s, researchers within manufacturing strategy have discussed the possibilities and advantages with different perspectives on how to improve operations such as adapting Best Practices, maintaining internal fit and developing capabilities (Silveira & Sousa, 2010). Voss (1995) is arguing that there are three different paradigms of manufacturing strategy to improve operations since the research in manufacturing strategy has developed in different directions. The first is to align capabilities of the manufacturing department with the requirements of the market. Next approach is focusing on both external and internal consistency between the content of the manufacturing strategy and the product/business context. Last, there are approaches that are based upon adoption of Best Practice such as Lean Production and Total Quality Management (TQM) (Voss, 1995). There is a debate if Lean Production and other "Best Practices" defined as standardized quality mindsets such as Lean and TQM really can be considered as "Best Practices". Some authors are arguing that those practices are more a sketch of a possible way of working, rather than an actual "Best Practice" (Wellstein & Kieser, 2011). In this research, Lean and World-Class manufacturing practices will not be considered as Best Practices by themselves.

Fit is considered one of the core subjects for investigation of manufacturing strategy historically (Silveira & Sousa, 2010), including both external and internal fit. The distinction between external and internal fit was proposed by Miller (1992), with external fit (by Miller described as environmental fit) as the fit between the external environment and the organization´s structure. The internal fit was the fit between the organization´s structure and its processes in manufacturing (Miller, 1992). Miller (1992) further states that internal and external fit sometimes can be incompatible.

Hayes & Pisano (1994) were among the first to stress the idea of manufacturing strategy as a way to create and competing through the development of capabilities. Implementing TQM or Just-In-Time (JIT) programs to gain a short-term advantage is not enough in order to be sustainable competitive. Competences have to be created inside the company in order to be competitive on the market and the companies need strategies for doing this (Hayes & Pisano, 1994). Hayes & Pisano (1994) are arguing that the strategy should specify what competitive advantage the company should focus on and how this advantage with internal capabilities can be achieved.

When developing and executing a manufacturing strategy, many companies fail to link the corporate strategy with the manufacturing strategy and the other way around (Skinner, 1969). The relationship between those two strategies must be recognized and paid attention to in order to avoid manufacturing systems that are not competitive in the company (Dangayach & Deshmukh, 2001), both regarding structural and process decisions as well as infrastructural decisions (Hill, 1986; Slack, Chambers, & Johnston 2010).

Manufacturing strategy will in this study be defined as the total pattern of decisions, regarding both structural and infrastructural issues, that points out the direction and contribution of the manufacturing function within an organization that should be aligned

with the corporate objectives and strategy (inspired by Slack, Chambers, & Johnston, 2010; Miltenburg, 2009; Anderson, Cleveland, & Schroeder, 1989; Skinner, 1969).

There are two different views of the firm linked to manufacturing strategy; market-based and resource-based view, both provides perspectives on how to achieve a fit within the company and to its market (Brown & Blackmon, 2005). In this thesis, a resource-based perspective will be used.

2.3.1 Resource-based view

The view upon Operations strategy has moved from a market-based view on the strategy to a more resource-based perspective (Dangayach & Deshmukh, 2001; Gagnon, 1999). The resource-based view on a company is based upon early economic theory (Slack & Lewis, 2011). The market-based view and the resource-based view of a company have their origins in different economic schools, where the resource-based view has much in common with the "Austrian School" of economics. The Austrian School puts a lot of effort and points out the importance of entrepreneurship and behavioral economics (Slack & Lewis, 2011). The resource-based perspective argue that what makes a company sustainable competitive is its capabilities and core competences (Slack, Chambers, & Johnston 2010). Hence, the development of a company´s internal resources and capabilities is a very important part of operations strategy in order to be and stay competitive on the market (Barney, 1991; Slack, Chambers, & Johnston 2010; Slack & Lewis, 2011). The resource-based view of a company starts with the identification and understanding of the company´s internal resources and strengths. This also includes all the intangible resources existing within a firm (Barney, 1991). The resource-based view upon the company stresses that companies should focus on developing resources and capabilities that are hard to imitate since it is due to those resources the company can stay competitive on the market compared to competitors (Slack & Lewis, 2011).

In the resource-based view upon operations strategy, the resources of different firms are considered to be both heterogeneous and hard to move to a different setting (immobile). This is important in order to understand why the resource-based view sees the unique resources of a firm as a competitive advantage (Barney, 1991). In the resource-based view on operations strategy, the resources are considered to be strategic if they fulfill specific assumptions, meaning they should be valuable for the firm, imperfectly mobile (difficult to move out of the firm), imitable (not easy to copy) and substitutable (not easy to find a substitution to) (Barney, 1991). If they are rare, this means that resources cannot be evenly distributed among the competitors, for example experienced workforce and specialized production plants (Barney, 1991). Internal knowledge sharing, including Best Practices and internal benchmarking of such, are closely linked to those.

The capabilities of operations develop through taken strategic decisions regarding the resources. Areas for strategic decisions can be described as structural or infrastructural (Slack, Chambers, & Johnston 2010). Structural decisions focus on the design of the operations. The infrastructural decisions on the other hand, are decisions influencing the

organization, improvement work and the planning of the operations, to take some examples. The infrastructural decisions influence the processes and systems which control and shape how the operations work out (Slack, Chambers, & Johnston 2010). Taking a resource-based view upon the firm, the competence and ability to share knowledge and transfer practices within the firm regarding manufacturing is vital to the competitiveness of the company (Lu, Mao, & Wang, 2010). Knowledge-based resources are hard to imitate for a competing company and are important parts of the valuable resources within a firm (Lu, Mao, & Wang, 2010; Barney, 1991).

2.3.2 Knowledge-based view

A knowledge-based view upon manufacturing strategy is built upon a resource based perspective of the company (Grant, 1996). The efficiency of knowledge sharing is to a large extent dependent on the possibility to the same language knowledge and language use of both the source and the recipient (Grant, 1996). Knowledge can be shared horizontally between units within the company, as well as between different units in the corporation hierarchy, vertical knowledge transfer (Lu, Mao, & Wang, 2010). The transfer of Best Practice between different manufacturing facilities involves horizontally sharing of knowledge as it relate to transfer of practices existing elsewhere in the global network of manufacturing facilities (Szulanski, 1995; Friedli, Mundt, & Thomas, 2014). The main barriers for a successful identification and transfer of Best Practice within a company are linked to knowledge sharing rather than motivation (Szulanski, 1996). A critical step for a network of manufacturing facilities within a company, in order to improve the performance, is to get the facilities to increase their possibility to share and create knowledge between each other (Ferdows, 1997).

Knowledge and knowledge sharing is getting more and more important within companies world-wide and the question on how to share and gain organizational knowledge is important in most firms today as a result of the view upon knowledge and organizational knowledge as an intangible and valuable resource (Nonaka, 1994; Barney, 1991). Historically, it has been a very static view upon the firm, focusing on processing information and not knowledge. The difference between information and knowledge can be described as knowledge is organized by a flow of information, while information in itself only is a flow of messages. Knowledge relates to the action of humans inside the company (Nonaka, 1994). With this in mind, knowledge can have mainly two dimensions; tacit knowledge and explicit knowledge (Nonaka, 1994).

Knowledge can generally be transferred two ways within a company; horizontally and vertically. Vertical sharing of knowledge is transfer of knowledge between two or more departments that are not alike in the organization structure, as they have different functions; for example between a production unit and a development department (Szulanski, 1995). Horizontal transfer of knowledge on the other hand is sharing of knowledge between two or more units that work with the same kind of tasks, for example between two manufacturing units or facilities (Lu, Mao, & Wang, 2010). Vertical transfer is often knowledge that are being implemented and adapted for the first time within the

company (Szulanski, 1995), for example regarding a new product that should be produced and launched. Transfer of Best Practice is most often horizontal transfer of knowledge within the company and is an example of knowledge that is being used somewhere in the firm already, being transferred and used somewhere else as well (Szulanski, 1995; Lu, Mao, & Wang, 2010).

Multinational companies are working with establishing practices that will work world-wide; however, most companies trying to do this by issuing rules and information into written format, mostly providing information and not knowledge in itself. When the employees should turn those rules into real actions in their everyday working routines, the practices are not fully transferred since not both the tacit and explicit knowledge are being transferred (Wellstein & Kieser, 2011). In order to create knowledge within an organization, there must be a dialogue and interaction between those two dimensions (Nonaka, 1994). Tacit knowledge is regarding knowing how to do something, while explicit knowledge relate more to knowledge about something. Explicit knowledge can be shared by communication while tacit knowledge is being shared and learned by application of the knowledge (Grant, 1996).

The explicit knowledge, possible to share by the expression of words between humans through a media, is only a small part of the possibility for knowledge creation and sharing. The tacit knowledge has elements such as technical and cognitive and is a continuing activity for the human brain (Nonaka, 1994; Nicolas, 2004). In order to share both tacit and explicit knowledge within a firm, a main function to share knowledge into organizational knowledge is by individuals that talk and share with each other within the firm, making it possible for the employees to relate to both the tacit and explicit dimensions of knowledge (Nonaka, 1994; Wellstein & Kieser, 2011; Grant, 1996).

2.4 Best Practice

The word practice refers to a routinized way of using knowledge and competence (Szulanski, 1996). This includes both individuals' knowledge as well as collaboration between employees. This knowledge often contains tacit knowledge, which is important to remember when trying to transfer knowledge within the firm since this is something that sometimes ignored in the process (Szulanski, 1996; O'Dell & Grayson, 1998).

Best Practice can have different meanings in different situations. Hayes & Wheelwright´s (1985) concept of World Class Manufacturing is in some literature linked closely to the concept of Best Practice (Dangayach & Deshmukh, 2001; Silveira & Sousa, 2010). Literature with this close link to World Class Manufacturing is often focusing on advanced manufacturing technologies, manufacturing resource planning or management practices such as TQM, Lean Production and Concurrent engineering (Dangayach & Deshmukh, 2001). The critics to this definition of Best Practice arguing that those World Class Manufacturing concepts such as Lean and TQM cannot be considered "Best Practice" as they are not a Best Practice in themselves, but rather a sketch of a broad picture of what could be a good practice (Wellstein & Kieser, 2011)

In this thesis the definition of Best Practice will be influenced by for example Szulanski´s (1996; 1995), O'Dell & Jackson Grayson´s (1998) and Jarrar & Zairi´s (2000a) use of the term that is closely linked to internal benchmarking. Szulanski (1996; 1995) sees Best Practice as a practice that is better than other practices known both internally in the company as well as externally. Jarrar & Zairi (2000a) and O'Dell & Jackson Grayson (1998) use the same approach to classify practices. This classification of practices is a way to show that it might be problematic just to label a practice as "best" since this "best" is not a label that is forever. Best Practice is a moving target, which develops all the time (Jarrar & Zairi, 2000a). Best Practice also has to adapt to each specific situation and organization, as it has to work in the context to be the best (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000a). A Best Practice is a practice that specifically is the practice that works best in the specific context, it has to fit the business and encourage improvement (O'Dell & Grayson, 1998). Practices that have been proven to work in a specific setting can then be adapted to fit another organization or context (Jarrar & Zairi, 2000b).

O'Dell & Jackson Grayson (1998), Jarrar & Zairi (2000a; 2000b) use four levels of a Best Practice, which are described in short below:

- *Good idea* – Such practice could possibly have a positive effect on the performance but it is still unproven. This practice could after analysis of available or collected data, be a candidate for further implementation in more locations (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b).
- *Good practice* – Has proven results on performance after implementation. A good practice is a candidate for application at more locations within the company (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000a).
- *Local Best Practice (proven)* – A further development of a good practice that has been proven to be the best available practice for a larger part of an organization, example for a department level. The Practice should be applicable for most locations within the department. An analysis of available performance data has been made (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000a).
- *Industry Best Practice* – Determined to be the best available practice in the industry for a large part or the entire organization. This is determined by internal as well as external benchmarking based upon performance data (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b).

In short, a Best Practice can be defined as "any practice, knowledge, know-how, or experience that has proven to be valuable or effective within one organization that may have applicability to other organization" (O'Dell & Grayson, 1998). A version of this definition is going to be used in this thesis with the definition of organization as a department within the firm, more specifically a manufacturing department. The definition used in this research also take into consideration the definition of practice being described above, limiting a Best Practice to knowledge that is being used as routine.

Definition of Best Practice in manufacturing: A practice that has been proven as effective within one manufacturing site that may have applicability to other manufacturing units as well.

The definitions of Local Best Practice and Global Best Practice that will be used in this research will be influenced by O'Dell & Jackson Grayson (1998) and Jarrar & Zairi (2000 a,b) definitions and the global network theory that will be used. The latter influence the definition by focusing on geographically matters when referring to local and global. In the approach used by O'Dell & Jackson Grayson (1998) and Jarrar & Zairi (2000a) the definition of local, in matter of fact, relate to the company group and not to a geographical location. This influence to a large extent the differences between the definitions used in this thesis compared to the one used by O'Dell & Jackson Grayson (1998) and Jarrar & Zairi (2000a; b). In the labels used by O'Dell & Jackson Grayson (1998) and Jarrar & Zairi (2000a; b) the definition of local relate to the company group and rather than a geographical location.

Table 2 - Best Practice concepts

Concept	Labels used by O'Dell & Jackson Grayson (1998), Jarrar & Zairi (2000a) and Jarrar & Zairi (2000b)	Used definition in this thesis
Practice	*Good idea* – could possibly have a positive effect on the performance but it is still unproven. This practice could after analysis of available or collected data, be a candidate for further implementation in more locations (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b).	*A process that is being used in an established and routinized way within a part of the organization. Comprises techniques as well as teamwork and knowledge (Influenced by Voss, Åhlström, & Blackmon, 1997).*
Local Best Practice	*Good practice* – Has proven results on performance after implementation. A good practice is a candidate for application at more locations within the company (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000a).	*A practice used within one or few units that has proven performance. A Local Best Practice might be a candidate for application at other manufacturing units, at other locations within the company.*
Global Best Practice	*Local or proven Best Practice* – A further development of a good practice that has been proven to be the best available practice for a larger part of an organization, example for a department level. Should be applicable for most locations within the department. An analysis of available performance data has been made (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000a).	*A further development of a Local Best Practice that has been applied for a larger part of the company, for example a department level, regardless of geographic location. It should be applicable for and applied at most locations within the specific department.*
Industry Best Practice – regarding also external benchmarking. Will not be used in this research.	*Industry Best Practice* – Determined to be the best available practice in the industry for the entire organization. This is determined by internal as well as external benchmarking based upon performance data (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b).	*Determined to be the best available practice in the industry for the entire organization. This is determined by internal as well as external benchmarking based upon performance data* (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b).

2.5 The Best Practice process

The transfer of Best Practice between source and recipients can be seen as stages that occur in a specific order (Szulanski, 1996). Szulanski (1996) is using four stages of the transfer; initiation, implementation, ramp-up and integration which can be linked to Jarrar & Zairi´s (2000a; b) six stages. The stages will be presented below with Szulanski´s (1996) names of the stages as a basis since those are more general. The relationship between the two different models can be seen in table 3.

Table 3 - Stages of the Best Practice transfer

Stages Szulanski (1996)	Stages Jarrar & Zairi (2000a; b)	Stage definition in this study
Initiation	Searching Evaluating Validating	Searching Evaluation Validating
Implementation	Implementing / Transfer	Implementation
Ramp-up	Review	Review
Integration	Routinizing	Routinizing

2.5.1 Initiation: searching, evaluating and validating

The initiation stage described by Szulanski (1996) includes the searching, evaluating and validating phases described by Jarrar & Zairi (2000a; b). The overall process of a transfer starts when there exists both a need and knowledge that are required to meet the need. Those two can exist within the organization at the same time, without being discovered. The initiation stage involves all events that lead to a decision to transfer a Best Practice. When a requirement and a solution to that specific need is identified a possibility to a transfer has occurred (Szulanski, 1996).

The biggest barrier in the initiation phase is ignorance from both the source as well as the recipient (Szulanski, 1996). In very large companies there is usually an unawareness of what knowledge and needs other sites or departments have. In those situations a problem is to identify a fit between the knowledge and the need in order to improve the overall performance within the firm (O'Dell & Grayson, 1998). In order for the transfer to take place, there must be a fit of the need and the required knowledge (O'Dell & Grayson, 1998; Szulanski, 1996).

In terms of internal benchmarking, this is a barrier that has to be overcome in order to gain from the potential knowledge inside the company. External benchmarking overlooks the amount of valuable information, practices and knowledge already existing within the firm (O'Dell & Grayson, 1998). Therefore, an extremely important step in the transfer of the Best Practices is to identify a fit between a need and knowledge already existing in the firm, and to connect them (O'Dell & Grayson, 1998; Szulanski, 1996).

The searching phase involves the identification of potential Best Practices, including both external and internal good ideas and practices (Jarrar & Zairi, 2000b). There are many

sources that can be used in order to identify those, including for example; literature review of published material both in journals, on the Internet and at internal intranets (Jarrar & Zairi, 2000b). Networking is another valuable source of information in order to identify potential Best Practices. The networking is of both personal nature between individuals as well as networking at conferences and formal meetings between people at the company. Potential evaluations can also be identified by organized site visits as well as in co-operations with dedicated research centers and at educational situations (Jarrar & Zairi, 2000b).

The evaluation step is very specific to each context as it can vary a lot between different companies and situations. In broad terms it is aiming to decide the value of different practices in relation to the required needs (Jarrar & Zairi, 2000b). This step can differ a lot depending on what the needs are and how the valuation is done (Wellstein & Kieser, 2011). The evaluation of Best Practices should always depend on how the practices can be used to improve the overall performance for the whole company, and not just for a specific site or facility (Davies & Kochhar, 2002). Hence, it is important to look at for whom and what department or organization a Best Practice is good for in terms of improving performance (Jarrar & Zairi, 2000b; Wellstein & Kieser, 2011).

After the evaluation of potential Best Practices, a decision is being made. A decision can be seen as a commitment to a specific action. This is usually done by showing commitment through dedicate resources to a specific task. The decision process can be described to start with the need and the stimulus for action and the commitment and dedication for a specific action (Mintzberg, Raisinghani, & Théorêt, 1976).

There is a connection between the decision-making process and the management of knowledge within a firm (Nicolas, 2004), which is important in the context of a Best Practice approach. Decision processes are often very complex, but at a very basic level and in the simplest case, a decision processes starts with recognition of a given solution and the evaluation and the choice of the solution (Mintzberg, Raisinghani, & Théorêt, 1976). The strategic decision process can in very general and simple terms be seen as three different phases; Identification, Development and Selection (Mintzberg, Raisinghani, & Théorêt, 1976) or Intelligence phase, conception phase and selection phase (Nicolas, 2004). The intelligence phase includes the definition of the problem. During this phase, knowledge is shared between individuals to the organization and collective knowledge is moved to the individuals as well (Nicolas, 2004).

Thereafter, new solutions are designed. This is a phase driven by action. Participating individuals share knowledge with each other and with the organization. The searching for a good concept and the best solution often results in very complex communication and problems with transferring knowledge and understanding within the organization (Nicolas, 2004). The last phase is the selection phase in which the different concepts are being evaluated and the best available option is selected. This phase often faces the problem of uncertainty (Nicolas, 2004). Sometimes it can be hard to motivate a specific solution in words, which sometimes makes it hard to take a decision based upon all

knowledge the participating employees have gain from the previous phases. Explicit knowledge has the main role in this phase as it to a large extent is based upon argumentation (Nicolas, 2004).

Decisions can be categorized by different factors within the different phases, including for example what stimulus that was the origin for action, the solutions of the decisions and the processes used to be able to carry them through (Mintzberg, Raisinghani, & Théorêt, 1976)

After the evaluation of the practices a validation is being made. This is also very specific for the different context depending on how the evaluation is done before. The practices are in this phase qualitatively being studied more in detail and depth in relation to the benefits it can generate to other departments or units (Jarrar & Zairi, 2000b). Some practices require validation while others do not. In some cases this validation is being made by the users in an intuitive way while other times validity test is being carried out to ensure the quality (Jarrar & Zairi, 2000b).

Approaches

In order to facilitate the process of an actual transfer, there are four common approaches; benchmarking teams, Best Practice teams, knowledge and practice networks as well as internal assessment and audits (Jarrar & Zairi, 2000b).

Benchmarking teams are being used for internal as well as external benchmarking projects (Jarrar & Zairi, 2000b), meaning they are aiming to identify, both externally and internally, and later adapt practices that are outstanding in any way (O'Dell & Grayson, 1998). The teams often start with a comparison between performance and different practices. The teams should be looking for real breakthroughs in order to improve the most (O'Dell & Grayson, 1998). The benchmarking team has usually a clear start and end to their project. Regarding benchmarking teams, it is important to keep in mind that the Best Practice could exists within the company. Even if the external benchmarking sometimes is the driver for benchmarking and the adoption of Best Practice (O'Dell & Grayson, 1998), the internal benchmarking have a lot of advantages, including less time-consuming, not having to share knowledge with external parts and the access to a lot of information (Szulanski, 1996). In terms of internal Best Practice identification and transfer, the teams should be focusing on identifying what could work and what could not at different sites within the company network (O'Dell & Grayson, 1998).

Best Practice teams are a more on-going function within the organization than benchmarking teams, as they are working as a part of the networking structure (Jarrar & Zairi, 2000b). The teams are often consisting of professionals that have similar roles within different functions or similar roles at different sites. The Best Practice teams are often ordinated from the top of the organization (O'Dell & Grayson, 1998). The team are continuously discussing and communicating both via meetings as well as by technical aids such as email and electronic conferences (O'Dell & Grayson, 1998), bridges the distance between the different sites.

Networks arise both formally and informally. When a company restructuring or downsizing former formal networks sometimes turn into informal networks as well (O'Dell & Grayson, 1998). To move people around within the company facilities communication and build networks between sites and departments. Both benchmarking and Best Practice teams are ordinated from the company management, knowledge and practice networks on the other hand, emerge from the bottom (O'Dell & Grayson, 1998). This development can be encouraged by the company, making it easier for the networks to communicate by for example providing information. A good environment makes the network more stable and makes information flow between different sites (Jarrar & Zairi, 2000b). This approach is one example of the increased impact of Information Technology (IT) and Information System (IS) for the Best Practice approach. The advances in IT and IS are expected to result in more Best Practice transfer between different sites and departments as it facilities networks and communication, both informal and formal (Jarrar & Zairi, 2000a).

This approach has a lot of different forms, varying between for example formal technical assessments and internal awards (O'Dell & Grayson, 1998). Often, one of the criterions to get an award is that the unit is willing to share the practice or knowledge with other units as well (Jarrar & Zairi, 2000b). Corporations often use for example recognition programs and awards to identify and spread Best Practices. The criteria used are often inspired or directly connected to formal awards such as Malcolm Baldrige National Quality award (Jarrar & Zairi, 2000b). The internal award winners are often being highlighted or noticed at conferences within the company and can by that forum be spread within the company (O'Dell & Grayson, 1998).

Methods for identification

There are mainly three ways to identify a good or a Best Practice; expert judgment that is based upon empirical evidence, success factor research and benchmarking (Wellstein & Kieser, 2011). The methods being used for identification and transfer and the approaches of doing so, described above, could be combined to be able to identify and evaluate potential Best Practices.

The expert judgment is an approach for identification of potential Best Practices. The expert judgment is based upon empirical studies, with evidence about what is the best way to a specific task or product. This approach is commonly used within the medical industry, where there also is a quite general interest to share between the different companies about standardization, especially about patient care and treatments (Wellstein & Kieser, 2011). Hospitals and employees at hospitals do not for example competing against each other in the way units at different locations sometimes do in other industries. Often, the process of identifying a good or Best Practice using this approach starts with experts that screen the market and evaluate existing evidence of different practices. After a judgment of the evidence used has been made, the experts establish a norm or consensus about what is the best available practice for the specific task (Wellstein & Kieser, 2011)

The quite academic approach to Best Practice identification has, however, also some problems. The evaluation of different evidence can be made in different ways and guidelines are not always corresponding. Experts do not always agree about what is the best available practice and this shows how hard it can be to reach a decision upon what is a Best Practice within a company, even though there are existing empirical data and evidence (Wellstein & Kieser, 2011).

Success factor research is used as a way for identifying Best Practices used in almost all organizational functions within a company; strategy, HR and manufacturing to take some examples (Wellstein & Kieser, 2011). Success factor research is however very debated between both practitioners and academics. The argumentation that success factor research is a good way to identify Best Practices lays on the hope to achieve expectations in form of organizational adaption, logic of improvement of the performance etc (Wellstein & Kieser, 2011). However, it is hard to separate the practices from its context and it is hard to evaluate if the Best Practices really do improve the performance in all contexts. Critics about this approach arguing that Best Practices only rely on historical data and that the descriptions of practices in success factor studies are too broad and rough to be able to draw any conclusions (Wellstein & Kieser, 2011).

Benchmarking is a systematically way to find Best Practices. A typical approach for the use of benchmarking in order to identify a Best Practice is to study measurements of performance for specific units or departments and trying to identify what kind of specific practices that influence the performance in the best way and how much. The best performer's practices can then explain why the best have achieved better performance measurements than the others (Camp, 1995). This approach has its limitations and barriers, it can be hard for example to find performance measurements that captures the different practices' performance, especially if the practices are from different origin and from different locations (Wellstein & Kieser, 2011). Benchmarking studies are often relatively few in numbers and often they cannot be empirically tested. It can also be hard to identify what criteria to use for evaluation (Wellstein & Kieser, 2011).

Benchmarking could include comparison of different practices in order to find the best available practice (Anand & Kodali, 2008). Also in benchmarking the questions have been raised in how to know if a practice really is the best, as well as how to know which method is the most suitable for determining what practice is the best in the comparison (Anand & Kodali, 2008). Different benchmarking methods can be identified, some with a lot in common, some with quite little in common. In broad terms, the different methods can be classified based on their origin; academic/research-based models, consultant/expert-based models and organization-based models (Anand & Kodali, 2008). The consultant-based models are the most commonly described in the literature review done by Anand & Kodali (2008) and benchmarking is considered a tool with great industrial applicability rather than an academic utility. Those models tend to be quite context-specific and hard to apply at some different environment.

The benchmarking process can be seen as two different, major processes happening at the same time; the management process and the user process (Camp, 1995). The Management process aims to ensure that the team responsible for the benchmarking activity is successful and to make sure that the benchmarking is working against the objectives (Camp, 1995). Camp's (1993) 10-step model, focusing on the users´ part of the benchmarking activity, is commonly described and widely used among practitioners (Anand & Kodali, 2008). The model consists of five different phases; Planning, Analysis, Integration, Actions and Maturity (Camp, 1993). The first three steps in the model belongs to the Planning phase (Camp, 1993); Decide what to benchmark, including identification of what the largest opportunity of improvement of the organization is, identify what to benchmark against, and the third step; planning and conduction of an investigation aiming to determine what data or information are needed. This step includes documentation of the Best Practices found (Camp, 1995), in this case the local practices. This last step, including collecting the data, can be seen as a part of both the first and the second phase as this is such an important and big step within the process of benchmarking. It provides information and input necessarily for many of the other steps (Camp, 1995; Anand & Kodali, 2008).

In the analysis phase the steps of determining the current gap in performance between the benchmarking subject and the other identified practices, also determine how much the gap could be evolving in the future (Camp, 1993; Camp, 1995). This phase is a lot about comparing collected data and understand experiences of the different practices, the advantages and disadvantages of the different practices must be evaluated and analyzed in order to compare them correctly and comprehensive. It is also important to understand how much better a specific practice is in order to be able to compare the benefit of adapting such a practice compared with the cost associated with such a change (Camp, 1993; Anand & Kodali, 2008).

In order to be able to see connections and patterns within the data, visualization and displaying of data is important, this can for example be done by a matrix or summary structure with important objectives and metrics connected to each available practice. When visualizing in this way, it is possible to find a practice that perform better than the others and also why this is the case (Camp, 1995). Also remember the possibility to combine different parts of different practices and compare if this could result in an even better overall performance (Camp, 1993; Camp, 1995).

The third phase includes the steps of communicating the results of the analysis and to establish goals and objectives for the future state (Camp, 1995). This phase includes the sub process of using the findings of the benchmarking activity to set new objectives for performance of the identified Best Practice (Camp, 1993; Anand & Kodali, 2008).

Next phase is the action phase, including three steps of development of action plans, implementation of actions and monitoring of the results of the implementation, but also to recalibrate the used benchmarked practices as benchmarking should be a continuous process within the company (Camp, 1995).

The last phase does not contain any own steps as it is concerned with the maturity of the processes. It is achieved when the best available process has been implemented and used to that extent that superior performance has been reached (Camp, 1993; Camp, 1995)

2.5.2 Implementation

The starting point for the implementation stage is the decision to start transferring a Best Practice. Knowledge and resources are being exchanged between the source and the recipient (Szulanski, 1996).

The implementation phase has two major components; enabling Best Practices and transfer of the Best Practices. The enabling of Best Practices includes dimensions as visible leadership and identification of barriers for transferring of the practices. The enabling is also being facilitated by focusing on the priorities that can be benefited by the adoption of the Best Practice. It is also important to remember the big impact the people and the behavior of the employees have on the process of transfer. In order to be successful it is important to have knowledge of both the organizations' own processes as well as the practices that will be introduced (Jarrar & Zairi, 2000b). During the transfer of the practice it is important to focus on the perception of the employees and both the transmitter and the receiver. Overcoming the barriers of transferring Best Practices is important in order to be successful in the overall project (Jarrar & Zairi, 2000b).

2.5.3 Ramp-up and review

When the knowledge and the process are starting to be used in the new setting, the transfer has reached the ramp-up stage. Initially, problems will probably occur as well as a deeper understanding of how to use the new (Szulanski, 1996). To close the loop of the implementation phase, it is important to review the implementation stage in order to learn and gain more knowledge about the organization and the process (Jarrar & Zairi, 2000b).

2.5.4 Integration and routinizing

As time passes by, the knowledge and the process will be more satisfactory used in the new setting. As the process is being more and more routinized, the practice will evolve (Szulanski, 1996). As the knowledge is being shared between the departments or locations, the understanding and the predictability of the practice will develop. This facilitates a better communication and understanding between the former source and recipient (Grant, 1996).

At first, it is important to remember that the process of transferring Best Practices within the firm must be supported by an enabling environment during the whole process (Jarrar & Zairi, 2000b). Jarrar & Zairi (2000a; 2000b) are arguing that a generic framework for the process of Best Practice transfer can be applied. The framework is built up by the steps of searching, evaluating, validating, transfer, review and routinizing of practices (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b).

If the Best Practice is adopted in a successful way within a unit, it should ultimately change the way people work and bring the practice or process into the culture at the workplace (Jarrar & Zairi, 2000b).

2.5.5 Sources and recipients

The process is to a large extent dependent upon the characteristics of source and recipient of the transfer (Szulanski, 1996). The number of sources and recipients in the transfer are influencing the design of the process and each individual step of the transfer (Lu, Mao, & Wang, 2010).

The transfer of Best Practice within a company can be seen as the interchange of knowledge between a source and a recipient. The transfer is dependent upon the characteristics of the source and the recipient, meaning that the success and the barriers are dependent on how the involved parts are reacting and behaving (Szulanski, 1996). Lu, Mao & Wang (2010) propose three models for Best Practice transfer within a firm; Clone-model, Blend-model and Interaction-model. The study apply a resource-based and knowledge-based view upon the firm when analyzing, focusing on the strength of applying and sharing knowledge and practices within the firm instead of only using external benchmarking (Lu, Mao, & Wang, 2010; Grant, 1996; Szulanski, 1996). The models use two dimensions for classification; number of source units and number of recipient units (Lu, Mao, & Wang, 2010).

The Clone-model, shown in Figure 4, applies to Best Practice transfer between one source unit and either one or more recipient units. Typically a Best Practice is developed and identified in one unit. After identification of such, a template is designed and shared with one or multiple recipients (Lu, Mao, & Wang, 2010).

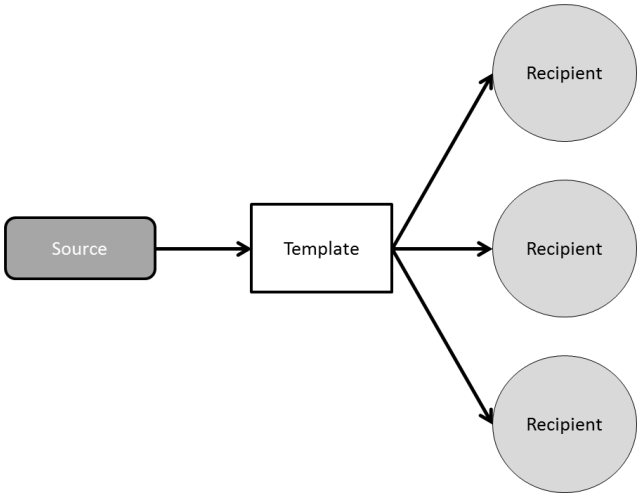

Figure 4 – Clone-model (Lu, Mao, & Wang, 2010)

The Clone-model is mainly based upon vertical knowledge sharing and as Best Practice transfer mainly includes horizontally knowledge transfer within a company this model is mainly used between subunits as R&D-department to production plants for example (Lu, Mao, & Wang, 2010; Szulanski, 1995).

The Blend-model, illustrated in Figure 5, works the other way around. A template of a Best Practice is being developed by multiple units and then transferred to one, single recipient.

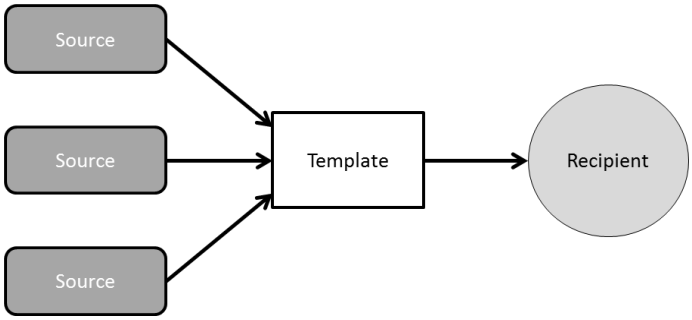

Figure 5 – Blend-model (Lu, Mao, & Wang, 2010)

A typical example of this Blend-model is when multiple projects are carried out and the cumulative experience and knowledge from all those projects is being put together and shared before next project should be carried out. In that way, mistakes can be avoided and knowledge gained from other projects can be used in the next project (Lu, Mao, & Wang, 2010). The challenge of this kind of model is to make people share their knowledge and do it together with others in order to make the process better for a recipient. To develop a culture of knowledge sharing and willingness to do so is very important to enhance for the management (Lu, Mao, & Wang, 2010; O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b).

The interaction model, shown in Figure 6, is built upon interaction between the different units. The units are not only a source or a recipient, but both. The interaction-model has both multiple sources and multiple recipients.

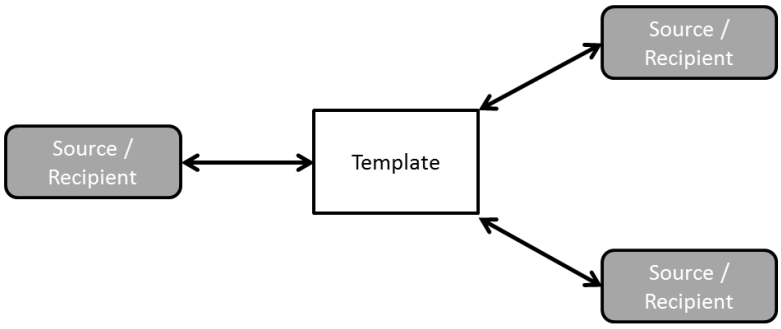

Figure 6 - Interaction-model (Lu, Mao, & Wang, 2010)

An example of how this is done is that each unit provides their Best Practice, communicate it with other units and learn from each other. This model is hence used to multiply the transfers of Best Practices (Lu, Mao, & Wang, 2010). This model is suitable when it comes to horizontal knowledge transfer, as Best Practices being transferred between subunits, for example between production facilities (Lu, Mao, & Wang, 2010; Szulanski, 1995). The use of different kinds of technology in this model can facilitate the knowledge sharing (Jarrar & Zairi, 2000b; Lu, Mao, & Wang, 2010).

2.6 The concept of benchmarking

Benchmarking is commonly used and discussed among practitioners. It is widely spread across different industries and locations all over the world (Jarrar & Zairi, 2000a). Benchmarking can be described as the process of comparing methods and practices with other processes in order to identify which option that are the most superior and learn from that (Collin, 2006; Slack, Chambers, & Johnston, 2010). Benchmarking can be a way of identify and adopt Best Practices (Camp, 1992) and could be considered as a catalyst for future improvement (Anand & Kodali, 2008).

The definition of benchmarking is, like the definition of a Best Practice, widely discussed. Hence, the definitions often include comparisons, measurement, identification of Best Practices, overall improvement, and implementation (Anand & Kodali, 2008).

Benchmarking can be of two types; external benchmarking and internal benchmarking. External benchmarking can be described as the process to understand, identify and adapt practices, knowledge and processes from external parties (O'Dell & Grayson, 1998). Internal benchmarking is less hindered by legal aspects as well as confidentiality to external companies (Szulanski, 1996). In terms of time and complication, at least initially of the transfer process, internal benchmarking is less consuming and easier to initiate than external benchmarking for each company (Szulanski, 1996). There already exists a lot of knowledge and good practices within the organization, which can be identified and spread by internal benchmarking (O'Dell & Grayson, 1998). Taking a resource-based view upon manufacturing strategy, the competitive edge can be gained and kept by applying and maintaining the knowledge and practices developed within the firm, and effectively communicate and use those practices and competences at different sites in order to improve the overall performance (Lu, Mao, & Wang, 2010).

Internal benchmarking can be defined as the total process of identify, share and use the knowledge and practices that exists within the own organization (O'Dell & Grayson, 1998). In this case, the organization will be defined as corporate group level, including all related enterprises within the group.

Internal benchmarking will in this study be defined as:

The total process of identifying, using and sharing knowledge and comparing practices existing within the own corporation group.

2.7 The link between benchmarking and Best Practice

Benchmarking and Best Practice are closely related and have become even more related in research lately (Anand & Kodali, 2008). Best Practice could be seen as the goal while benchmarking can be seen as the method or tool to achieve Best Practice. Internal and practice benchmarking can be used as an improvement tool of the practices within the firm, meaning to learn from other processes and departments (Slack, Chambers, & Johnston, 2010). Benchmarking can be seen as a way to identify and judge how a practice

is doing compared to others (Slack & Lewis, 2011; Anand & Kodali, 2008) in order to identify a best way of doing things in order to get the highest possible performance. Best Practice is, as defined above, a practice that has been proven to be effective in one site that also might have applicability to others (see (Szulanski, 1996; Szulanski, 1995; Jarrar & Zairi, 2000a; O'Dell & Grayson, 1998). In order to identify such a practice and in order to develop a Global Best Practice from Local Best Practices; benchmarking is being used as a way to identify what is best in those terms. Benchmarking is being used to compare different practices in order to identify a Best Practice within the company (Slack, Chambers, & Johnston, 2010; Szulanski, 1996).

2.7.1 Critics of Best Practice

The definition of what is considered a Best Practice is vague. In some research Best Practice is closely related to World Class Manufacturing such as Lean, TQM and others (Dangayach & Deshmukh, 2001). In other research the definition is linked to internal benchmarking (e.g. Szulanski, 1996 & Jarrar & Zairi, 2000a). This is problematic as it sometimes is hard to identify what a Best Practice really is. It also generates some language problems as the concept has different meanings to different people and organizations.

Other critics regard the problems with the word "best" since this can be argued to be specific to different context, situations and objectives. The word best is only best in the terms of what is currently existing and do not put limitations to what can be best in a future state. If putting too much into the word "best", prevention of breakthrough projects and practices can occur (Slack, Chambers, & Johnston, 2010). The identification and evaluation of Best Practices relies on historical data and cannot be assumed to also work as wanted and intended in the future and in another context (Wellstein & Kieser, 2011).

2.7.2 Critics of benchmarking

A main critic of benchmarking is the reasoning that if we share everything we have, we will not have any unique expertise within the company that will make it special, which is an important part in the resource-based view upon manufacturing strategy. It also results in that we cannot be better than others (Slack, Chambers, Johnston 2010). Important to take into consideration regarding this critic however is that it is mainly focusing upon external benchmarking. Considering the global company as one, sharing and transferring knowledge and process within the company, between sites, does not generate the problem of sharing to competitors. Internal benchmarking is therefore still a great tool to use in order to gain advantages within the corporation from a resource-based view upon manufacturing strategy. The critics of benchmarking resulting in that we are not better than the other departments are somehow still valid. Benchmarking has been criticized to put limits for creativity and improvements ahead for existing practices (Slack, Chambers, Johnston 2010) and it could also limit the possibility to breakthrough practices, especially when focusing solo on internal benchmarking (Anand & Kodali, 2008). Breakthrough improvements and practices can be hard to achieve if focusing too much on comparing

existing practices instead of putting effort in finding completely new ways of doing things (Slack, Chambers, Johnston 2010; Anand & Kodali, 2008).

2.8 Facilitators for Best Practice transfer

O'Dell & Jackson Grayson (1998) have identified five different drivers for the application of Best Practice within a company and the transfer of them between different sites. First, a driver for the use of Best Practice transfer is a need for action as a result from increased competition or a requirement for cost reduction (O'Dell & Grayson, 1998). Successful practices or initiatives also tend to generate support for sharing of knowledge and practices within the company. To duplicate successful projects or practices generates a more willing attitude to share more internally as it has been proven to work somewhere else (O'Dell & Grayson, 1998). Transfer of Best Practices can be seen as an opportunity to improve the overall performance. Downsizing and decentralization of the overall group is also a driver for the use of Best Practice transfer. This development forces the operational units to be responsible for their own improvements. Corporations can no longer count on specific, functional units to be responsible for the identification and sharing of knowledge and practices. The leaner organizations also lack the traditional management networks, meaning that the units have to take action in order to transfer and identify Best Practices between facilities (O'Dell & Grayson, 1998). Another, more obvious driver for the application of Best Practice transfer internally, is the recognition of the potential gain of the transfer. If every operation can be improved as much as the identified Best Practice, the overall potential for improvement is enormous (O'Dell & Grayson, 1998). The willingness to work with internal transfer of Best Practice within a firm is associated with the drive of the company to do something better with support of technology and by the measurement of some kind of framework (Jarrar & Zairi, 2000b). A great driver for the interest of internal benchmarking and internal Best Practice transfer is the sometimes achieved or recognized results of external benchmarking. External benchmarking can show the company the potential of their own, existing competence and knowledge within the company (O'Dell & Grayson, 1998).

2.8.1 Success factors

In order to be successful in identifying and transferring Best Practices between different units in the company, there are some things that might be more vital to the process than others. In a study carried out by Jarrar & Zairi (2000a), the part that was considered the most important among practitioners in order to be successful was the involvement of the process owner. It is also important for the implementation of the practice that the leadership and management are visible and available (Jarrar & Zairi, 2000b). The result from the study highlights the importance of employee involvement in the process, including training, communication between individuals and departments and ownership of the process (Jarrar & Zairi, 2000a). For the recipients of the transfer the involvement includes education to the process operators working with the practices daily and communicating the benefits of adapting the practice (Jarrar & Zairi, 2000a; O'Dell &

Grayson, 1998). A lot of the stickiness regarding Best Practice transfer derives from the recipients (Szulanski, 1996), but even so, the benefits for communicating and sharing a Best Practice must also be explained and pointed out to the source of the practice in order to make them more inclined to share their knowledge. In order to be successful it is important that the source of knowledge also feels motivated (Szulanski, 1996; Jarrar & Zairi, 2000a). It is also important that the rest of the organization feels that the source is reliable as a reliable source is more likely to really influence the behavior of the recipient (Szulanski, 1996). The identification and evaluation of potential Best Practices, as well as the review after the implementation of such a practice in other departments, can be handled both as a formal process as well as an informal "ad hoc" process. Both ways are quite common (Jarrar & Zairi, 2000a) if the company have a process at all to work with harmonization of processes. According to Jarrar & Zairi´s (2000a) study, about 51 % of the studied companies have a formal process for evaluating the practice after the implementation within the company, while 39 % are doing the evaluating ad hoc and 10 % do not do so at all.

To have common goals within the company that are linking the Best Practice approach to corporative goals is important in order to visualize the benefits from the approach and for sharing knowledge and information between departments and different sites (Jarrar & Zairi, 2000b). This includes translating the goals into words that are linked and relevant for each employee. By clearly communicating business needs, it is possible to create a commitment from all departments in the company, resulting in a willingness to share and achieve knowledge from other sites (Jarrar & Zairi, 2000b).

Another important and powerful factor for encouragement of transferring knowledge and practices within the firm is to provide a good IT structure that support the sharing and discussion about practices and the identification and transfer of Best Practices (Jarrar & Zairi, 2000b). Also to have awards and positive recognitions of practices and the implementation of such are important (Jarrar & Zairi, 2000b; O'Dell & Grayson, 1998).

2.8.2 Channels for communication

There are many possible channels for communicating possible Best Practices. The channels must provide a possibility for interaction as the practice should be evaluated and identified as a potential Best Practice. A commonly used channel/setting for communication about practices is meetings, both team meetings and department meetings (Jarrar & Zairi, 2000a). In a physical meeting, the transfer and communication is being made verbal between individuals. Another way to handle the communication is ad-hoc verbally. A problem with all verbal information sharing is that it is exposed to noise and subjective judging and assessment of the employee itself, missing the real idea or information (Jarrar & Zairi, 2000a). Written information, on the other hand, does not in the same way reduce barriers of people in different teams talking and sharing information (Jarrar & Zairi, 2000b; O'Dell & Grayson, 1998). Written information and communication, such as newsletters, magazines and intranet, is another way to communicate about potential Best Practices and the diffusion of such. Written

information is traditionally often of one-way nature; from source to recipient. New technology with the Internet and interactive intranet provide opportunity for interaction between employees and different departments that cannot be achieved in newsletters and magazines for example (Jarrar & Zairi, 2000a).

2.8.3 Facilitating factors

There are some factors that can facilitate an adoption of a Best Practice approach. Among those there are technology, culture of the company, measurement and leadership (O'Dell & Grayson, 1998).

Technology

The technology is fast evolving and it offers an opportunity for the company to adopt a Best Practice approach, aiming to identify and spread Best Practices within the organization (O'Dell & Grayson, 1998). A good IT structure supports the sharing process (Jarrar & Zairi, 2000b). However, even if the technology offers many advantages during the process, it is not the solution to the total adoption process (O'Dell & Grayson, 1998). The technology must be used by the right people and in the right way. The real barriers to the process are not technical to its nature, but the technology gives an opportunity to show the information gathered and needed in an understandable way. The technology development can result in more information gathered and visualized in an understandable way (Jarrar & Zairi, 2000b). Technology offers the possibility to store and gather a lot of information, but it cannot make people take part of it (O'Dell & Grayson, 1998). Technology offers the possibility to create databases and electronic dictionaries with information, but the users must know what they are looking for in order to get it (O'Dell & Grayson, 1998). Technology is an enabler, but there are also other facilitating factors that must be present in order to make an adoption of Best Practice possible.

Companies need to develop a framework for the classification of information in order to organize the information in the same way all over the company (O'Dell & Grayson, 1998). Further, it is important to understand that not all information can be put down in written form and to that the issues are not technical, but rather cultural (O'Dell & Grayson, 1998).

Culture

Culture is a very important factor for a successful adoption of a Best Practice approach. Everyone that is involved in internal benchmarking and Best Practice transfer has to be aware of cultural problems and issues as well as structural design (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b). In order to be successful it is important to understand how people work, what the culture of sharing or not sharing is like and what affects it and if we should award and how, or if we should not at all. Every decision should be affected by the culture and the structure of that specific unit and department (O'Dell & Grayson, 1998). People would like their knowledge and their competence to be recognized and used since this often trigger the motivation of the employees. Knowledge sharing must be encouraged within the company, recognition and motivation to share is a way of doing so (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b; Wellstein & Kieser, 2011). Financial

rewards are not as effective as softer aspects such as celebrations and award from for example senior executives since this trigger a need to be needed within the company. In the longer run, however, it is important that the employees find the work in itself rewarding as well and that they are feeling that they and others are being promoted for the right reasons (O'Dell & Grayson, 1998). Also the structure of the department and the network around it is important to consider, how is it designed and working now, and how must it be changed in order to support a potential adoption of Best Practice recognition and transfer (Jarrar & Zairi, 2000b)?

Measurement

In order to be able to quantify the performance of a practice and the result of an implementation, there must be measurements. Typically, there are two different types of measurements in projects regarding Best Practice adoption and internal benchmarking; measurement of performance of different practices in order to identify a specific Best Practice, and measurement of the impacts of a Best Practice transfer within a firm (O'Dell & Grayson, 1998). It is important to keep in mind that a unit with great performance measurements does not always mean good practices. Therefore, it is important to measure the right criteria in order to be able to get the right results (O'Dell & Grayson, 1998; Wellstein & Kieser, 2011). This is hard for companies, since it is not always clear what the objectives is nor what measurements and data originates from what practice. The measurement as a factor is hence an important part for further discussion within firms in order to measure the right things and do not jump to conclusions without a basis (Wellstein & Kieser, 2011; O'Dell & Grayson, 1998).

Leadership

Management and the leadership are important in adaption of a Best Practice approach as they provide the time, the tools and the motivation for change within the organization. The leadership should be visible and supportive (Jarrar & Zairi, 2000a). In order to be able to show other this support, the managers themselves must be convinced this is a good and performance improving initiative (O'Dell & Grayson, 1998). The leaders can also have a role as external observer, in addition to the recipient and the source of the transfer. This is an important role since it, in addition to being support, also gives the opportunity to learn more about the process itself. This knowledge can later be used in other transfers and Best Practice identification (Szulanski, 1996; O'Dell & Grayson, 1998). Ahead of this, a feeling of support from a quite high-level of the organization to the departments concerned of the change, also trigger a motivation (O'Dell & Grayson, 1998).

2.9 Barriers

Even though internal transfer of practices and knowledge is less hindered by confidentiality than external transfer between different companies, internal transfer can still be tough (Szulanski, 1996). Successfulness in identification and transfer of Best Practices within a company are to a large extent dependent on reduction of barriers that might occur (O'Dell & Grayson, 1998). Different barriers to the transfer have been

identified, including various characteristics as context of the transfer, attributes of the transferred knowledge and the specific situation when the transfer occurs (Szulanski, 1996; Jarrar & Zairi, 2000b). With basis in those different characteristics, Szulanski (1996) identified and studied several barriers for a successful transfer of Best Practices within a firm connected to different characteristics. Causal ambiguity and unprovenness are linked to the knowledge being transfer. Barriers connected to the source of the knowledge are lack of motivation from the source side and that the source is not being perceived as reliable. Regarding the recipient of knowledge, the main barriers are lack of motivation, absorptive capacity and lack of retentive capacity. Last, there are barriers linked to the context; barrier organizational context and arduous relationship (Szulanski, 1996). Szulanski (1996) found that the three most important barriers, also described by O'Dell & Jackson Grayson (1998) are lack of absorptive capacity of the recipient, causal ambiguity and arduous relationship. All these three are linked to knowledge transfer barriers. Indeed, the barriers linked to knowledge are more important than the barriers linked to motivation (Szulanski, 1996). A culture that does not value knowledge sharing as high as personal knowledge creation and expertise and where there is an over-reliance of transferring explicit, but not tacit knowledge, have high barriers to overcome (Jarrar & Zairi, 2000b).

The biggest barrier identified by Szulanski (1996) was lack of absorptive capacity of the recipient, meaning that recipient might be unable to explore sources of knowledge from outside. Even though someone might know a better practice exists, there might be hard to implement it due to lack of resources, previous knowledge or time. The recipient might lack the knowledge required to gain the new knowledge and practices (Szulanski, 1996; O'Dell & Grayson, 1998). Causal ambiguity is linked to the knowledge being transferred from a source to a recipient. It is hard to determine how a practice or a specific factor will work out apart from the source and the knowledge and context existing there. Both the recipient and the source must be aware of that the knowledge is existing or wanted somewhere else, and also be aware of what is required to share it. Knowledge is to a large extent dependent upon the employees' tacit knowledge and the lack of understanding of the tacit component of knowledge is often an important barrier to consider when transferring a Best Practice (Szulanski, 1996; O'Dell & Grayson, 1998).

Arduous relationship is linked to the lack of relationship between the recipient and the source. Transfer of knowledge contains both a tacit and an explicit component (Nonaka, 1994), meaning that a successful transfer is dependent upon a possibility to share those components in a relationship (Szulanski, 1996; O'Dell & Grayson, 1998). Another problem that might occur with Best Practice transfer within a firm is rivalry between units. This is a problem that arises when one unit is hold better and more successful than another in combination with the lack of enough information or motivation for the other units to adapt the practice (O'Dell & Grayson, 1998). The problems that sometimes are associated with transfer and application of a Best Practice approach are often linked to the behavioral nature of the employees rather than the systems being used (Jarrar & Zairi, 2000b). Since, in order to apply a Best Practice approach and to transfer it successfully

within the company, it is important to consider people´s behaviors in different situation and to overcome these difficulties in combination with an understanding of the components of knowledge and knowledge sharing (O'Dell & Grayson, 1998; Nonaka, 1994).

2.10 Analytical framework

The theory has provided a framework for further analysis. The analytical framework is built upon various subjects, origin from different research areas. The first theory area to take into consideration is operations strategy which can be seen from two different perspectives; market-based view and resource-based view. The latter will be used in this study. This resource-based view can be further developed to a knowledge-based view upon the company´s resources and strategy for manufacturing. This knowledge-based view is appropriate in this study since the resources in form of Best Practices to a large extent are based upon intangible resources such as knowledge and practices. Knowledge is also becoming more and more important in our society and in the corporations, as knowledge is a resource that is hard to move externally, to replicate and imitate and is a competitive advantage applying a resource-based view upon the firm. Knowledge can be divided into two parts; explicit and tacit, which both will be considered in the analysis.

In this study, a Best Practice approach and benchmarking will be seen as closely related, as benchmarking can be a way of identifying Best Practices out of good practices or just different practices within a company. The study will be limited to benchmarking of practices within a company. The research will consider benchmarking as a method to compare and evaluate different local (best) practices in order to develop a Global Best Practice within the corporation. Both a global solution, the identified Global Best Practice, and local practices can be used in the organization and it is hence important to identify how this interaction works. External benchmarking as a method to identify an industry Best Practice will not be a part of this study´s scope, but be left to future research. The study will focus on manufacturing processes and how Best Practices in manufacturing interact and are being used through the use of internal benchmarking in order to develop a global solution; a Global Best Practice. Harmonization of processes within the firm is one way to get a comprehensive and coherent manufacturing operation around the world. To work with a Global Best Practice is a way to work with harmonization of processes.

The work with a Best Practice approach and benchmarking as a way to identify a Global Best Practice out of Local Best Practice in manufacturing requires transfer of knowledge horizontally in the corporation. This horizontal knowledge transfer means the transfer of practices and the connected knowledge between different departments in the company working with the same kind of processes, in this case between different manufacturing units around the world. The center of the analytical framework however, is the interaction between the Local Best Practices and the Global Best Practice.

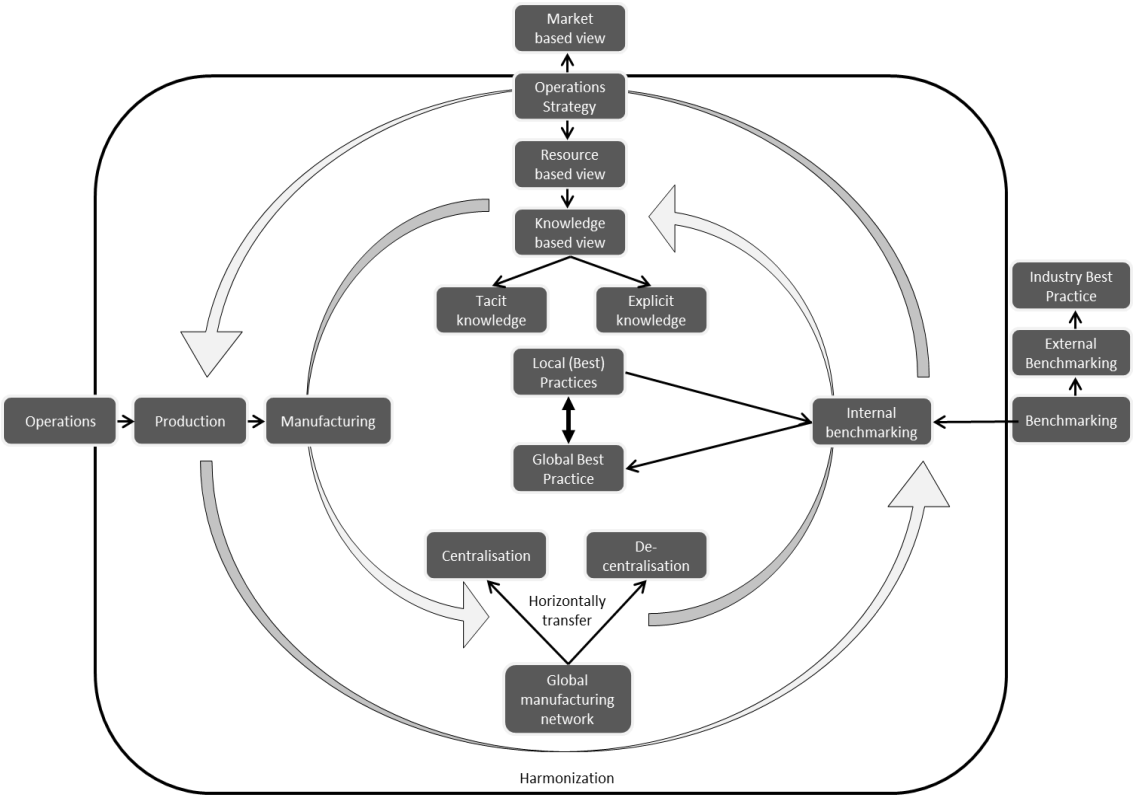

Figure 7 - Analytical framework

As the figure 7 shows; the interaction between Local Best Practices and the Global Best Practice is in the center. By the use of internal benchmarking, Local Best Practices can be used as a contribution when developing a Global Best Practice. The interaction between those two will to a large extent be influenced by the use of internal benchmarking to use the local practices when developing or deciding about a global solution. The Global Practice will influence and interact with the local practices to some extent, but the use of internal benchmarking will have an impact on this thesis focus and approach.

2.10.1 Best Practice transfer process

The analytical framework will be used as a basis for analysis of the Global and Local Best Practice transfers. However, in order to answer the Research questions properly, the Best Practice transfer process must be described at a more detailed level, individually at global and local level, as well as together.

Figure 8 - Theoretical framework: The early stages of Best Practice transfer

The concept of Best Practice

The concept of Best Practice can be used differently depending upon the definition (O'Dell & Grayson, 1998). As the definition of a Best Practice is quite vague, with links to World-Class Manufacturing (Hayes & Wheelwright, 1985) or as an own concept (O'Dell & Grayson, 1998; Wellstein & Kieser, 2011), it is important to understand how the concept is being used. The definition used in this study origins from (Jarrar & Zairi, 2000b; O'Dell & Grayson, 1998; Szulanski, 1996) definitions of the concept; *A practice that has been proven as effective within one manufacturing site that may have applicability to other manufacturing units as well.* This can include World-Class Manufacturing practices, but are not limited to those and those are not considered Best Practices in themselves (Wellstein & Kieser, 2011). Also how the concept link to the overall strategy must be understood, as the manufacturing strategy and the corporate strategy must be aligned (Skinner, 1969).

Searching

Searching is described as the first step in the transfer by Jarrar & Zairi (2000a; b). The transfer process starts when there is a need as well as a demand. A common problem and barrier with the transfer of Best Practices is that both the source and the recipient of the knowledge needed can be ignorant (Szulanski, 1996). Hence, both parts need to be understood (Lu, Mao, & Wang, 2010). Different ways can be used for identification of potential Best Practices, including published sources, networks and site-visits (Jarrar & Zairi, 2000b; O'Dell & Grayson, 1998; Szulanski, 1996). Benchmarking is commonly used to be able to compare different practices or units (Anand & Kodali, 2008).

Different drivers that initiate the work with Best Practice and the transfer of practices within a company have been identified in theory (O'Dell & Grayson, 1998). Those drivers can be connected to different facilitators, which make it possible to transfer knowledge and practices within the firm (Jarrar & Zairi, 2000a; O'Dell & Grayson, 1998). Among those facilitating factors, technology, culture, measurement and leadership have been described (O'Dell & Grayson, 1998)

Evaluation

The purpose of the evaluation phase is to decide the different values of different practices in order to take a decision (Jarrar & Zairi, 2000b). This phase can differ a lot depending upon different contexts and settings (Wellstein & Kieser, 2011).

The evaluation must always be done depending upon the needs and the objectives for the unit or the company (Jarrar & Zairi, 2000b).

The decision taken about a specific practice is seen as a commitment to action (Mintzberg, Raisinghani, & Théorêt, 1976), in this case to start working according to the practice. Some practices then require validation, while others do not (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b).

3 Method

The methodology chapter aims to give the reader an understanding of the conducted research, how research design and methodology were chosen, how data were collected and how the method choices influenced the research in different ways. The chapter also discusses the quality of the research as well as ethical considerations.

In order to properly understand and investigate how Local Best Practices and Global Best Practices are interacting and how they are handled within companies, the choice of main research strategy was qualitative with semi-structured interviews. This generated an understanding of the respondents' own experiences in the field (Bryman & Bell, 2011). The study was carried out in cooperation with Triathlon Consulting Group, Gothenburg.

The study was started with reading into literature, which gave a broad and general understanding of the academic field and previous research. This was necessary in order to be able to perform the interviews. A theoretical understanding of the subject was important for many reasons; example in order to be able to develop the interview guide, but also to be able to follow the discussion during the interview and to ask the right following-up questions as described by Kvale & Brinkmann (2011). The literature were used both before, during and after conducted the interviews. By using both theory and data from interviews the desire was to be able to perform an analytical generalization of the result of the study as described by Bryman & Bell (2011) as well as Esaiasson, Gilljam, Oscarsson, & Wängnerud (2012).

The overall framework of this research was developed gradually, as a result from the empirical findings as well as insights gained from the theory that were being used and found during the study. Since findings in empirical data can show that some additional theory is necessary and the theory can influence the way the empirical findings are found, the framework was a combination of the development and the influence of both (Dubois & Gadde, 2002). This process is described by Dubois & Gadde (2002) as systematic combining; abduction, where the process of developing the research is intertwined; the data collection, analysis and the framework is evolving simultaneously, where the case study can be a part of insight providing.

3.1 Case research

This study is a case research, chosen because case research can be a powerful method to gain new insights that practitioners could benefit from, as they are the end-users of the research (Voss, Tsikriktsis, & Frohlich, 2002). Case research gave the opportunities to study phenomenon that involved different set of factors. As this research involved both physical and human elements within an organization, a Case study gave the opportunity for developing a deep and broad understanding of the specific area (Voss, Tsikriktsis, & Frohlich, 2002; Slack, Chambers, & Johnston, 2010). This study is of explanatory nature,

with research questions including words as “how” and “why”. Especially in such cases, among others, case research is a good choice (Bryman & Bell, 2011).

As there are a number of challenges associated with case research identified in the theory, much time was spent to reduce the risks of the method. Among those can be mentioned that case research in general is time consuming and that good interview skills are needed (Voss, Tsikriktsis, & Frohlich, 2002). With all the advantages of case research and keeping in mind that the method should facilitate the answering of the purpose and the research questions; the choice of this method also resulted in some actions to handle the challenges, among those that the time planning was quite extensive, involving both long hours and long period of time in days, which had an impact on the time spent on the research.

Interviews were chosen as collection method within the case-study. Interviews gave the opportunity for the respondents to reflect and discuss about different events and perceptions, which were important to answer the research questions. This also facilitated a specific focus and gave the possibility for the researcher to make sure a specific coverage needed to get the required information (Bryman & Bell, 2011). In this case, of practical and ethical reasons, the use of interviews was superior to other data collection methods such as observation.

An issue that was considered before the interviews was for the interviewer to be familiar with the environment of the participants. This is important in order to understand the culture and the technical language and the jargon (Kvale & Brinkmann, 2011). In order not to interfere with the potential participants before the interviews were to be carried out, a lot of time was spent at Triathlon Consulting Group as this gave an opportunity to understand the environment and the possible language of the respondents. Informal interviews were carried out when designing the interview-guide, asking about background information on some theoretical areas where a more practical view was needed to understand all specific language variations compared to the academic definitions. In term of the dynamic part of the interview, which concerns the interaction between the interviewer and the respondent (Kvale & Brinkmann, 2011), it is also important to fully understand the practical language, since the interview questions should not contain any academic language that could have a negative impact on the interaction.

In this study, respondents from multiple companies were interviewed in order to be able to compare findings and approaches between the companies. By performing interviews with different companies about their way of working, there was possible to identify common factors as well as to single out certain contributing factors specific to one or a few companies as Bryman & Bell (2011) describe it. This possibility to comparison and the opportunities to identify patterns between different companies, gave the advantage of a broader understanding of a specific problem which various companies face.

3.2 Participating companies – selection criteria

Much effort was put on selecting companies for the study, as those cases should provide the information needed to conduct the research. The participating companies were selected by connecting each of the boundaries/delimitations to a selection criterion. The chosen companies should all meet the criteria given in Table 4. This ensured that the scope and the thesis limitations would stay put.

Table 4 - Delimitations and selection criterion

Delimitation	**Selection criteria**
Large multinational companies – global presence	Swedish companies with > 10 000 employees Present in > 5 countries
Production	Producing physical products and goods
Manufacturing processes	Manufacturing facilities in > 5 countries
Internal, horizontal benchmarking	Definition of Best Practice in this research
Interaction between Global Best Practice and Local Best Practice	Working with benchmarking on a regular basis

The study was limited to large companies (>10 000 employees) producing physical products, operating with global presence. They should be working with benchmarking in one way or another on a regular basis. This study will focus on the interaction between the local and global level within manufacturing processes, focusing on the early stages of the transfer, including searching and evaluation. In order to be able to investigate this connection between global and local level, the investigated companies should have manufacturing facilities in more than five countries. Only Swedish companies participated because of practical reasons such as time and cost limitations.

Another important issue that sets a part of the context of this study was that the study was carried out in cooperation with both Chalmers University of Technology as well as Triathlon Consulting Group. The selection of potential participating companies was done in collaboration with consultants at Triathlon Consulting Group. Also the supervisor at Chalmers University was helping with the work as the selection affected both the academic report as well as the practical findings.

The following companies participated in the study: ABB, Volvo Cars, Volvo Trucks, Ericsson, Husqvarna, SCA and one more company that wanted to remain anonymous. Those were chosen because they all responded to the selection criteria and because the researcher was able to get in contact employees on the companies which had the time and the knowledge needed to be able to carry out the interviews and collect the data needed.

3.3 Interviews

The choice of semi-structured interviews enabled a certain degree of flexibility while still maintaining quite a systematic and structured approach in the interviews. The desired outcome was a set of cohesive interviews, which still allowed the interviewee to pick up potentially valuable information which falls out of the predetermined framework as described by Bryman & Bell (2011) and Kvale & Brinkmann (2011). The number of respondents was fourteen at seven different companies. The question was raised if there was a possibility to ask following-up questions after the interview in order to get some more information if needed and clear things out. For six of the companies, two individuals per company were interviewed which reduced the risk of unjustified biased answers, misunderstandings and misinterpretations according to Bryman & Bell (2011), while still conducting a manageable number of interviews for the given time-frame. At one of the companies, there was only one respondent, which was taken into account when analyzing the data. During the interview, this person was asked to describe his former roles within the company as well. The interview was also longer and focused on both global and local perspectives. This was also considered in the coding of the interview. However, the answers were considered to be enough to be able to include the information in the study, partly because of the respondent's long experience from different positions within the company and the ability to give examples of different perspectives.

The respondents were chosen dependent on expertize in the subject. The respondents were the ones that the companies found most suitable and which had knowledge of Local and Global Best Practices. The official roles of the respondents were different at the various companies, as the roles in this case did not provide a lot information about whether the person had experiences on the field or not. Examples of roles of the respondents were Production Managers, Factory Managers and Lean Coordinators. However, the respondents all had expertize upon the subject that was researched, which was considered most important when choosing the respondents in order to be able to access information. The interviews were about one hour each, including examples and other interesting input.

The possibilities for misunderstanding and misinterpretations (Bryman & Bell, 2011) were handled by the possibility for the company to read through the text and approve it before the analysis was carried out. This was done by all companies in order both of ethical reasons as well as to ensure that the information was correct and correctly understood.

The interview-guide was tested and reviewed on beforehand in order to evaluate the guide and get new approaches to the concept, which was considered beneficial for the execution of the interviews later on (Kvale & Brinkmann, 2011). The reviews were carried out by using the pilot interviews and by read-through of the supervisors at both Triathlon Consulting Group and Chalmers. Two pilot-interviews were carried out with employees at Triathlon Consulting Group, in order to identify improvements in the execution and the design of the interview-guide. Both pilot-interviews were carried out outside of the

study and are not a part of the empirical data, but the information given in the interviews was used to improve the interview guide and hopefully the respondents' experiences of the interviews. Those pilot-interviews were important in order to develop dynamic conversations during the collection of data through the interviews for the study, as they gave the opportunity to practice the competence of the interviewer in the interviews as described by Esaiasson, Gilljam, Oscarsson, & Wängnerud (2012). By understanding this behavior it was also easier to handle the issue during the real interviews (Kvale & Brinkmann, 2011).

Before all interviews the respondents were asked for permission to record the interview. The interviews were recorded to be transcript and analyzed afterwards. This helped the analysis of the interviews and gave the possibility during the interview to focus on other factors to make the conversation better flowing. This also helped improve the validation and verification of the study as described by Kvale & Brinkmann (2011). All respondents approved the recording.

3.3.1 The interview guide

Interview is a method to collect information from respondents, where a lot of the decisions are being made on site, during the interview. For example, this involves decisions during the interviews about following up on leads and experiences or to stick to the interview guide, as well as ethical considerations about the respondent´s privacy, which are factors described by Kvale & Brinkmann (2011). As interview is such an open method, with the possibility to be open for new orientations and mind-sets during the interview, the objective during designing of the interview-guide was to develop a guide that facilitated the possibilities to explore new options and to adapt to the situation fast. The interview-guide can be found in Appendix I. The interview guide was designed to be easy to follow during the interview and to give the opportunity for the interviewer to stay focused upon the respondent instead of reading questions. Much time was spent on learning the interview guide and its structure before the interviews in order to facilitate a focus upon the respondents' answers and to follow them, but stay focused upon the subject at the same time.

Of this reason, the developed interview guide was built up as a tree-structure with potential possibilities as this facilitated quick orientation when needed. There were different areas of interest to be investigated, with questions and sub-areas that were expressed in quite broad terms. Then, for each possibility in the tree-structure, there were interview questions linked to the subject. Hence, the interview guide gave the possibility to during the interviews identify possible good follow-up questions related to each area of interest and the scenario that matched the answers and the situation the best. In such way, the interview-guide worked great as a basis for the semi-structured interviews. It also worked well as a basis for the analysis of the answers since the answers already, in some way were coded and appeared in a specific flow.

3.3.1.1 Topics in the interview guide

Different decision areas within manufacturing strategy have been used as basis for the development of the interview guide, for example is Wheelwright (1984) describing four, among others, areas of interest, namely; The workforce, including the knowledge and skills of the employees, the quality aspect, including monitoring and prevention of defects, planning of production and control systems, including subjects as decision rules and degree of computerization, and at least also the organization aspects with the groups, the structure and the reporting of the organization to different leaders (Wheelwright, 1984).

Hayes, Pisano & Upton (2004) are also reporting about infrastructural policies and systems of an Operations strategy. Those include, in addition to the areas described by Wheelwright (1984), The resource allocation, Measurement and award systems, the Product and Process development systems (Hayes, Pisano, Upton, & Wheelwright, 2004). Those infrastructural decision areas described by Wheelwright (1984) and Hayes, Pisano & Upton (2004) among others, are being linked below in figure 9, to the different topics in the interview guide.

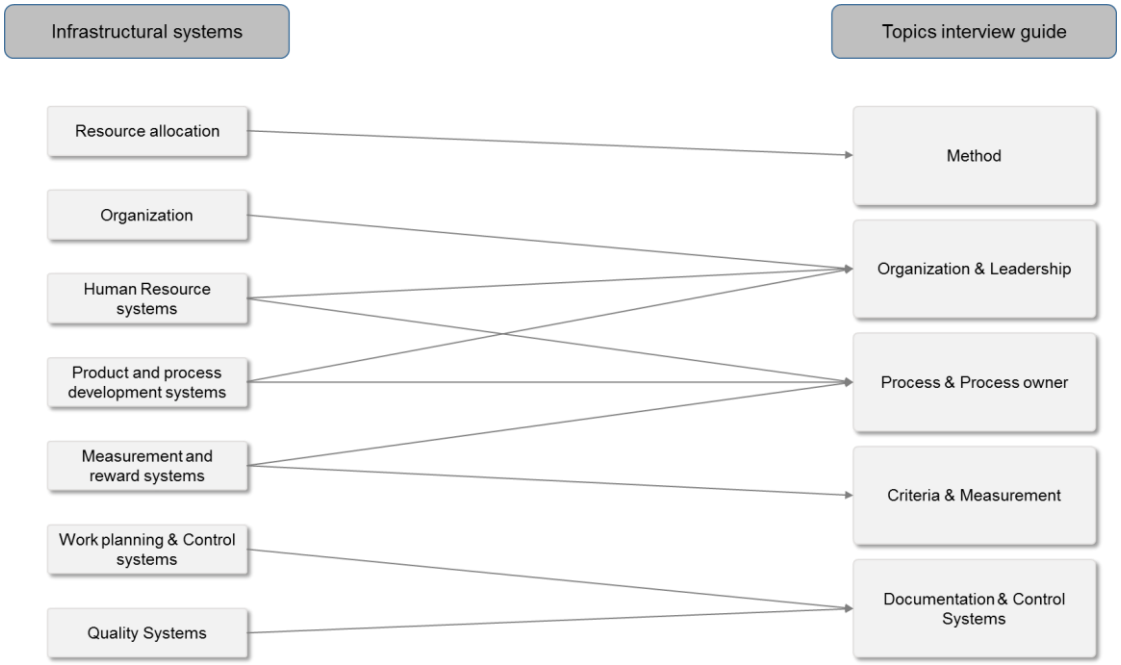

Figure 9 - Links between Infrastructural policies and topics in the interview guide

The identified subjects of interest, in very broad terms were; Method, Organization and leadership, Process and Process owner, Criteria & Measurement, Documentation and control system. The tree-structure of potential scenarios was built up as follows: Identification Process and Evaluation Process, for each of those there was the possibility of a formal process and the lack of a formal process. Those were used as both ways are commonly for companies working with harmonization (Jarrar & Zairi, 2000a). For the formal process, there was the possibility that the formal process in place was followed and the possibility that it was not. For the informal process, there were also two opportunities; that the transfer was handled ad-hoc or that the issue was not handled at

all. This provided eight different alternatives, where two were identified for each interview, one regarding the searching process and one for the evaluation process. The questions being asked were of different kinds and were adjusted to each situation since different respondents required different kinds of questions dependent on knowledge and context.

The areas of interest were developed from the theme of the study and the subjects were discussed and tried out during pilot-interviews in order to see if there was some area missing or some kind of questions that should have been asked in order to cover the specific area in a satisfactorily way. Example of one area that was taken away after the second discussion about the interview-guide was "Communication". This area was taken away as communication was considered a part of many of the other areas and should not been taken as an own unit. Specific questions about this area were perceived partly as repetition of previous questions and answers given to those.

Regarding the other areas, alternatives were discussed and some were emerged from previous areas that were alike but not covered such a broad subject. Some discussions also resulted in that some areas were considered too broad, as this resulted in difficulties to ask questions that were understandable and easy to get for the respondents.

The Method category, as well as the Process and Process owner category, origin from a quite high perspective of the subject, as the description of those are basis for further discussion. This group includes questions to be answered like "what previous experiences have the respondent of Best Practices" and "what resources are being used"? "What knowledge is needed and how is the approach dealt with"? The Process and Process owner category is concerned with the people and departments involved in the transfer of Best Practices. It also includes the systems being used for identifying and evaluating Best Practices.

The Organization and Leadership topic is also related to one of the facilitating factors for a Best Practice approach described by for example O'Dell & Jackson Grayson (1998); Leadership. It is also closely related to the approach of Operations strategy of a resource- and knowledge-based view. The topic of organization and leadership is an important and quite broad area of interest, closely related to all the other topics since it is affecting the process and the decisions being taken to a large extent.

The Criteria and Measurement category is related to different aspects dependent upon if it is regarding the searching or the evaluation process. Measurement is a facilitating factor of a Best Practice approach within a company (O'Dell & Grayson, 1998). Regarding the searching phase, this topic is a lot about what methods being used to identify different candidates and how those candidates are being discovered. Why should people participate and what should they look for, are there any criteria always being used? Is the measurement quantitative or qualitative? Regarding the evaluation process, this topic is a lot about benchmarking; what benchmarks are being used, are there any business criteria linked to a business case?

The topic of Documentation and Control system was originally called “IT and IS”, but the name was changed to “Documentation and Control system” after the pilot-interviews, as this name was easier to understand for the respondents. Technology is considered an important facilitating factor (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b) and must be considered when investigating a Best Practice approach. In addition, explicit and tacit knowledge are being considered when talking about documentation and control system, asking questions about how knowledge is being shared.

3.3.2 Analysis

The interviews provided a lot of data, which is common in qualitative research (Bryman & Bell, 2011). As all interviews were recorded and thereafter transcribed. All work with transcription and analysis were carried out manually by the researcher. The analysis of the interviews was done by firstly coding the transcript of the interviews. The process to break down data into components with names is referred to as coding in theory (Bryman & Bell, 2011). Different sentences and answers were associated with various words. One or a few words were used to explain a longer text in order to identify the core of the answer. The words were however always seen in the context of the whole answer. This way to analyze the interviews can be seen as a sentence concentrator described by Kvale & Brinkmann (2011). The main analysis focused upon the meaning of the answers to different questions and the focus was to capture the core of the text segment.

Some key words were discovered as recurring in many interviews and were used as a basis or a frame for further analysis. Hence, the code was developed during the coding. This development of codes is to be considered as data steered coding (Kvale & Brinkmann, 2011). The reason for this was to choose words that were comparable – for example the word “problems” was used instead of “issues” as those words referred to the same meaning. However, this was not done if the respondent really have highlighted or used the other word explicitly. It was neither done if the context or the meaning of the answer needed another word to capture the core. However, the use of the same words facilitated a comparison of the different interviews and the answers.

Since the respondents used another vocabulary than the vocabulary described in theory, words were coded in order to be able to analyze the different answers. An example of this was the level of which the respondents talked about Best Practices, in this thesis described as global and local level. Words that were associated to the, in this thesis, use of a Global Best Practice, were coded as global association. The same technique was used for Local associated words. Examples of those words are described in the Analysis chapter (see Chapter 5.5). Those words were identified by analysis of the bigger setting in the interview or the specific part of the interview. What was the respondent talking about and what level does (s)he refer to? This analysis of different words and language associated with different levels were important in order to understand the context of the interviews

The words were divided into different steps of the Best Practice transfer towards of a decision of a Best Practice firstly according to the theory and in the analysis according to

the developed model. This classification of the codified words enabled an understanding of the different companies' answers in short form.

However, the coding was not of "either-or" type, but rather a spectrum of different coding could be used for different answers. The interviews aimed to understand the view of the work with Best Practices, which does not fit an "either-or" thinking. Each question could have open answers, but often the answers fell into specific categories, that later could be structured and categorized into some general topics.

3.4 Quality of the Research

Depending on what perspective and paradigm the research has its basis within, different perspectives can be taken upon the evaluation methods and definitions (Kvale & Brinkmann, 2011). To describe the quality of this qualitative research, the alternatively evaluation criteria of Trustworthiness were chosen. When assessing a qualitative research in contrast to quantitative research, there might be a point in using this alternative evaluation instead of the traditional definitions of reliability, validity and objectivity being used in natural science. The reason for this is that such research is often based upon quantitative methods (Bryman & Bell, 2011; Kvale & Brinkmann, 2011). The concept of Trustworthiness still corresponds to the traditional and commonly used criteria of validation, objectivity and reliability and was considered in this study as properly to identify strength and weaknesses in the research. As the interviews in this study partly aimed to identify the experiences and subjective views, not seeing the reality of the participants and companies as totally objective, the concept of trustworthiness is appropriate.

The traditional definitions of those expressions have their origin in positivism, which is a position that arguing that also social science should be investigated with methods used in the natural science (Kvale & Brinkmann, 2011; Bryman & Bell, 2011). Another paradigm that can be used to describe the transferring of natural science objective view upon social research is the paradigm of functionalist view described by Burrell & Morgan (1979). The functionalist framework has been the dominating paradigm within organizational science traditionally; Burrell and Morgan (1979) provided a framework of alternative paradigms to evaluate the research of social science in alternative criteria (Deetz, 1996; Bryman & Bell, 2011). Those paradigms have received critics about the different assumptions and the comparative to the functionalists view, arguing that different viewpoints upon research need other alternatives and evaluation criteria than the proposed (Deetz, 1996). Those arguments are the basis for the choice of using this alternative, corresponding criteria of Trustworthiness.

In this study it was important to consider that there are different views upon qualitative research apart from the positivisms view (Kvale & Brinkmann, 2011; Bryman & Bell, 2011) or the functionalist view (Deetz, 1996; Bryman & Bell, 2011). The lack of objectivity can be turn into an advantage dependent upon what is desirable. The problem of generalization and replication is to some extent reduced by the choice of the alternative

criteria of Trustworthiness, origin from another paradigm than the one arguing that qualitative and social research should be judged upon the same basis as quantitative, natural science. The lack of transparency however, remains. In this study, it was considered more important to protect the respondents´ privacy, confidentiality according sensitive information and potential harm to the participating company and respondents. This has resulted in a research that is not as transparent as desirable, but in the choice of ethical considerations and transparency, ethical considerations were considered more important.

The expression Trustworthiness is built on four different criteria, all parallel to the more traditional criteria of validity, reliability and objectivity (Bryman & Bell, 2011). As Kvale & Brinkmann (2009) point out; validation should be made continuously during the whole research process. This resulted in that the reporting of the different aspects of trustworthiness below are showing choices and considerations made during the whole process.

3.4.1 Credibility

Credibility within the concept of Trustworthiness is related to the concept of internal validity (Bryman & Bell, 2011). The credibility is to what extent the respondents´ reality and researcher´s description of their reality matches (Halldórsson & Aastrup, 2003). This criterion has a lot to do with what is the truth, which is in the philosophy connected to three criteria of truth; correspondence, coherence and pragmatic advantage. The degree of correspondence between the respondent´s reality and the researcher´s construction of the same can be called the correspondence criteria (Kvale & Brinkmann, 2011), and is very important for the credibility criterion within the concept of Trustworthiness.

The criteria of credibility also involves aspects such as the research is carried out in good practice and that the findings of the research is being validated and shared by the participants, often referred to as respondent validation (Bryman & Bell, 2011). Respondent validation facilities credibility to the study as the respondent themselves can make sure that their view of the reality is correctly described by the researcher, the degree of correspondence (Halldórsson & Aastrup, 2003; Bryman & Bell, 2011; Kvale & Brinkmann, 2011). This was done by letting the respondents read through the descriptions of the companies work with Best Practices. The respondents also read through all citations being used as well as the descriptions of such. This enabled that the respondents could make sure that their reality was correctly described.

Important additions to understand the possibilities for the respondents to give feedback; clarifying questions were asked during the interview and the interviews were recorded in order to be able to go back and listen to it again.

An important practical activity in this study, to work with the credibility, was the possibility to make sure that there were a correspondence between the respondents´ views and the description of it. This was made in mainly two ways; first, the respondents were asked if they could answer some following-up questions after the interview. This had two

purposes; to get some more information if necessary and to make sure that the information was correctly perceived by the researcher as described above. However, Bryman & Bell (2011) point out that respondent validation has some difficulties, including possible defensive reactions and the questionable issue if the participants really could validate a researcher´s analysis as it is based upon other information than only the data from interviews. Both those difficulties could result in censorship of the research, which is important to have in mind, especially when working with senior managers of an organization (Bryman & Bell, 2011), which has been made in this case. As the subject of this research was not of personal character, the possible defensive reactions did not raise as a problem. The respondents were also quite used to getting asked questions about processes within their company, both from external and internal personnel, which possibly influenced the absence of defensive reactions. Also the anonymized answers could have been an influencing factor for the absence of defensive reactions.

3.4.2 Transferability

The transferability is parallel to the external validity. It concerns to what extent that the research can draw more general conclusions about the subject (Halldórsson & Aastrup, 2003). Traditionally, a major constraint to generalization is the issues of time and space and as qualitative studies usually do not contain a large sample from different settings over a longer period of time, it can be hard to do a traditional, quantitative generalization (Halldórsson & Aastrup, 2003; Bryman & Bell, 2011). As no real generalization was possible, the concept of transferability, which is about the context of the research, was used. In this research, the approach that knowledge is dependent upon context was applied. No empirical generalization was therefore made. Hence, an analytical generalization (Kvale & Brinkmann, 2011) was done instead, based upon the findings in the study and a description of the context. An analytical generalization means that it is possible to do an analytical consideration of the possibility to get some result in another context, based upon similarities and differences between the contexts of the different situation where the findings should be applied (Kvale & Brinkmann, 2011). This was based upon a rich description of the context in which the study was carried out (Bryman & Bell, 2011). A typical example of such a generalization is a case in court which might be indicative and guiding for future cases, even though those are not exactly the same, neither are the contexts (Kennedy, 1979).

The more extensive description of the context within this study is found in the earlier sections of this chapter, examples of important issues to understand the context are; companies investigated and selection of respondents, including selection criteria of the companies participating. Those criteria were especially important as they are extensions and descriptions of the delimitation of this study, which to a high extent also affected the context and the conduction of the research. For a more specific description of the delimitations and selection criteria, please go to section 3.2. Context connected to the interviews can be found in section 3.3.

3.4.3 Dependability

Dependability in terms of trustworthiness is parallel to the use of reliability in quantitative studies (Bryman & Bell, 2011). Dependability means to be able to track the work of the research. It can be achieved if the documentation of the process is traceable and well described (Halldórsson & Aastrup, 2003). There are some problems with this tracking of the whole method, as it includes keeping record of the whole process. Qualitative research involves large quantities of data and more data do not always provide better information, as it can be hard to find the valuable data (Bryman & Bell, 2011). Another issue raised in this study was the ethical considerations regarding keeping track of the whole process. In this case, ethical considerations were considering more important than full dependability of the study. As some information was considered sensitive and as it could mean harm to the participants and other stakeholders of the study, the choice has been not to share all information even though it meant lower dependability. For example were details, considering sensitive from the recordings of the interviews, left out of the transcriptions if they were considered not to regard the researched subject. Some information and data were for example used as examples, but did not provide any information necessary to understand the subject. This choice could result in difficulties to follow and fully understand the research, but hopefully it should not be any major information withdrawn, resulting in any problems following the flow of the research process and the choices being made.

3.4.4 Confirmability

The conventional view of objectivity is the parallel dimension to confirmability (Bryman & Bell, 2011). Within qualitative research with semi-structured interviews, it is close to impossible to stay completely objective (Kvale & Brinkmann, 2011). Confirmability is more about act in good faith as a researcher and (s)he should not let personal values affect the findings and the conclusions of the study (Bryman & Bell, 2011). The data could not completely be separated from the researcher as (s)he has selected and analyzed the material. However, it should be possible to track analysis and fact back to the source in order to be able to identify to what extent it has been affected by the researcher´s personal values and beliefs (Bryman & Bell, 2011; Halldórsson & Aastrup, 2003). Thus, even though objectivity neither was desirable or possible in this study, the results and the analysis have been secured from major personal values interruptions by for example keeping track of what is data from interviews, what is coding and what is the analysis of the findings. The presentation of each company's view upon the Best Practice approach and transfer in the empirical findings, will hopefully makes it easier for the reader to track the analysis back to source.

3.4.5 Ethical considerations

Ethical considerations have been carried out during the whole work as ethics applies to all involved in the research, including the researcher, influencers and participants (Sekaran, 2000). Ethical considerations were discussed before, during and after the data

collection with basis in theories about ethics and possible scenarios in interview studies from example Sekaran (2000), Bryman & Bell (2011) and Kvale & Brinkmann (2011).

As ethical considerations occur during the whole study, possible ethical issues should be taken into consideration already when starting the research (Kvale & Brinkmann, 2011), of this reason a simple ethical protocol was developed and possible issues were added along the way. Because the protocol itself contains some sensitive information about issues to handle, the protocol will not be shown here of ethical reasons such as anonymity and possible sensitive information of both researcher and participants. Some issues raised will be described in short and anonymous below.

Ethical considerations were done already when contact with potential participating companies was taken. One of the identified companies that met the selection criteria was deselected as its production in one specific site was to be shot down. This was considered as a potential harm to the potential respondents as the area of interaction between Local and Global Best Practice in production could, to a large extent, be a sensitive subject to discuss after information about shutting down a factory.

All respondents gave informed consent. As much information as possible were given to the participants on beforehand and if any issues raised along the way, this information or question were given after the interview, giving the opportunity to withdraw the participation in the study. Also confidentiality issues were raised and taken care of, in this case, the degree of confidentiality were linked to some extent to the informed consent, for example regarding who could get access to the information given in the interviews. Also consequences of choices taken along the way and consequences regarding what potential participants to contact were evaluated in order to make sure that the advantages were bigger than the disadvantages and possible harm to participants and stakeholders to the study. Another issue that was raised in this study regarding ethical issues was the researcher´s role. In this case, that was an important issue considering that the researcher was collaborated with two stakeholders; Chalmers University of Technology and Triathlon Consulting Group. The researcher was working full time with the research in order to prevent other projects to influence the work.

Ethical considerations especially relevant in this study include for example sensitive information in the interviews and the problem with anonymity of the respondents. The consideration of sensitive information in interviews was especially important as the study was being carried out in collaboration with Triathlon Consulting Group as well as Chalmers University of Technology. This collaboration was carefully pointed out when the first contact was taken, as well as before the interview. This was especially important as some information might be of confidential or sensitive nature. To inform the participants that the information could, to some extent, be shared with employees and supervisors at Triathlon as well as the supervisor and mentor at Chalmers University of Technology. If some information was pointed out as sensitive during the interviews by the participants, the information were not used in this thesis but used by the researcher to understand the bigger picture. Information that after the interviews could result in any

harm to the respondents or the participating company was at first also excluded from the data analysis. After this, the specific participant was asked if the information could be used if anonymized.

During the development of the interview-guide, consideration was taken into that no question or area of interest could be received as abusive or sensitive, as this kind of questions could have resulted in harm to the participants. This harm could be in form of harm to the self-esteem or self-respect of the participant (Sekaran, 2000; Bryman & Bell, 2011). In order to further prevent this, two pilot interviews were carried out. After those interviews, the pilot respondents were asked if they received any question as abusive, sensitive or if they felt stressed during any part of the interview. The pilot-interviews could hence be seen as an activity in between of the planning of the interviews and the interview situation (Kvale & Brinkmann, 2011), aiming to identify possible harm to the real participants and prevent this from happening.

All respondents were informed clearly about the study and the aim of the study. As the study mainly is based upon interviews, there was not likely that any harm to the participants would occur since all participants were clearly informed, both verbal and written, about the study and what the information would be used for.

4 Empirical findings

In this chapter, the empirical findings will be presented company by company. The findings for each anonymized company will be structured according to the early stages of the transfer process described in the theoretical chapter; the concept of Best Practice, searching and evaluation of potential Best Practices, all shortly described below.

Figure 10 - The Process of Best Practice transfer

The concept of Best Practice

The concept of Best Practice involves what definition of Best Practice being used at the company, how it is being used as well as the reasons for the company to work with this concept. As the concept of Best Practice can have different meanings in different contexts and is being used differently by different organizations and persons (O'Dell & Grayson, 1998; Hayes & Wheelwright, 1985; Dangayach & Deshmukh, 2001; Wellstein & Kieser, 2011; Jarrar & Zairi, 2000a), this is important to understand before describing the further process.

Searching

The searching phase covers the first step (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b) of the Initiation phase described by Szulanski (1996). This step includes the identification of potential practices for the development of a Best Practice (Jarrar & Zairi, 2000b). Different sources of information and input can be used in this phase in order to identify a potential Best Practice (Jarrar & Zairi, 2000b), which will be described.

Evaluation

The step aims to decide the value of different practices (Jarrar & Zairi, 2000b). The evaluation stage covers the second phase (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b) of the initiation described by Szulanski (1996). This phase is very specific for the context and the different needs (Wellstein & Kieser, 2011). As only some practices require validation and the validation process differs a lot between companies and their practices (Jarrar & Zairi, 2000b), a potential validation of a practice within a company is described in this step of the process, even though it can be argued to belong to a later stage in the initiation phase (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b).

4.1 Company A

At company A, Best Practice is connected to the work with standards as well as benchmarking. By working with Best Practices, company A provides a basis for further improvements of the operations. In order to identify potential Best Practices, different methods are combined such as continuous work with improvements, networks of different kinds and relationships between individuals. Decisions about change of a standard in connection to the manufacturing is taken at lowest possible level in order to create an ownership of the process.

4.1.1 The concept of Best Practice

The concept of Best Practice is linked to the concept of a standard as well as benchmarking in Company A. The objectives for the use of Best Practice are to have a basis for further improvement as well as to achieve predictability of the processes. It does not matter if the standard is the best possible. Standardization provides an opportunity to predict the results and the outcome of the processes and give a basis for further improvement. To combine a standard with a successful and good continuous improvement process can generate good practices. In manufacturing, it is important to always improve, since good today does not necessary mean good tomorrow. To always improve is the key.

Company A is working with Best Practices at different levels within the organization. There must always be a balance between flexibility, creativity and standardization. This balance is handled by always following the standards, but the standards can be changed and improved. This can be done in different ways dependent on the topic.

IT is considered important for the work with standardization and sharing of knowledge between sites, which can also be a bottle-neck since there is a lot of information that needs to be processed.

4.1.2 Searching

Formal systems are used for sharing quite high-level improvements and practices, while informal relationships and networks are used to share more hands-on knowledge between the different sites. At factory-level, the processes of improvement and to share knowledge are being targeted in order to make people contribute to the overall knowledge base and to the improvement work.

What initiates the identification of a potential Best Practice is often continuous improvement work or that some problem has occurred. Hence, a need for a solution is driving the identification. The identification itself can be made by highlighting some improvement being made, site-visits at other plants, benchmarking and the use of networks of individuals. The networks enable personal relationships between people, making it easy to make contact or come visit when a problem has occurred for example. The site-visits provide a smorgasbord of potential Best Practices, where some can be

chosen to be brought back to the other plant and in some cases adapted to the specific context there. Also global experts could be used in some cases.

It is important to have relationships and the right contacts between the factories in order to be able to solve problems together. Those relationships also facilitate transfer of improvements, as those relationships are used to share knowledge between the plants. Phone calls between people with the same role at different factories provide opportunities for sharing of practices and knowledge as well. There are also some trips to each other's plants taking place. Company A is trying to benchmark between factories for some specific topics, for example regarding bigger change in a process, a new process or a specific problem. It can also be a field trip to discuss more in general, to find improvement done at the different sites in order to improve all factories and learn from each other.

At factory level, Company A has a process for sharing information between teams of operators, used when a function/department/team or other get a new insight. There is a target for each team of operators in the manufacturing to mediate learning to others. The team escalates the improvement/lesson to the production leader and to the production manager, which anchors it in the management team, who decides if it should be shared to the rest of the plant. This is mainly a process internal for each plant.

By targeting the improvement-work and how many improvements of standards should be done, Company A creates incentives for the operators to raise improvement proposals as it is then a part of their job description. This ensures that people share their knowledge and their ideas of improvements. Another way to make people contribute is by highlighting the company as a unit, where all plants contribute to the success and future development of new products.

Each team has the mandate to change their own standards. The team must work according to the standardized way of working, but they are free to improve and change their standard. If there is a small improvement idea, a common way to approach it is a temporary change of the standard to try the new way of working. If it works better, the standard will be changed. It is considered important that the improvement work goes fast, with fast improvements and changes in standards.

It is important that everybody follows the standard, as standardization is considered as a basis for further improvement. A standardized way of working also provides an understanding and the same language and knowledge for people, both within and outside the team and department.

There is also a process being used when something goes wrong, for example when a quality issue arises. This information and a potential practice that prevent the quality issue are shared in a database between the plants. Usually some function is responsible for sharing the information in order to prevent the same problem from occurring again.

Bigger issues are often brought up for discussion when a problem has occurred or when some change is taking place. Benchmarking and sharing of knowledge on a lower level (not the manufacturing system based upon Lean for example) are often reactive, but some initiatives are being proactive as well.

4.1.3 Evaluation

The evaluation of a practice is facilitated by the experience and knowledge of the decision makers. In cases when quantification can be made easily, this is also used as a basis for decision. The decisions about changing a standard are being put down at the lowest possible level in order to make the operators and the users feel ownership of the standard, which is important to make them follow and improve it. Smaller changes are often being tested before a decision about changing the standard is made. The tests are afterwards validated and evaluated again, compared with the old practice, and a decision is made if the change should be documented or if the old version worked better. A decision could also be that the new practice should be improved further.

Smaller improvements are often evaluated using experience. It is more important to take a decision than to have all data. It is important that the feedback loop is fast, as it is making the improvement work fast as well; continuous improvements. People with a lot of experience and knowledge can often determine the potential of the idea. By testing the idea and changing the standard temporarily, the new way of working can be compared to the old standard. Some improvements can be hard to quantify, even though quantitative data is used as much as possible. Speed and the possibility to give quick feedback on a smaller idea is more important than to have all data for a decision. Gut feeling and experience are often used for evaluation at lower level.

By letting the operators and the team have ownership of their standards, there are incentives for the team to improve and develop the processes they are using at an everyday basis. By owning their standards and deciding on a change, the motivation to work according to the standard increases.

The manufacturing system used (based upon Lean Production/Toyota Production System) is connected to Best Practice as it can be seen as an overall, high-level Best Practice, as it is a system for how to work in manufacturing. How to run the production is decided within the system, and it is the same world-wide. All factories should be working according to the manufacturing system. At a lower level, there are different plants with their own processes and ways of working. For more high-level practices there are people responsible for updating the documentation and the system with the actual practices and learning. This is also done at lower levels for changes in standards and other, where the team decides and is responsible for updating the documentation.

By the use of experts within specific areas, knowledge regarding for example quality issues or manufacturing engineering processes, can be set as global standards, shared between the different plants. Those practices are often quite high-level or are regarding

specific issues that require specific expertise and functional support in order to be successful.

4.2 Company B

Company B highlights the dynamic aspect of Best Practice. The concept is associated with standards as well as improvements. To work with a Best Practice approach facilitates to work with the same structure while it also provides a basis for improvement. The company often works problem-driven, trying to find the best available solution. Company B's work with Best Practice is also being driven by improvement. The company uses benchmark of KPI, networks of different kinds and experts trying to identify potential candidates for Best Practice. IT is often involved, especially at a global level. Business case and applicability at different sites should be the basis for evaluation.

4.2.1 The concept of Best Practice

Company B associates the concept of Best Practice with standards as well as to improvement. A Best Practice is seen as a practice that improves the way of working. The concept is also connected to the work with benchmarking and is seen as a dynamic state, as the way of working always can be improved. Hence, the slightly softer concept of Good Practice is also sometimes used. Company B is continuously looking for Best Practices.

The objectives to work with Best Practices and harmonization of processes are that it provides a common structure among the different plants as well as it provides a basis for further improvement and for making sure that the KPIs are reached in a consistent way. A common structure regarding both practices and organizational structure makes it easier for persons to make contact with the right persons in another plant if necessary. Company B is working a lot with documentation of the processes, making it possible to share process designs and way of working. By the use of master documentation and having people responsible for keeping it updated, harmonization of processes is made possible. When an update is made, this is documented and can be implemented in all plants.

4.2.2 Searching

When a problem or a KPI deviation in some process occurs, the company benchmarks other plants through different networks. The networks also provide relationships between different people, which make the contact easier when a problem occurs. The search for alternative ways of working often starts in special events such as organizational change, both regarding the existing organization or a new part of the organization. Emerging problems and improvement work can also initiate identification of potential Best Practices.

The identification often includes KPI benchmark between different sites as this is a potential way of discovering potential good practices. Also global experts in different areas can identify a good practice that could be applicable elsewhere. If the global experts

find some good practice, they will discuss with other plants in order to be able to implement the practice in the other plants as well. When the practices are softer to its approach, for example regarding problem solving, there could be some difficulties with quantification of the alternative practices. Then a discussion about different subjective aspects will take place. If the practice is easier to quantify, a business case should be built to show the results and the impacts of the different practices.

The networks also provide a lot of information about potential improvements and practices that could be used. When a change is discovered in a process, the process is being compared to the standard documentation. If the way of working is better than the existing, should the improvement of the process also be implemented in the other factories and is it applicable in the other plants? If the new process is not as good as the standardized process, or if it should not be used for other reasons such as it is too expensive or a bigger change in the system is required, the older, standardized process should be used.

By the use of a government structure, practices and issues can be escalated to the right forum and the right meetings. If a problem has occurred in a plant, this often drives a benchmark of practices. The first step is always to look at the process map, if there is a solution, which is being used. By doing so, the process follows the global standard. If there is not an existing solution in the process map, a discussion will take place, where a solution will be discussed and hopefully planned and prioritized to be developed. Those discussions also include whether the solution should be used locally at the specific plant, or implemented elsewhere as well, when applicable.

Commonly used process and IT systems facilitates the work with Best Practices. Common systems make the overall costs for IT lower. Since the costs for changing the routines and the system are high, the different plants do not change them by themselves. Hence, the work with harmonization and Best Practices are facilitated. When it comes to areas where IT not is involved as much, the different plants are supporting each other as well. On the other hand, the work with Best Practice in such processes tends to be at a higher level, often regarding policies and overall processes, rather than in details. Each plant has the possibility to create its own practices at a lower level in the production, as some practices need to be adopted to fit the specific context. The challenge among those practices is to find the ones that can be applied world-wide in order to standardize the way of working and achieve synergy-effects.

In general a common system provides the same language and terminology; a common structure. This enables support for Best Practice sharing, as you have support from the systems when implementing the new practice.

When discussing Best Practices and harmonization between plants, involved people can for example be key users of the process, process owners and other participants in the process networks. The question will be discussed cross-functionally in the local plants.

The cross-functional team decides upon a process change and if a system change is required, a request will be filed.

When the factories have questions, the regional support functions are being contacted and the questions will be escalated to the right forums and networks. The process owners in the regional function will work with the issue of how to solve the problem. An alternative is that an improvement project has a great idea that could be implemented in all factories in order to improve the overall processes and achieve a new harmonized process.

4.2.3 Evaluation

The evaluation about a Best Practice is to a large extent taken in discussions based upon business cases and the applicability to different plants. If there is an opportunity to use the same practices and processes in the different plant, this should be done. The evaluation and the background work are primary done on beforehand, while decisions often are taken during the meetings. The evaluation also take competence on the different sites in mind, as some plants might need some training in order to be able to execute the new or improved practice.

When taking decisions about processes influenced by the IT system, the decisions are to a large extent influenced by the design and the use of the IT system, as the cost for bigger changes is large. IT is not only seen as an enabler, but also as a road-block in some aspects, as it takes some time to change the IT system as well as some processes are developed based upon the system rather than the other way around.

The validation of a practice or a change in the process is done in cross-functional meetings. This is done in order to make sure that the process works for every function and the other processes being used. Improvements of the processes are sometimes being proposed during the meetings as well.

Functional teams should be able to establish Best Practices among the different plants. A common organizational structure, with key users, process owners etc, makes it easier for this transfer to take place. The functional teams are meeting each other on a regular basis to share knowledge and to have discussions. Those networks fill an important role in the sharing of Best Practices among the different factories, especially regarding practices that are not as dependent upon the IT-structure.

4.3 Company C

Company C is working with Best Practices on different levels within the company. The use of the same IT system is a driver for Company C to work with harmonization of the processes globally. On local level, the Lean Network is often used to facilitate Best and Good Practice transfer. Improvements are often used for identification of potential Best Practices. An evaluation of different potential practices is done by building business cases and by discussing the applicability and the practice’s connection to the strategy.

4.3.1 The concept of Best Practice

Company C uses the concept of Best Practice quite often in terms of an area with good performance with practices that someone else can benefit from using. In some ways those practices can be seen as new and ground-breaking ways of working. Good practice is also used as a concept, with a bit of a softer meaning, as best in one context does not necessarily mean best in another.

Production processes, compared to administration processes, are often controlled by the IT environment. This can make the discussions about Best Practices a bit more concrete compared to other processes that are less controlled by the IT. The use of the same IT system is a driver for working with harmonization, since a certain way of working is required and forced by the system. The objectives for working with standardization and Best Practice sharing is to some extent related to this; it is a basis for improvement of the overall company, it can result in lower costs and it enables benchmarking between sites. A common IT system simplifies the sharing of Best Practices. IT is hence both a facilitator and a driver for working with harmonization and Best Practice sharing.

The work with Best Practices and harmonization is done at different levels; globally, where it is often connected to IT, and locally where it is often connected to the work with Lean within the factory.

4.3.2 Searching

The identification of a potential Best Practice can be initiated by the continuous improvement work and some good ideas coming from there. When a problem has occurred at some of the departments within the factory, the work with Lean can work as a bridge between departments. This facilitates identification of a solution or a potential Local Best Practice. If there is a problem at a department, other departments might have a solution for that specific problem.

The work with Lean can encourage the departments to take contact with each other and discuss specific issues and potential solutions. Also a product change or the strategy can initiate the identification and search for a Best Practice and sharing of such a practice or idea.

Because the company is big and built up of different divisions with different backgrounds, the sharing between sites can sometimes be hard. As the company moves towards becoming more centralized, there is some resistance to adapt to the common structure and way of working. This resistance also encourages the individual divisions to show and to lift up their own way of working when developing a standardized practice for the whole company, as they have to adapt to another practice otherwise.

There are process networks, built up globally and having central steering and control. Sharing of potential practices for a Global Best Practice is usually done in those networks. The question about if the practice is already implemented somewhere or if the idea is completely new, has a large impact on the process of how to identify and evaluate the

practice. The process of doing so is quite formal if the practices are new, and quite informal if there is an existing practice. It depends on if there is a new development involved or if it is just a configuration or sharing of information. It is mainly in the networks some clues about a specific expertise area for one department can be given if there is no direct problem or a bigger change in the IT system. Practices that origin from improvement tend to be shared more informally than practice sharing initiated by a problem or a change in product portfolio. When developing such practices to share globally, the practices are to a large extent based upon the system.

The operators on local level are very involved in the improvement work, as it is the basis within Lean Production to work that way. All operators belong to an improvement team and have daily meetings within their area. On a local level, the sharing of Best Practice is done within the improvement work. On a global level, the sharing of Best Practice focuses on how to share information about Best Practice rather than sharing the Best Practices themselves. The local teams have the mandate to change their own standard, even if the mandate has some limitations, for example regarding changes in the IT system. In most cases, the local plants have some standardized basic level of what their working process should look like, but smaller improvements are rarely escalated to a higher level. If a problem should occur at another department, some coordinator might for example recognize the solution elsewhere and communicate that to the department.

On a local level, the escalation of a potential Best Practice is in different directions dependent upon what kind of practice it is. For example, the practice can be escalated to the local technician, the local process network or, in some cases, also the global process network.

4.3.3 Evaluation

The evaluation of different practices is usually done in the process networks. Usually there are discussions about whether the practice is applicable for the different plants and potential implications to other practices or processes. Also the strategic direction and how well the practice fits the strategy are discussed. The business case and the strategy are always in the center and have the main impact on the final decision. If a common decision cannot be made in the first layer, it will be escalated higher in the hierarchy. The business case is done on beforehand and should show the impact of implementing the practice. Often, this business case can only be done upon the own function and in order to build a strong business case, it has to be escalated higher up. In the case with a Global Best Practice, those discussions work as a sorting out function before decisions should be made on a global level, in the global process networks.

The real line between a global level change and a change at a local plant, is if there is required a change in the IT system. If a change in the system is not required, Local Best Practices are rarely being escalated to a global decision about a Global Best Practice. If IT-supported functionality is needed in the practice, the drivers for documentation and

sharing are higher. When it comes to ways of working or other, softer aspects, the sharing to other departments and plants are more dependent on each individual.

Company C is working process oriented and not only organization oriented, especially regarding improvements and the work with continuous improvements. Hence, in some cases, the sharing is delimited to the specific area or department. To identify gaps, Lean is used with workshops, trainings and improvement groups. By this, needs and solutions can be matched by the communication between different departments. Even if this work is quite formal, the identification of gaps is sometimes dependent upon individual persons and their knowledge about different practices and processes.

4.4 Company D

Company D is working with standards to provide a basis for the work with finding and adapting Best Practices, which are describing the best possible design of a practice or a process. Change of different kinds as well as improvements are often initiating the identification and evaluation of Best Practices. Company D works with benchmarking, experts, improvement for example to identify potential practices. The different potential Best Practices are often discussed within networks and KPIs are compared for evaluation.

4.4.1 The concept of Best Practice

At Company D the concept of Best Practice is used to describe a process or a way of working that is the best possible way to operate in. A standard on the other hand, is more about doing things in the same way. The objective of working with standards is to provide a basis for improvement as well as to establish a common structure within the company. A common structure within the company results in recognition and a feeling of security for the employees. This could be beneficial when for example moving people to another site as well as when the operators conduct a working process. A common structure makes it easier to improve the overall processes and to share knowledge and practices between different units and departments.

As the work with standards provides security, the people could be more creative than if they felt insecure about their work. If you feel secure at work, you could be more open with sharing ideas and potential improvement with others. Hence, standards provide a basis for working with transfer of Best Practices and sharing of knowledge.

At a local level, the operators within the teams have different roles in the group. This has resulted in good incentives for improvement and creative ideas, but at the same time resulted in many differences between shifts, units and plants. This is always a balance that must be handled.

4.4.2 Searching

The search for candidates for a Best Practice could be initiated by a change of any kind, for example an organizational change or changes in the product mix. A change in the

organizational structure can force the identification of Best Practices as it can result in that some processes need to be more effective. If the design of a product is being changed, a new practice of how to manufacture it must be found. Improvement can also be a basis for identification as a proven improvement can be used as a new standard or practice, which could be spread to other teams or units as well.

Identification of a potential Best Practice can be done by benchmarking KPIs for different units and compare their practices. It can also be done by discussions about advantages and disadvantages in a group of people both within the factory as well as on a higher, global level. Quantification is easier when it comes to harder, technical processes. If the practice is softer it is not as easy and it could be easier to discuss it rather than trying to quantify it. Those practices can also be easier to share as they are, in some ways, easier to describe in documentation. Technical processes associated with the machinery being used often provide a lot more quantitative data, but this is not always being used depending upon how big the change is. The technical processes are not being used at different plants as the machinery might differ between the factories as often. The globally used practices are often more high-level and more applicable to different settings than machinery specific practices.

Within the operators' teams, there are different roles. Those different roles focus on different things and when meeting with other people with the same roles, well-working practices can be identified, discussed and shared. Those roles facilitate that smaller improvements can be recognized. However, a problem with smaller improvements not resulting in a big difference in output or outcome, can be hard to implement. The reason for this can be that people do not like to change for something that does not provide so big improvement.

Company D is working with a global organization, which contains experts within different areas. Those organizations have networks and education in different aspects of the manufacturing. In those networks, with the help of the global expert organization, practices used at different sites are discussed. When the networks with people with similar positions meet, they often discuss Best Practices based upon case studies presented. In addition to that, also some external benchmark is presented when applicable. As different practices are presented and discussed, it is possible for the local plants' representatives to choose the practices they think are the best and bring them back to the local plant for further discussions or implementation. The global networks provide an opportunity to take part of a palette of different potential Best Practices.

The networks and educations are also an opportunity to meet people that are working with the same questions. In that way, they create a contact interface between departments and plants. When the initial contact is taken, it is easier to make contact when needed, for example by calling.

The networks' meetings are initiated and organized by the global organization. The global organization includes global experts that could help the local plants to further develop

and share their practices. As the global experts come visit the local sites on regular basis, they can also help identify practices that could have application in other plants as well. They also provide external benchmarking results that the local factories do not have the resources to carry out themselves.

Also by moving people around, both locally within the factory, and globally between sites, practices could be identified as a potential Best Practice. People can be moved from one team to another within the plant if another team needs the resources. Team-leaders can also work at each other's shifts in order to found potential improvements and differences in working. At a higher level, people can be located abroad for some years in order to gain experience from another business and culture.

When a practice is identified within a team at one unit, it is discussed by the team-leader and the production and process technicians in order to potentially later change a standard and roll out the practice or improvement of a practice further. Those practices can be kept by the use of agendas for meetings, where one point is discussing improvements and practices being used. Bigger changes are being discussed by production leaders and brought up to the global network if it is an area that is in focus for the meeting. Hence, the plant management is bringing the practice up to a higher level in order to share the knowledge and transfer the practice to other plants as well.

4.4.3 Evaluation

Regarding smaller practices, quite hands-on, within each factory, the evaluation of a practice is often done by discussing and interviewing the operators. The first step is trying to identify how the work is actually carried out, then a discussion between the shifts is carried out in order to get a documentation of the actual way of working. If it concerns a machinery issue, or a bigger part of a process, a group responsible for evaluation could be used in order to really understand the problem and the practice. The focus is first to find a common way of operating and then improve it. Hence, testing and validation is being used. Also benchmarking of KPIs between different practices could be used as evaluation when it is applicable.

The decisions about what is considered a Best Practice globally are taken at the forum, after the discussions. Even so, if the needs for individual plants require different focus, the individual, local plants can decide on their own what to focus on at the moment. They are doing their own prioritizing of focus areas. The practices proposed in the networks can be seen as a smorgasbord of good practices that could be used to improve the business. At the global forum, case descriptions are often presented, this provides some data used as input for an evaluation and a decision.

4.5 Company E

Within Company E, benchmarking and improvements are both used and associated with Best Practice. The work with Best Practices provides a basis for further improvements. By the use of networks, meetings, trips to each other's plants and a global function, it is

possible to identify potential Best Practices that could be transferred. At the local sites, after an experience and knowledge-based evaluation, the practices are often tested and thereafter improved. From a global perspective, the objective is to provide a frame for the processes and the manufacturing system. Best Practices can be used both at a global and local level.

4.5.1 The concept of Best Practice

At Company E, the concept of Best Practice can be used for various levels; from smaller local process improvements to large and global initiatives. A Best Practice can be seen as built up by individuals, processes and tools. The concept of Best Practice is closely connected to the idea of benchmarking. If one unit does something that works well, other departments and units can look at it and try to use it themselves. By doing so, knowledge can be shared among different departments and improvements can be used at various sites. This can for example include benchmarking-trips in order to find and share good practices. The concept is also associated with an improvement for the company and seen as something new to the unit.

In order to lift all units, Company E applies the Best Practice approach and is working with transfer of Best Practices. A Best Practice approach can generate a common basis and framework for further improvement, where good examples and improvements can be used as inspiration for other units. By working with global initiatives, all units work according to the same framework and from the same basis, which provide a minimum level for the overall company. Best Practices can be used in order to use resources in a better and more optimized way.

Even though company E has different kinds of activities in different divisions, the global strategy must be implemented at the different units. Even though there might be some cultural differences, the problems often are the same no matter where in the world the unit is located. Different practices can be transferred and compared to each other, with basis in needs of the individual plant and its function.

4.5.2 Searching

Problems are often the catalyst to start searching for practices that could be used as solutions. If some unit has a problem that the other units might have a solution to, or a practice that could be used to prevent it, this can be transferred to the unit. Company E is looking at different potential practices that might exists in the network, analyze them and choose the one they find best fitting their local context. When there is a global initiative, identification of potential Best Practices can origin from larger improvement projects.

The units are parts of a bigger network, with representatives from different sites and divisions of the company. In those networks, benchmarking trips are carried out, information is shared and different topics are being discussed. Those networks also provide relationships between participants, making it easier for them to make contact with the others when needed, for example by calling them when a problem has occurred. The

discussions can also work as a way for the participants to start seeing their own function from a new perspective and to benchmark certain practices against other practices used elsewhere.

When contact between individuals is established in the networks and by the different trips, the contacts are often being used to take further informal contacts when needed. Problems and improvements can hence be discussed over the phone for example.

Documentation of the benchmarking trips and different improvements is done in order to share the knowledge and the lessons learnt with others, not participating at the specific event. Even if it is documented, knowledge and practices are often communicated to others on an individual and informal basis. When a person comes back from a network-trip or a discussion in the network, (s)he notifies people (s)he thinks could have interest in the information. This could be done by email, phone or face-to-face. Hence, the decision who might be interested is done by the person sharing the knowledge.

Improvement is also a starting point for working with Best Practices, especially at lower levels. The operators are working on a weekly basis with improvements of their own processes. The objectives of the improvement-work should optimally be linked to specific KPIs in order to be able to measure them. The team has the mandate to decide what they wants to work with, but there are often some focus areas of the improvement work. The improvement-work is a part of the operators' work description and it is during those sessions good practices could be lifted up to a higher level. Time is being reserved for improvement work to makes the operators focus on improvement and to involve them. Groups that have done a good improvement job are being recognized both locally and globally.

To gain such an award, it is important that the improvement project is carried out correctly. The root cause must be found in order to prevent resources to be used to treat a symptom. The projects should provide further learning and provide great results compared to the objectives for that unit or that process. Such impacts of the improvement are being followed up continuously in order to make sure the new process is being sustained.

Best Practice initiatives can also be initiated by a need or requirement to use a tool or a support in a more optimized way. Such support could for example be the IT system. The initiatives that are including different functions within the company and are quite high-level, such as a Lean initiative, are initiated from a global level.

As the company is large, with a lot of different knowledge within the company, there exists global Experts that could help facilitate Best Practice sharing as well as Best Practice identification and implementation.

4.5.3 Evaluation

Experience is often the evaluation basis for potential Best Practices. If the practice sounds like a good idea, the practice will be tested and later validated to observe of the practice has had any result. As an improvement and the implementation of a practice should work as basis for further improvement, it is better to implement the practice, even though it is not completely ready and improve it further from there. During the implementation and the work with the practice, it will be improved and better fitted into the specific context. The context is important within Company E, as there are different settings in different factories and divisions.

The decisions about what can be considered as a Best Practice at each site are done in meetings at the individual sites. If there is a good practice that could be used by more local teams or in the whole factory, a decision about implementing the practice is taken there. In those discussions production leaders, production manager and sometimes some other functions are involved, dependent upon the practice nature.

Taking a higher perspective, the global strategy is implemented all over the company. The factories are thereafter quite independent to improve their own plants and to choose the practices they think would work best. Hence, those Global Best Practices provide a framework for all units. Ownership at local level is considered important as it is the local sites that should implement and drive the initiative further. To enable such ownership, the opportunity for local adaption is important.

In the networks, different local practices are discussed and each representative might take some of the discussed practices back to the plant for further discussion locally or for implementation of those. The people within the networks often have a mandate to take a decision about the practices being discussed there and the potential implementation. The networks often have focus areas, which are decided within each network. Specific practices linked to those focus areas are then discussed. The networks also include education within the different areas in order to give deeper knowledge and to share practices between sites. In the improvement work groups, decisions about what to do and how to do it are discussed and decisions are taken locally to improve or change a standard used locally.

Company E finds it important to follow up and to validate the results from the implemented practices in order to create a sustainable process that provides and enables great results in alignment with the overall business strategy.

4.6 Company F

Humbleness and openness towards new ideas and practices are considered important within Company F. One way to highlight the idea of many possible good ways to operate depending on context, is to use the concept of Good Practice, used in addition to the concept of Best Practice. Identification of Best Practices can be done in the improvement work, within the networks or by site visits at units especially good at an identified

improvement area. When taking a decision about a Best Practice, the evaluation at local level is done by discussing advantages, disadvantages and experiences. Working in a structured and systematic way with people's and units' own competences, knowledge and willingness to share, it is possible to transfer both tangible and intangible parts of practices both between units at the local plants as well as globally.

4.6.1 The concept of Best Practice

In addition to the concept of Best Practice, Company F is using the concept of Good Practice. The reason for this is that it can be hard to identify what a Best Practice really is, as the practices are not always possible to measure and compare quantifiable. Furthermore, the term *Best* is context dependent and is only best during a specific period in time. Hence, the concept of a Good Practice is better to use in order to highlight that there can exist many Good Practices that work the best in a specific setting.

Also the use of standards is connected to the use of a good or a Best Practice. Standards can be seen as a little bit more hands-on and connected to sub-operations, while practices in general is at higher level, but in many cases, they are considered as more or less the same. Good standards can be used as a concept within the production with the meaning of a good practice or a good way performing operations.

An important thing about good practices is that they are dependent upon the context they are being used. Practices cannot only be taken from one setting to another as the conditions do not look the same everywhere. The good practices have to be adopted and improved from that specific setting and it is important to know the own organization and the conditions before adapting practices directly from another source. Practices can be seen as potential improvements, and standards are being used as a basis for improvement. It is important to stay humble to different units' and different departments' various problems and settings. To be able to transfer and share practices, the source and the recipient must have an open mind.

A practice do not have to be the best from the beginning, it can be developed into a good or a Best Practice by improving the practice or the standard in the context, with consideration of the objectives and focus to that specific part. Standards and practices aim to provide a basis for further improvement.

4.6.2 Searching

The reasons for taking initiative to start searching for good practices can vary. A change within the company can be one way to start sharing practices. For example changes in IT/IS-system can cause problems with the old way of working and requires that different departments and sites help each other with ways to handle the new system. Also different problems can initiate searching for a solution and potential good practices used elsewhere. Previous experiences have shown that bigger changes, for example implementation of a new ERP-system, increase the need and the demand for standards.

The improvement work carried out can also be a way to identify and initiate a search of a good practice. A good improvement, which has been proven successful after testing in one unit, can be transferred to other departments. The practice is being recognized or that the improvement is being escalated to different forums for further discussions to spread it to other factories. To always keep improving the operations is an important driver within the company. In order to be successful in the improvement work it is important to keep an open mind, be open for new and better suggestions and ways of working as well as being humble. This humbleness is considered important for both the recipient and the source when discussing and sharing knowledge.

The Lean Network has a central role for transfer and sharing of good ideas and examples of improvements. Exchange of experience and knowledge sharing in meetings and visits at each other's organizations are examples of how transfer can be facilitated. Another way for the Lean Network to communicate good examples between departments is the so-called Lean Magazine, where practices and improvements are being recognized. By having articles about good examples, of which the teams themselves can be proud, this can generate that people want to take part of the knowledge and come visit the department. Such articles can also facilitate knowledge and practice sharing.

If an idea for improvement comes up in one of the teams in the manufacturing, the team discusses it with the production leader and decides whether to test it or not. If there are more ways to carry out the task, there might be pilots for the different practices and thereafter a decision is being made. It is important that the team feels ownership of their standards as that works as an incentive to follow the standard as well as to improve it further. The operators and the teams are also involved in the sharing of the practice to other departments if there is an interest.

Also the way of seeing the company as one unit can work as an incentive for sharing. The different units must help each other to achieve the best possible overall production. This way of viewing the company facilitates and initiates the work with sharing of good practices between units as everyone wants to contribute.

There is important to make individuals willing to contribute with their knowledge and to share their way of working. Ways of achieve this is to make people see the importance of their own individual work and its influence on the whole company and to recognize and encourage each other. If others share their practices without being judged, the incentives for others to do so become higher, which will generate a positive loop.

To be able to identify and find Best Practices that could be used at different sites and departments, there must be contact points between them. Those contact points are human beings that share and communicate with each other in order to share knowledge. A network with people from different units is one way of facilitating those contact points.

In order to get competence exchange between teams in units and shifts at a local level, operators and managers can work temporary within other teams. The initiation to such a temporary loan of competence might be a specific need. By getting a movement of people

between units and shifts, knowledge can be shared at the same time as the people make it possible to meet a temporary demand. By working in another team or at another department, the employees can recognize good ideas, potential improvements in practices and compare the different ways of working.

Such movement can also be global, between different plants. Such movement, called Secondment, is demand driven and can be initiated by a specific need, a project or something else, where a specific competence is needed. The need is matched with people with the right competence and experience. In a systematic and structured way, the people with the right competence can be loaned out to the plant for a specific period of time. For example, experts within a specific field can be put on secondment abroad to be able to solve a problem or help the plant aim towards the right direction. Knowledge and identification of practices at the different sites can be made by those people as they got a lot of competence, at the same time as having experience from different plants and different ways of working.

Site visits are also a way to identify potential good practices. The site visits are initiated by a need of improvement within a specific area in the operations. Units, external and internal, where a potential good or Best Practice has been identified, are being visited. The identification of such potential good practices is being made by comparing of KPIs, if possible, or by the use of some internal methods for review of different departments and units.

Those site visits can be arranged by relationships between people, which origin from the forums and networks. The site visits can start in discussions about a good idea or a good practice in the networks or at different meetings. Visits at each other's teams or factories are in some cases also targeted in order to make people go out and get input. By visiting the operations and looking at the actual performance, it is easier to really understand all the aspects of the practices. Then some good practices are identified, brought back to the own unit, adapted to the specific setting and implemented and improved. Also the network meetings globally and locally provide a smorgasbord of good practices that can work as inspiration and be transferred to other sites and units.

4.6.3 Evaluation

The evaluation of a potential change in a standard, a future good practice, is done by discussing the advantages and disadvantages in the team. Then, the first decision is often to try the new way of working and then validate and evaluate if it worked better than the old way of working. Hence, testing is a way of evaluating if the practice is good or not.

In connection to the global way of working, the discussions are carried out in a meeting and a group that consists of representatives from different plants. The group are asking each factory to send in their practices and if possible, the associated training material. They compare and evaluate the different options and discuss what should be a minimum-level to use globally.

In general, the discussions about the Best Practices and the evaluation of those are quite alike, no matter if it is regarding Global Best Practices or Local Best Practices. The discussions are just on different levels within the company. The evaluation has its basis in experience and knowledge about the specific setting and context. Then the discussions are basis for the decisions about a change in standard or a new best, or good, practice. The focus is to make it overall better, even if not everyone can agree upon the new standard at first, which is what the discussions and pilots are for.

4.7 Company G

The definition of Best Practice is in general quite vague and the concept can be used at different levels within the organization. Best Practices are identified by improvement work, visits at different plants or in network meetings for example. By discussing the applicability of the Practice for different sites, a decision that could work as a basis for further improvement and adaption can be taken. It is important to have a standard, and to follow it, and then improve it from the standard. This is important to get a structure of the improvement work and not take on too much at the same time. The important part is to make it work in the long run, and not only focus on short-term performance.

4.7.1 The concept of Best Practice

The concept of Best Practice is quite unclear and hard to define. The concept can be used at very different levels. It can be quite simple improvements as well as complex solutions at an overall level. It is quite hard to connect hard values possible to measure to the concept in some areas, resulting in some difficulties to use the concept. Best Practice is being used within Company G in the work with Lean in order to share methodology and practices.

The concept is however, in some cases, quite linked to the concept of a standard. A Best Practice or a standard is a way of working that everyone should follow. If the company finds an improvement, the standard can be changed, becoming the new Best Practice. The standards and Best Practices can be seen as a basis for further improvement.

The standards and harmonization can also enable synergy effects between different plants and different departments within each factory. The harmonization between factories can to a large extent start in the possibility to have common product platforms, as this influences the harmonization possibilities.

This harmonization, however, can be made at different levels and by different methods, it must not always be the specific working processes, but can also be to harmonize specifications between plants when buying new equipment. This can facilitate the same way of working, but do not require it, as the practices must be adapted to the specific setting and the context of the plants. Plants in different countries have different conditions and are being used for different reasons. In order to get the most out of those plants, the practices and the working processes must be adapted to the setting.

The objectives to work with Best Practices and sharing of those are to ensure a specific standard and quality of the products. It is also the basis for improvement in order to improve overall and at different places in the factory. When everyone working according to the standard, an improvement can be used and implemented from the same basis, making overall improvements for the company.

The focus on harmonization is mostly on a high level, such as the management systems for the plants. The basis for this work is the company G specific operating system, based upon Lean. The standards for working processes in the factories are usually not the same in the different countries. Company G is quite decentralized and do not have the same IT/IS-systems all around the world. Different countries and factories have different settings and operate in different contexts. This result in that the same standards cannot be used everywhere.

4.7.2 Searching

Improvement work can initiate to start of searching for potential Best Practices. If an improvement is proposed by an operator the idea will, dependent upon the scale of the idea and the implementation of it, be escaladed to different levels in the organization. In this escalation, the improvement can be used as a Best Practice and transferred to other forums as well. The work with improvement of the own processes is a part of the operators' role description and it is being targeted how many improvement each team should contribute with each year. The technicians can help with some practical changes. The discussions about changing a standard or not is often done in the operator teams. However, if the change in standard is influencing some other process, the issue and the idea must be escalated to the management.

The improvements or the good practices in the manufacturing can also be recognized by the daily Gemba walks in the factory. In those Gemba Walks, management and different functions will walk around to discover new ideas and to look into how the manufacturing and the operations actually are carried out. Different functions and people from different areas can hence discover Best Practices and transfer them to other areas and departments as well. To investigate how different teams are working and how the production look like in different places, provide a smorgasbord of different practices that can be used to improve the operations elsewhere.

Another way to identify potential Best Practices and spread them, is to conduct site visits at other factories or other departments. During site visits, practices than could be used elsewhere can be identified both by the visitor as well as the host. The site visits often include discussions in which practices can be debated. In order to share practices and knowledge between sites, networks are used to a large extent. Those networks also provide personal relationships between people at the different sites and could be used to share knowledge and practices over for instance phone calls and phone meetings later on.

The current strategy and the work with it also affect the transfer of Best Practices between sites. The strategy affects how to work with harmonization as well as to what extent and

on what level this should be done. Strategy can initiate the search for a Best Practice locally or globally. As different plants have different objectives and contributions to the overall strategy, this affect the degree of standardization of for example IT/IS, costs and processes. The strategy is broken down to be able to make decisions and the operations contribute to the strategy.

Changes in product mix or change in organization can also initiate the development of Best Practice. This can for example be opening of a new factory or an acquisition of another company. In order to be able to transfer practices, the first step is to investigate what documental support there is and what the gaps are. It is also extremely important to remember the "silent knowledge" which employees and people at the factories have. To transfer practices and knowledge it is important to get support and to get in contact with key persons which have a lot of knowledge that can be shared. This can be very difficult, especially if the change regards a shutdown somewhere. In order to get support and to ensure that knowledge can be saved and transferred, it is important to create incentives for people to contribute.

A way to transfer this silent knowledge is to move people in order to make them teach the practices to other sites. Those persons can also be able to identify other practices being used and bring them back or develop them further, as the person may have different background, knowledge and perspective compared to the people working at a daily basis on the site.

4.7.3 Evaluation

Applicability is important as the company is decentralized with different settings for the different factories. The evaluation is affected by the possibility to apply the practice or the process in different factories; maybe the practice has to be changed in some way or maybe it is not applicable at all.

People's knowledge is needed to be able to compare different factories, their performance and the connection to their practices. The reason for that is for example that different factories, with different business systems, do not measure everything in the same way. Human knowledge and experience are therefore needed to be able to do a correct evaluation. The context of the factories needs to be understood as well as the measurement of different things in order to compare the factories and their processes.

The evaluation of an improvement is pushed to the lowest level possible in order to create an effectiveness and an interest to do improvements. It is important to be able to take a decision about an improvement as fast as possible. To be able to require improvement ideas of the operators, the operators must also be able to get feedback on their ideas as soon as possible, as this creates incentives to contribute further with knowledge and creativity.

Overall, discussions are important when evaluating different options, comparing different practices or evaluating a new idea or improvement. Discussions can include

measurements and quantifiable data, but also allow people to express more intangible advantages or disadvantages. When it comes to high-level decisions about big changes, quantification is very important and done on beforehand to provide the decision makers with basis for a decision. Strategy is of course also a large part of such decision.

When implementing a bigger change, it can be very effective to run a pilot at first in order to be able to show good results. This can inspire people and help convince them about the idea or the new way of working.

It is important to see a decision about a practice or some processes as a basis for further improvement. It does not have to be *the best* in the beginning. Especially when it comes to bigger changes, for example moving a factory, it is important not to take on too much at the same time. Instead, focus on what should be done, transfer existing knowledge and make it work smoothly before scaling up the change. The improvement of the processes and practices can be done afterwards, once the processes are working.

4.8 Summary empirical findings

Table 5 - Summary Empirical findings

Company	The Concept of Best Practice	Searching	Evaluation
A	Standard Benchmark Basis Improvement Predictability	Problems Improvement work Setting targets Improvement Site-visits Personal relationships Networks Experts ”Smorgasbord”	Experience Quantitative when applicable (Decision at lowest possible level) Test and validation
B	Improvement Dynamic Standard ”Good Practice” Benchmarking Basis Improvement Same structure	Problems Organizational change Improvement work KPI benchmark Experts Networks	Business Case Applicability IT often involved globally Validation
C	New Improvement ”Good Practice” Basis Improvement Benchmarking Cost reduction	Strategy Improvement work Change of products Problem Improvement Networks	Discussions Business cases Applicability Strategy IT often involved globally, rarely when locally
D	Best Standard Basis Improvement Same structure	Organizational change Change of products Improvement KPI benchmark Global experts Improvement Competence movement ”Smorgasbord”	Case descriptions in networks Discussions Benchmark of KPIs Test and validation

Company	The Concept of Best Practice	Searching	Evaluation
E	Benchmarking ”Good Practice” Basis Improvement New Improvement	Problems Improvement work Benchmarking-trips (Site visits) Networks Informal contacts – phone calls, email KPIs when applicable Strategy Global experts Smorgasbord	Experience Test and validation Applicability IT can be involved globally
F	”Good Practice” Dynamic and context dependent Basis Improvement Standard	Change Improvement-work Problems Targeting informally Improvement Site visits Networks Competence movement Smorgasbord KPIs when applicable	Experience Discussions Test and validation
G	Standard Basis Improvement Synergies Context dependent Quality	Improvement work Strategy Organizational change Change of products Improvement Site-visits Gemba walk Networks Competence movement Smorgasbord Setting targets Personal relationships	Discussions Applicability Pilot Basis (Quantifiable)

5 Analysis

The analysis will be structured according to the first steps of the Best Practice transfer described in the theory (see 2.11.1); including the concept of Best Practice, searching and evaluation. In the end of each stage, the impact of local and global perspective upon the Best Practice transfer will be analyzed.

A new model for the early stages of Best Practice transfer will thereafter be presented and further analyzed, with focus on the differences and interaction between Local and Global Best Practice transfer.

Figure 11 - The Process of Best Practice transfer, basis for analysis

5.1 The concept of Best Practice

In order to understand the process of Best Practice transfer, including the searching and evaluation of potential practices as contribution to a Best Practice, the overall concept of Best Practice must be understood. How the concept is being used within the companies and what the objectives with the Best Practice approach are analyzed in this chapter. This description and analysis of the concept is considered the basis and start of the Best Practice transfer and the Best Practice approach within the companies.

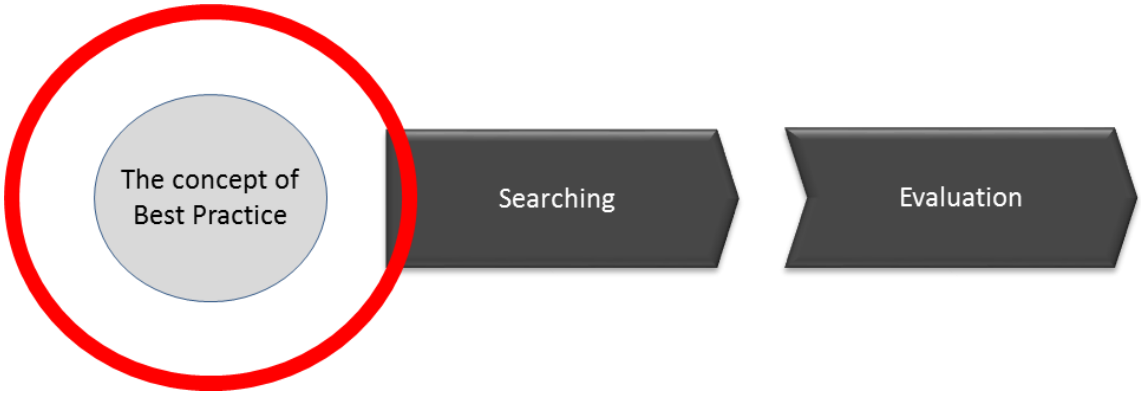

Figure 12 - The concept of Best Practice

5.1.1 The definition of Best Practice

The definition of Best Practice used by the companies is often quite vague and the concept is sometimes used without a clear definition. This has consequences for the work with Best Practices and the transfer. However, there are some concepts that are generally being used in association with Best Practices.

Standard and standardization

Standards and the use of such within the manufacturing are closely connected to the Best Practice approach by six out of seven companies in this study. Also the associated concept of standardization is connected in many ways and used by the same companies. The difference between the use of standard and the use of standardization is that they are used at different levels, where standardization to a larger extent is connected to global harmonization.

The term of standard is commonly used locally and is often perceived as operational associated. An example is assembling descriptions. When the companies use the vocabulary of Standard, they address what in theory is referred to as a practice (see 2.4). Practice is an established process used in a routinized way within a part of the organization (Voss, Åhlström, & Blackmon, 1997). A practice can also be a good idea, which influence on performance is still unproven (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000b).

The association to Standard indicates a local level view upon the Best Practice concept. It reduces the need for the practice to be *the* best and instead focus upon do things in a standardized way.

"Best Practice is to me a way of working or a method that everyone has agreed upon, that is a Best Practice. You should always aim for a better practice, but if most people have agreed, that is good enough for me" – Company A

Good practice

In order to avoid the problematic word *Best* in the concept, the idea of a "Good Practice" can be used instead, or as a complement, to the Best Practice concept. The additional use of Good Practice is being highlighted by Company B, C, E and F. Those companies consider *Best* as an volatile concept, dependent on time, setting, people and context. This view is also shared by Company G. *Best* is also quite static. Good Practice is considered by the companies a bit softer to its approach, making it easier to use in different context. Also, a good practice does not indicate that a quantitative evaluation has to be made. All practices are not easy to measure, especially not in different contexts to be comparable between sites.

"Good Practice is better because it is not always quantifiable, measurable or possible to identify what a Best Practice is" – Company F

Five of the companies argue that it might be hard or resource demanding to prove what *the* Best Practice actually is, dependent upon both time and context. This difficulty is also being debated by researchers (Slack, Chambers, & Johnston, 2010; Wellstein & Kieser, 2011). The other two companies, in addition to the other companies' despair of the possibility to classify something as proven *Best*, highlight that a template of different good practices might exists within a company. Different practices can be used dependent upon the context and the needs of each organization. All companies discuss the issue of classifying something as *Best* in all contexts and settings. The use of Good Practice seems to reduce this problem.

Quantification can be costly and it is not always worth to put resources to look into the quantifiable aspects of a practice. This view upon the quantification of the practice, or the difficulties of doing so, influences the evaluation of potential practices later on. Hence, the use of Good Practice instead of Best Practice is to some extent influencing the overall transfer process. The term Good Practice also indicates a starting point for improvement.

"A Best Practice is like a standard practice, because there is never a Best Practice, it can always be improved. It can only be best for the moment." - *Company A*

The concept of a Good Practice also stresses the "good enough for now", meaning that a common used standard can be improved to become even better. The first step to improve is to make people work in the same way. Again, the Good Practice and the Best Practice concepts are linked to standard and standardization as they can be used for further improvement. The improvement can be both associated to the definition, as well as being a target and objective of using a Best Practice approach. Associating improvement to the definition of Best Practice, is especially stressed by Company B and C.

Context dependence

The importance of context dependency and the impact of different settings upon the Best Practice approach are stressed especially by company F and G. However, the subject is being discussed more or less by all companies in different phases of the transfer in addition to those that highlight it as a part of the definition. Different plants have different conditions and different objectives which must be taken into consideration. The view of how much those conditions should affect the harmonization differs depending on strategy and on what level a decision is being made. In general terms, companies that are more diverse regarding products in the portfolio and manufacturing plants related to those tend to allow more adaption to specific contexts regarding both Local and Global Best Practices. For example Company G and Company E can be mentioned. Depending upon the perspective of the available Best Practices, all companies find the understanding of context important when adapting a Best Practice. Some companies talk about this when discussing external benchmarking or transfer of Best Practices between different units or departments within a company.

"A Best Practice is the best you have, right where you are, but it might not be the Best Practice for me. We take your Best Practice, turn it into a Good Practice and improve it based upon our conditions, our organization and out culture" – Company F

The context dependency is one of the reasons that it might be hard to transfer local practices between sites. The different context and the different perspectives of plants world-wide are sometimes used as a reason why it is hard to harmonize practices at a lower level, for example regarding sub-operations. Different factories require different ways of working since the context and the conditions differ.

Dynamics of Best Practice concept

Another view of Best Practice is that it is a dynamic and moving state, which is continuously developing. The association of the dynamic perspective of the Best Practice definition is especially highlighted by Company B and F. This association is also connected to the problematic use of the word best. The word best cannot be seen as static, but as something that is pushing the limit in order to improve further. What was best yesterday is not the best today, since "best" is a moving target. By defining the term *Best* as dynamic, it is possible to use the concept of Best Practice in global organizations, associated with more standardization and harmonization than the Good Practice concept.

"Best Practice to me is not a static state, but a dynamic. We are looking for it all the time" – Company B

Benchmarking

Company A, B and E associate benchmarking to the concept of Best Practice, as the way to achieve such. This connection is also very clear within the research and has achieved even more attention lately (Anand & Kodali, 2008). By benchmarking different practices or different teams/plants against each other, it is sometimes possible to find the best available way to operate. The connection to Benchmarking is present at both local and global level within a company.

"It is when we are looking at other units or departments, which have done something good that can be shared to other departments as well, that is a Best Practice to me" – Company E

Benchmarking can also include benchmarking against external parties in addition to internal benchmarking. The perspective and the scope of the benchmarking efforts could be at different levels within the organization.

"It is a method or a design or whatever it can be, that is considered to be the benchmark and you can look at it from different points of view, let's say a company or the industry for example" – Company A

Improvement and effectiveness

A Best Practice definition can focus on the word *practice* in the concept, meaning to focus upon the improvement or the better way of doing something. This is done in the definition of Best Practice by company B, C, D and E. Having such an approach indicates a focus upon the possibility to improve the organization rather than to simply standardize it. In this definition, the word *Best* in the concept is being stressed. At lower level, the link to the standards or practices is used more commonly. This distinction in definition is important and has effects on how the companies handle the searching and evaluation phases later on.

"A Best Practice is something that describes a technique or a process that is the most effective way to do the task on" – Company D

However, this perspective upon the Best Practice concept is sometimes hard to use and it is often combined with talking about standards as well. The perspective on Best Practice as improvement, or the most effective way of operating, is focused upon the overall organization. Best Practices, as being used within the companies at global level, do not focus on optimization of a single unit, but to make it better for the organization. This distinction is very important when defining the concept, especially when the companies highlight the improvement and effectiveness view of the concept. It is also a distinction between global and local perspective.

5.1.2 Objectives of Best Practice transfer

The objectives for using Best Practice and the objectives for sharing Best Practices between teams, sites and globally, are connected to the used concept of Best Practice. Those objectives are about handling the balance between flexibility and context to improvements and standardization within the concept.

Basis for improvement

Best Practice is considered a basis for improvement for all participating companies. Connecting the definition and the concept of Best Practice to standards, it means that following the standards provides a common basis for further improvement. The participating companies argue that the first step within improvement work is to establish a standard, which then can be further improved. Hence, linking the standard concept to the Best Practice concept, Bast Practice is a basis for improvement.

"We are usually talking about standards. (…) Our objective with standards is to do things as alike as possible, as this is the first step of being able to improve our processes" – Company D

Company B and F, in their used definitions of Best Practice, highlight that a Best Practice is a moving target, meaning that the concept of what is considered "best" is dynamic. However, it is important to remember that neither a standard is considered as static by any of the companies. The standards should be used as a basis for improvement and at local level, the operators often have ownership of their own practices and standards. They

have the mandate to change their standard and it is often included in their role descriptions to improve their working processes. However, the valid standards should always be followed.

"If the standard is not the best possible way of working does not matter, as long as you have a standard. You can combine it with a good continuously improvement process." – Company A

As the concept of Best Practice is closely linked to the concepts of Practice and Standards, the main objective of using Best Practices is to be able to standardize the processes, both locally as well as globally. By standardizing globally, it is possible to improve all the processes at the same time, which means bigger savings or overall better performance.

"Now, we want to pass on the knowledge so everyone is being lifted to the same level. And then, when we are on the same level, we can develop further together" – Company E

This also gives the opportunity to implementing improvements faster and with better overall results for the global organization, as everyone already works in the same way and also speaks the same language. This is especially obvious when the companies are having the same structure and are using the same IT system at all sites. Hence, standardization both globally and locally can facilitate sharing and transfer of Best Practices. Standardization and the use of standards are enablers for further transfer as well as an objective in itself.

Common structure

When working with harmonization of processes and high-level Best Practices in a global perspective, an objective pointed out by company B and D is to enable a common structure. The structure provides a feeling of security and predictability when moving people between plants for example.

A common structure enables communication and sharing of knowledge between different plants. To move people around globally as well as locally is getting more and more important for some companies as a way to develop the employees, to share knowledge and to get the right competence at the right place. This trend is being pointed out as an objective with a Best Practice approach by Company D, F and G.

"And of course, when we are talking about working in the same way in the whole organization, it is very powerful, you can recognize the way of working. If I should start as a manager at another plant, it is the same thinking and the overall processes look the same" – Company D

Synergies

Standardized and harmonized processes also give synergy effects between sites, including the fact that additional and supportive tools to the manufacturing functions can be bought to a lower cost, as well as achieving lower running costs. The IT/IS system is an example

as it enables cost efficiency and also the sharing process of a Global Best Practice (Jarrar & Zairi, 2000b). At the same time, it is costly to re-design it, meaning that quite often the processes have to be designed to fit the IT system instead of the other way around. The objective with achieving synergy effects is especially pointed out by Company G, but all companies in some way indicated this objective, especially regarding Global Best Practices.

Balance flexibility and standardization

There is always a balance between flexibility and standardization that must be kept in mind when working with a Best Practice approach.

"There is a thin line between the allowing of that flexibility and enforcing that standardization" – Company A

At the same time as the objective with the Best Practice approach is to create a basis for improvement, the intentions to achieve standardization, synergies and a common structure with the same concept can be seen as conflicting. The companies try to handle this balance by having different focus of their work with Best Practice and Best Practice sharing at different levels. By doing so, different advantages can be gained in different aspects. However, the balance must also be handled at each level, which sometimes can be hard.

"That is always the fight between flexibility, creativity and so on, which everybody considers to be good things. And robustness and standardization, which also everybody considers to be good things" – Company A

5.1.3 Impact of global and local perspectives on the concept of Best Practice

Already in the definition of the concept of Best Practice, some differences in how the concept is being used on a local compared to a global level can be seen. The most obvious distinction is the focus on standards and the use of the Good Practice concept at local level, within the factories. The focus on global level on the other hand, is to harmonize the processes in order to standardize. There is however, some space for local adaption on lower level and the design of more context dependent practices. This can for example include how the operator moves within the working area, while the ways the product should be built are harmonized between sites.

Taking a local perspective, five out of seven companies either highlight the importance of context dependency of the Best Practice concept or use the concept of Good Practice in addition. The concept of Good Practice is more open and indicates that there can be many good practices being used at the same time and what is the best for each organization depends on the context where it is being used and by whom. Good Practice is a way to describe the importance of context dependency used at local level.

The use of the concept Best Practice at local levels is being used for lower level practices that can be decided within each factory or each team. The concept is locally associated

with the work with standards, which often can be changed by the team themselves. The concept of Good Practice is being used to highlight that a template or a smorgasbord of practices might exist, which can be used and adapted and improved further to fit the specific context and the requirements there. This can be seen as a palette of different practices.

"It is this double perspective with benchmarking; You take a lot of candies out of the cake, a lot of smaller things, and you share your knowledge in exchange" – Company F

The global perspective of the Best Practice approach is more focused on the dynamic of the word Best, which can be described as a moving target. The concept is dependent upon time and what is considered the best is developing all the time. In the global aspect, there is often *the* Best Practice, being used or should be used everywhere. The concept is more associated with harmonization between factories and is generally more high-level. In some companies, the company specific operating system, often based on Lean, can be considered as a Global Best Practice, which should be used everywhere.

"What we on the other hand have tried to harmonize is our management system around the factory" – Company G

There is a difficult balance between adaption to contexts at lower level, and standardization and harmonization in a global perspective. The harmonization aims to get a common structure and the standardization at local level to establish a security for the operators that they are operating in a way that ensures a specific quality of the products. This is handled by the distinction between local and global levels and the different ways of working with Best Practice and Best Practice transfer depending on global or local perspective of the concept.

"You want that stability that standardization enables, on the other hand you want the continuous improvement as fast as you can" – Company A

At local level, the Best Practice is handled by ensuring that everyone works according to current standard, but the operators can to a large extent change and improve the standard. This ownership at local level is being pointed out as important among all participating companies. Hence, the operators are encouraged to use their creativity at the same time as a standard is providing security. At local level, the Best Practice approach works as a basis for improvement, where the improvement work should go as fast as possible.

By letting the local sites develop their own practices that work in the factories' specific settings, flexibility and the objective of standards as basis for improvements can be achieved at the same time.

"Of course, on different sites, they have their own creativity to develop their own practices" – Company B

On a global level, on the other hand, the focus is to achieve synergies between different sites and to enable the same structure at different sites. Global level focuses more upon

overall improvement for the organization. Often, Global Best Practices are implemented and kept for a longer period of time. The reasons for this are the higher costs associated with such a bigger change that is required for a Global Best Practice implementation. All companies to some extent discuss the detail level of different practices, where the Global Best Practices generally are higher level. By company A, B, C and E, the Global Best Practice is said to involve IT often or sometimes. Among company A, F and G, the Global Best Practices are often connected to the Lean initiative or the management system of the operations.

"Should be change in the system, then it must be a global change" – Company C

Different levels have different objectives with their way of working with Best Practices. To have different objectives at different levels result in different ways to handle the Best Practice transfer depending on global or local perspective.

Table 6 - Impact of Global and Local Best Practice perspective upon the context of Best Practice

Local level	Global level
Standard	Standardization/Harmonization
Template of practices/Palette	*The* Best Practice
Lower, hands-on level	Overall, higher level
Context dependent	Time dependent - dynamic
Basis for improvement	Synergies
Inspiration - sharing	Same structure

5.2 Searching

The searching phase involves the activities of looking for potential candidates to a Best Practice. The phase is to a large extent dependent upon the concept of Best Practice used within the company. Depending on what the companies want to achieve with the Best Practice transfer and approach, the search for candidates will be designed and carried out differently.

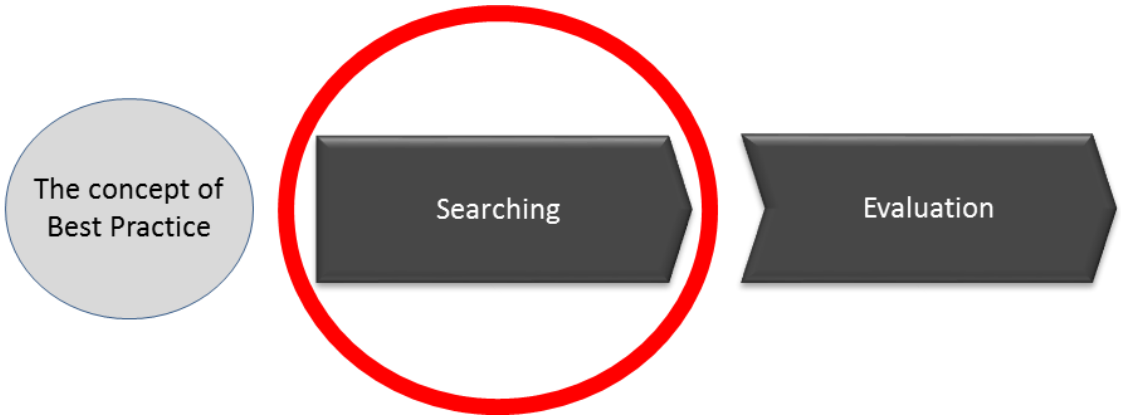

Figure 13 - Searching

5.2.1 Initiation of Best Practice identification

The transfer of Best Practice starts with a search for potential candidates for a Best Practice (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b; Szulanski, 1996). Such start can be initiated from inside or outside the company.

Changes/Transformation

Changes of different types can be the initiation for identification of potential Best Practices. This is being pointed out as a starting point by five companies. The changes can be in product mix or a change in the product design. Changes can also be of an organizational nature and include internal reorganization as well as acquisitions of other companies or factories for example. Company B, D, F and G highlight such organizational change as a possible start for searching of potential Best Practices.

"Basically you need some kind of special event like an organizational change" – Company B

The opening of a new factory or moving the operations from one factory to another can be a change in the organization. When doing so, knowledge and practices need to be transferred from one place to another. Company B, C, D and G discuss that different factors such as IT and different product types in various factories in relation to such changes, are reasons to a developed practice is being considered to be a Global or Local Best Practice. However, those companies in the same time find it important not to change too much during such a change. The most important thing is to find a common basis, improvements are the next step. To transform something is difficult as it is, and even if it could be tempting to try to optimize each process as well, it is important not to take on too much. So even if such changes can initiate Best Practice identification, the scope of the change is also being considered.

"It applies for both parts - change as little as possible. Sometimes there is a risk in that you want to optimize when you have the chance. But it does not always get optimal, instead it is a big risk to try to discover uncharted waters too early" – Company G

During a big change such as a transformation of a part of the organization, it is hence quite usual to start from existing processes or existing practices. Depending upon the strategy of the company, the existing processes could consist of standard documentation, a way of working defined in the IT system or a processes being used in another plant.

When using the Global Best Practice and its standard or master documentation as a basis, wanted changes and deviation from it must be discussed at different levels, for example with people that have knowledge within the whole process and the IT system. Such deviations must be discussed in several functions to ensure that the deviation works with associated processes. This is considered especially critical for companies that are using the same IT system and try to harmonize as much as possible. Companies talking about such issues are Company B, C and to some extent company G.

Smaller changes that could be handled by each factory can also initiate a search for a potential Best Practice. Those changes can be associated with the same situation as when a problem occurs, as it is a specific process to which a solution must be found. Changes that should be handled locally can for example be a change in a product that requires changes in programming of machinery. It can also be an organizational change such as a loss of operators, downsizing the workforce or moving or downsizing a specific workflow within the factory. Such changes as a potential start for identification are discussed by all companies in the study.

Strategy

All companies in this study are large companies that all have a strategy they must adapt to. In three cases, the strategy is pointed out as an origin for search of a Best Practice.

"It is usually a continuous work, but it has its origin in two different aspects; either it is strategy or it is cost reductions from where we are now" – Company C

However, the design of the strategy differs, which influences to what extent local plants have to align to the global practices. For some companies, each plant is quite autonomous, while in other companies, the plants are to a large extent dependent upon central decisions. In order to make people work in the defined way according to the strategy, there is a common agreement and understanding among the companies that there must be a feeling of ownership and understanding of the ways of working among the operators at local level. All companies state that it is important for the people within the operations area to understand the operations' and practices' impact and interaction with the strategy and the performance of the company.

"Suddenly, we are a part of something bigger, not only manufacturing.(…) We contribute to the motor of the company by investing the resources in the right places in order to develop the company, as one unit and a team." – Company F

This can be a signal that the link between strategy and the operations impact on the strategy is considered important at least locally within the multinational corporations. This interaction is receiving attention and effort in terms of getting people to work with the practices to understand the impact of their work to the overall operation and the company.

"Because the success of our company is the success of the local sites as well. (…) It is pretty obvious" – Company A

This can be seen in the light of that a common critique of production managers is that they are often focusing too much on the day-to-day tasks and the daily matters rather than thinking about strategic questions of their operations (Hill, 1986). In opposite, many of the respondents highlight the importance of making the operators and all employees see their own work and contribution in the light of the overall company, as they can contribute to make the company move in the right direction. It is highlighted by Company F that the top management recently has done a good job to integrate different parts of the company.

"I think it gives a feeling of "we" within the company, instead of groupings. Now, we have started to understand how everything is connected and I really think that the top management explains and highlights that well" – Company F

Improvement

Improvements of different kinds are among all companies identified as initiating an identification of Best Practices, both on global level and local level. The work with improvements, both continuously as well as in bigger projects, results in that Practices that can be used as a Best Practice can be identified. Within improvement work various needs can be identified and in such cases it can initiate searching for a solution or a Best Practice elsewhere. At each local factory, all the companies are working with improvement in teams of operators. The teams are working with improving their own processes and their own way of working. Improvements from this work can result in a change in standard and a potential Local Best Practice.

"Or in the teams of course, the improvement work within the teams" – Company G

The initiation of searching for Best Practices that origins from improvement work can be of two kinds; either it is initiated by the team or the group that have improved the process or it is initiated by some external part who recognizes the improvement and finds it potentially applicable somewhere else. Both kinds are common within all the participating companies.

If the source of improvement initiates the identification of a Best Practice, the transfer and sharing of the knowledge is of both informal and formal kind. They are communicating their knowledge to other departments, individuals or teams. This can be facilitated by the use of incentives for sharing of ideas or by each individual's interest and enthusiasm for sharing their knowledge.

"And a manager can catalyze this behavior by requesting it. To some it comes natural, while others need a small push in the right direction" – Company F

This behavior can be encouraged by recognition of good practices and improvements after communication of those. It can also be a target for each individual or each team to come up with improvements every year and communicate them further in order to share the knowledge and the improvements to other areas as well. This targeting is said to be done by Company A, F and G.

"So, how do we ensure that the knowledge is being shared to others? We said; let's target it by setting a goal for each team" – Company A

Including the improvement work in the role descriptions of the operators is done by at least five out of seven companies at local level. This make the operators contribute to improvements of their own processes, which they know the best. In the role description, it can also be included to communicate the improvements and lift them up in order to transfer the knowledge further.

"It is a part of your role and work description" – Company E

The other way improvement can initiate the identification of a Best Practice is by someone outside of the team that recognizes the improvement and sees its application somewhere else. Hence, the identification origins from the improvement work. This can also be associated with a problem somewhere else, resulting in that two different initiators for identification of a Best Practices are interacting. An improvement somewhere can be used to solve a problem somewhere else, within the factory or in some other factory. In order to connect those two initiators, someone who can see both the need and the solution is sometimes needed. This subject is being discussed among all companies, more or less directly. This connection of source and recipient can be done by site-visits in different factories, but also by the Lean Networks within the companies. The people working with Lean are often working across different areas within a factory, resulting in that different needs can be identified and persons and teams can be connected to each other in order to share knowledge and practices with each other.

"We have people that are walking around to different teams and units within the organization and should build bridges over the gaps. (...) Because we have an overall responsibility for the whole organization, we know how long different parts have come in their improvement work within different areas, and then we need to put different parts together; you must talk to each other!" – Company C

In all companies, there are also larger improvement projects, especially at global level. Those improvement areas can be identified from a problematic area, strategy or by a performed benchmark that could be external. The projects are being associated with a specific area or a problem. The improvement projects can provide improvement suggestions of specific practices or even development of a new practice that can be used at different places around the world. Those improvement projects sometimes tend to be of a more general nature and provide practices that can be used in a wider area and in different settings and contexts.

Problem driven

Problems are starting-points for searching of Best Practices both at local and global level. Problem driven initiation of identification is discussed by Company A, B, C, E and F. Company D and G do not explicitly use this term, but as problems can be an underlying cause for improvement, problems can be considered a common reason for initiating identification of Best Practices.

"A problem that can arise at several places, for example there could be quality issues in the manufacturing" – Company E

When a problem occurs, it is quite natural to identify how others, that might have been having the same problems, solved them. If there is a problem that no one has had before, it is also natural to discuss what is needed, how a solution can be found and developed in order to find a solution suitable for everyone.

"When in production we talk about good standards, what can we take with us from here? What is their solution for this problem?" – Company F

"A lot of it is linked to problems that we are having, and it can be all types of problems" – Company A

"Today, we are often working problem driven. One factory has a problem, we look in the process map; is there any solution for this problem? If yes, then it is easy. If not, then we have to discuss it" – Company B

A problem driven approach towards initiation of identification of potential Best Practices can be seen as a quite reactive way to handle Best Practice transfer and knowledge sharing. However, to be problem driven ensures that there actually is an application for the practice and it works as an incentive for identification and search.

"I would say that a majority is more reactive, but we try to be proactive as well" – Company A

A problem can occur both at local and global level. At local level, this can in some cases result in that benchmarking against other plants is taking place. This is often done informally by being in contact with the other factories or with the other departments within each factory.

"Between the factories, when we have a problem which we do not really understand then we can go visit and benchmark; how have you done this? It happens all the time" – Company A

Two cases when local level and global level are connected are when a problem occurs at global level or within each factory when there is some kind of change where the global function is involved. When searching for a Global Best Practice because of a problem that has occurred during a change in organization for example, the organization looks into Local Best Practices for solutions. Those solutions could then be used as a contribution to a Global Best Practice.

5.2.2 Identification of a potential Best Practice

First, something initiate the search for a Best Practices, thereafter there are several different ways to identify a potential Best Practice. Often, different ways to do so are combined and used as complements to each other. Different kinds of practices can be identified in different ways. In order to be able to identify both local, practical practices and more overall, global solutions and potential Best Practices, different methods are used. Many of the methods are linked to benchmarking towards currently used practices as well as other potential Best Practices.

Improvement

The striving to always improve the operations is discussed frequently among the companies. During work with improvement within the teams in the manufacturing, a lot

of potential Best Practices are identified. This can be already implemented practices as well as new ideas. All companies work a lot with letting the teams improve their own processes and often some kind of coordinator facilitates and structures the improvement work. This coordinating person can identify potential Best Practices but so can also the rest of the team. All companies find it important that every team at local level has ownership of their own practices and their own standards. By doing so, identification of potential Best Practices is facilitated for each unit.

"We should give the team the possibility to improve their workstation" – Company B

"You own your standard" – Company C

The improvement work is also a way to identify potential Best Practices of different kinds, as the continuous improvements have to be neither revolutionary nor result in extreme performance improvement. The improvements identified as potential Best Practices could regard softer aspects as well, for example ergonomic or safety factors.

Improvement can also be used for identification of potential Best Practices at a global level. In such cases, the improvement work is usually carried out within a project, focusing on a specific area. Such improvement projects are especially highlighted by Company A, B, C, D, F and partly G. The resources are dedicated to find an improvement or a solution for a problem in order to reach the objectives and some specific needs.

"Sometimes you need to do something radical to be able to reach the objectives" – Company C

Identified needs can come from strategy or from an identified problem area, where improvement is needed, which is pointed out by all companies. Specific areas could for example be quality of a specific product or product type, or cost reduction of a commonly used process. If the strategy is broken down into operational objectives, some areas can be identified for improvement within a specific function or also cross-functional within the company. Those improvements aim to improve the performance for the overall company.

"Each unit breaks down the strategy to how they can contribute to reach the goals and sometimes it becomes a project" – Company B

Using improvement work or improvement projects as a way to identify potential Best Practices can be used at both local and global level, but the details and the objectives differs. Local improvement work is often focused on continuous improvement, resulting in many smaller savings or improvements. Improvement projects on the other hand, are more often focused on radical improvements that can be associated with bigger savings per improvement. Those improvement projects often demand more resources for a limited period of time compared to local continuous improvement work.

Competence movement

By loaning staff members, for example people with specific expertise within a specific area, Best Practices within different units and plants can be identified. This is being pointed out as a way to identify potential Best Practices by company D, F and G. By working with competence movement in a structured way dependent upon different needs, knowledge about different practices being used at different places can also be transferred to other units. It also enables to look upon the operations from new perspectives. Improvement opportunities can be identified both at the home site and the visited site. The newly arrived person from another area can also bring some of the practices being used at the old place. Experience from different areas enables and facilitates identification of potential Best Practices and good ideas.

"We are working much within the company to make people get experience from different divisions." – Company D

This movement of people and their competence can be of local characteristics such as moving people to different shifts within the same area, just to work with other people than the usual.

"It is good to have a team leader that goes to the other shift and works with them to see if it is possible to learn from that" – Company D

Movement of people and competence can also be of more global nature, sharing Local Best Practices with other units. Hence, the identification can be two-way identification; some practices are brought to the new plant, others can be brought back home. In addition, some improvements might be done to the transferred practice to fit the specific context for example. This improvement can be bought back again and implemented at the origin of the practice.

Moving people to other units also facilitates contact interfaces between different units and establishes relationships between employees, which is beneficial for further identification of potential Best Practices. Movement of competence is often initiated by a specific need of a competence or experience at one site. However, this movement of competence comes with possibilities to transfer practices and share knowledge.

By moving people with different knowledge and competence between units, the personal knowledge and experience can be shared. A lot of knowledge can be transferred from person to person during a temporary movement of such person. This includes both tacit and explicit knowledge as the person can show as well as describe the different practices. By doing so, practices that are hard to describe in written form can also be discovered and identified as potential Best Practices.

"You are moving to another area and can then identify; how is this done, can I take it with me? We want some sort of competence movement" – Company F

By moving competence and knowledge across borders and facilities, a palette of different practices can be shared by many units and plants. This palette works as inspiration for

improvements as well as a smorgasbord with potential practices to implement at the home site. This is a way of working with Best Practice identification that also captures the softer aspects of practices and different knowledge. Hence, also practices not easy to quantify can be identified.

Global experts

Company A, B, D and E work with global experts for identification and transfer of Best Practices between different units. Those global experts can be of different kinds depending upon the subject for the specific practice as well as having different functions within different organizations.

"There is a global network with experts" – Company B

Global experts are not necessarily being spoken of as experts in the other companies. The meaning of the concept of global experts is people with competence within a specific area, who should educate and train the rest of the organization in how to work according to the standards or the practices. Those experts often work with facilitating workshops, educations and networks in order to share knowledge.

"They are supporting in reality and help implement different things" – Company D

The global experts can be experts of a process or own the process, but they can also own a specific practice or a practice area globally.

The different companies have different views on what a global expert is doing within the organization in the Best Practice sharing aspect. Depending on the culture and the strategy within the company, experts are considered more or less important. Some companies also question the role of experts at different levels. Even if they can be of huge support at high-level in order to facilitate learning and knowledge sharing, they could also be a barrier for creating initiatives for sharing at a local level. The Lean thinking argues that the operators should be involved in the improvement work and two of the companies argue that the operators are the best to share their knowledge and their improvements to others as well. However, experts should be used to facilitate this sharing according to the companies that highlight the importance of letting the operators themselves share their knowledge at local level.

"It is important that not only experts are sharing. I think it creates a lot of ownership when those who have improved the practice can be a part of sharing the knowledge to others" – Company F

This view facilitates sharing of both tacit and explicit knowledge, which is important regarding practices associated with practical activities within manufacturing.

KPI benchmarking

Benchmarking performance of different practices is also a way being used, when applicable, for identification of potential Best Practices, both at local and global level.

KPI benchmarking as potential identification of a Best Practice is being used in different forms within the companies, but highlighted as a method by Company B, D, E, F and partly G.

"Then we are looking at KPIs, showing what machinery works the best. We are working very much with benchmarking and how to do things in the best available way" – Company D

Among the difficulties with KPI benchmarking is that all practices are not easy to link to specific KPIs, some are hard to quantify at all and are being undiscovered. Another difficulty, especially between different sites within a company, is that all practices and processes might not be measured in the same way. Also the different contexts and the different conditions at different sites might make it difficult to compare. Company G even argues that it might not be strategically correct to compare KPIs between different plants as different plants might have different objectives. One plant might for example be highly automated while another has high manually work as the labor costs in the different countries differ. Hence, the different factories might not have the same objectives. However, this might differs depending upon the overall strategy of the business.

The advantages with such an approach for identification are that it might be easy to compare different practices. It might also be easy to identify applications for the practice. Identification by the use of KPI benchmarking also facilitates a fast evaluation phase later on. KPI benchmarking also makes it easy to see what impact the implementation of different practices might have. Is the improvement worth it or not in real numbers in terms of performance improvement later on?

The companies working with KPI benchmarking use this as a complement to other methods as well. This facilitates that different methods can be identified and a combination between quantification and qualitative judgment is being achieved. Different methods are being used for different purposes and practices.

Networks

Networks within the companies, both of functional and cross-functional character are commonly used as a way to identify potential Best Practices, used by all participating companies. Networks provide contact points between units, departments and different plants. Those contact points are extremely valuable when trying to capture practices that could be implemented at different places within the company. Networks provide an opportunity for benchmarking, both regarding KPI benchmarking, but also benchmark of practices and performance within intangible aspects.

"You do different kinds of case studies and present in the network; this is what we have done and this was how it appeared to work out. It is very effective and you can then pick what is needed right now, the results should be the drivers" – Company D

As the networks provide not only KPI benchmark, but also a possibility to discuss the practices and the knowledge, it is possible for the representatives to choose the practices

that are most important for them in their context and setting. The adaption to the own organization can be discussed and applied directly, which can be beneficial. In many cases, the networks are quite systematic and structured by some global organization in order to be as rewarding as possible for the participants. The networks therefore sometimes also hold training sessions and educations in some specific, interesting areas.

"It is not only a network, but also education and training for the participants. And you establish a contact with those people, which remains afterwards. If you have problem, then you can discuss it with those people" – Company E

The networks also provide relationships between people that might not have met otherwise. Those relationships are highlighted as extremely important in the work with improvement and problems within each factory. The networks work as opportunities for identification of Best Practices themselves, but also provide the relationships needed for future identification.

"Then we of course have meetings with representatives of other sites. We call each other, we talk and share knowledge" – Company G

In the future, when an initiation of identification occurs, for example a problem within a factory or a bigger change of any kind, the relationship facilitates the identification and the sharing and transfer of knowledge and practices. This is even more obvious at different plants, where representatives can get a relationship. This relationship can be used for future regular meetings used for identification of practices and discussions about the different operations, as well as informal phone calls if needed. Hence, personal relationships provided by network meetings are important for sharing of Local Best Practices between the different sites.

"It can be as easy as sharing Best Practices between the sites, locally" – Company E

Site visits

The idea of site visits is to go out in the operations and really see how the activities are carried out and what good ideas and practices there are at other sites. In addition to having meetings and discussing with representatives from different units, site visits also provide an opportunity to visually see and understand specific practices. Viewing site visits as opportunities to identify potential Best Practices is done by four out of the seven companies.

Those site visits can be initiated for different reasons. Some are that KPIs have shown that a site or a team is especially successful within an area, site visits can then be used to identify practices associated with this success. Site visits can also have their origin in problems of one site, as visiting another site can provide inspiration for a solution. Site visits can be carried out on a regular basis with the objective to continuously learn from each other. Those regular visits could be either locally, where production managers for example visits each other's units on a regular basis, or globally, where plant management visits each other's units as part of a more formalized process.

"All production managers walk the whole manufacturing flow with us once a week. They can also identify good things while doing so" – Company G

Global site visits, visiting plants at another, geographically distant location, are obviously not being scheduled as often as locally site visits. Network meetings taking place at some plant, which includes walking the manufacturing and try to find and share Best Practices, can be one way of visiting each other. The site visits provide a common understanding within the group or the network of each other's business, building a common basis for further discussions and site visits in the future.

"We go visit each other, we do that often" – Company G

When performing site visits, many of the companies stress the importance of being open to new ideas and being humble. Being open to share the own knowledge at the same time as keeping an open mind for other ways of thinking is a balance which must be kept to be successful and benefit the most from the site visits.

"Visit the division and see how it has developed while identifying things that seem to be good ideas. Then we are trying to share it and use it within our division" – Company E

"We are good at different things, sure, we are good in some aspects but in others we need to improve. Then, try to go visit, do a site visit in order to get the "Aha" experience". – Company F

The idea of everyone being good at different things is the basis for site visits for all companies and a requirement for being able to learn from each other. This is especially obvious on local level. Different plants and different units have focused on different processes and are in different stages of the development and the process of improvement of different practices. Those differences are what make site visits so powerful, as good ideas can be shared from both sides.

Smorgasbord

As stated in many of the methods being used for identification, those methods provide a palette of different practices to choose from. This enables adaption to each organizations specific settings. By providing a smorgasbord of practices, representatives of different plants or teams could use their knowledge about the context and apply it on each practice. The view upon Best Practices sharing and identification as a smorgasbord is most commonly used on local level, six of the companies argue that by identifying which practices that could be applicable and chose them from the palette, the identification of potential Best Practices for each site could be result driven, and driven by the needs of that specific plant.

"It is a possibility to show Best Practices, in fact just as a sort of palette from which you can choose" – Company D

The smorgasbord provides possibilities for benchmarking, both formal and informal. It also gives the opportunity to be open to new ways of thinking and at the same time

knowledge can be shared in two directions. The smorgasbord can also facilitate communication between different units or plants.

"It is this double perspective with benchmarking; You take a lot of candies out of the cake, a lot of smaller things, and you share your knowledge in exchange" – Company F

5.2.3 Impact of global and local perspectives on searching for potential Best Practices

What initiates identification or searching for Best Practices is quite similar on local and global level even though the detail levels differ to some extent. The biggest difference lies within who has the responsibility for making the practice work. At local level, local representatives with responsibilities for a specific area, for example a factory, should handle the situation. At global level, when for example the company has acquired a new factory, the responsibility lies at a higher level. Hence, at local level, the continuous improvement work can be a starting point for identification of potential Best Practices. At global level however, the starting point for identifying Global Best Practices is more often specified improvement projects rather than day-to-day smaller improvements. The reason for this distinction is that the cost associated with a change within Global Best Practice is higher compared to a change within a Local Best Practice. Larger improvement projects must also make sure that the change works in different settings and with associated processes and functions.

"Often it is created by a project that wants to improve something. … Then the project presents an improved process." – Company B

Changes are initiating search for Best Practice both at local and global level. Also regarding changes, the scope of the change influences on what level it is being handled. Some changes can be handled by the factory itself, while bigger changes require global projects and global involvement. This can be linked to how the manufacturing strategy is handled based upon if there are infrastructural factors or technological processes being in focus for the change. Technological processes are associated with high costs and investments (Hill, 1986). The infrastructural decisions are essential for the manufacturing strategy (Wheelwright, 1984), but are often handled locally if not related directly to the higher investments associated with changes in machinery or bigger changes in facilities for example.

A smaller change, being handled by each factory can for example includes insourcing of a smaller process. A bigger change handled globally, that requires much resources and intensive work to make it successful, can for example be an acquisition of a new factory. Hence, how a transformation project is handled differs a lot from how a smaller, local change is being handled.

Looking at the identification of potential Best Practices, the ways of doing so differ depending upon if the perspective is on global or local level. A reason for this is most likely that the different perspectives are focusing on, and looking for, different kinds of

practices. The difference lies within the scale and the amplitude of the required or identified practice. At global level, the practices being focused on are the practices that can enable synergy effects for the whole organization and improvements or cost reductions by harmonization of practices world-wide.

At an overall level, the Identification phase is more in focus for the local perspective of Best Practices. At local level, practices are shared both within each factory and between those in order to identify and improve the different units and their performance.

However, at global level, identification of Best Practices is often limited to bigger improvement projects, experts, or the process networks. The influence of the IT system is in this phase high. What is being considered as a potential Best Practice is associated with what the IT system allows by at least three of the companies. The reason for this is the high investment associated with changes or redesign of the IT system. At an overall level, the IT system to a large extent dictates what the working process should look like.

It can be difficult to benchmark different Local Best Practices to each other when developing a Global Best Practice as the detail levels are different. Also the context dependency for Local Best Practices is influencing. Some searching for Local Best Practices when developing a Global Best Practices might occur. It is however quite rare it is being done comprehensively in the searching phase. In order for the Local Best Practice to be globally applicable, the solution must be compatible with the globally used IT solution. This is especially true if the company works with the same systems globally. If the company does not, like two of the companies in the study, the company is often quite decentralized in the IT use and also in general, with different demands and processes at different places around the world.

To share knowledge and identify Best Practices between local plants, there are many different ways that complement each other as they are focused upon different kinds of practices. A rough division can be made by practices that can be compared quantitatively and those which are better to compare qualitatively. Those different practices, and different parts of the practices are identified using different methods and different ways of working. Those can be both formal as well as informal and handled both systematically and structured as well as ad-hoc between people with individual relationships at different plants. A general conclusion about Local Best Practice and identification of such practices is that the companies commonly seem to handle this by trying to formalize the opportunities for people to build personal relationships. This is made by networks and meetings, which facilitate contact points between teams and plants as well as targeting site visits.

Table 7 - Impact of Global and Local Best Practice perspective upon the searching of Best Practices

Local level	Global level
Improvement work	Improvement projects
Problem driven	Problem driven
	Strategy
Changes	Transformation/Changes in organization or in products
KPI benchmark	KPI benchmark
Improvement work	Improvement projects
Moving people	Experts
Functional and Cross-functional Networks	Process networks
Site visits	IT

5.3 Evaluation

After potential candidates for a Best Practice have been identified, the different options must be evaluated. The evaluation ends within a decision, which can be of different kinds and result in different ways forward.

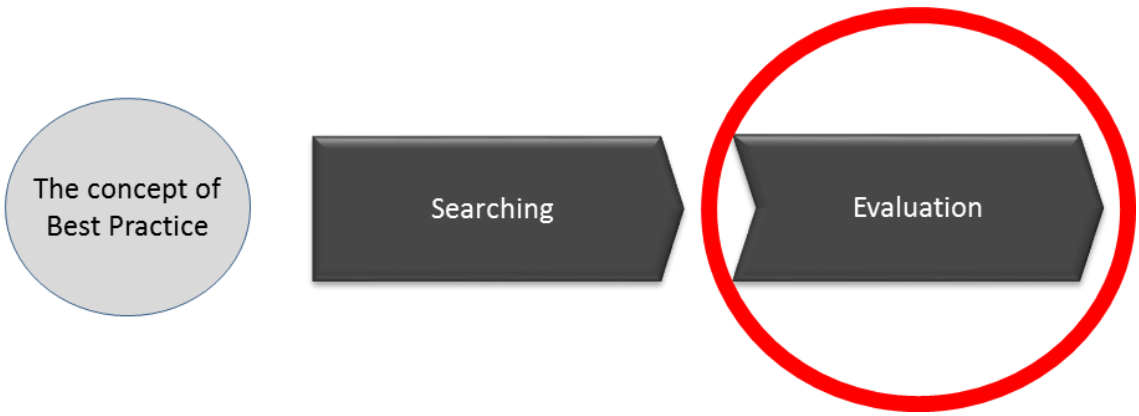

Figure 14 – Evaluation

5.3.1 Evaluation methods and process

The evaluation basis and the methods being used differ quite much in the different companies. The reasons are many, for example can the definition and the objective with the Best Practice approach influence how it is done. In this stage, the link to the strategy is important. Different methods are described, which are often used as complements to each other. The methods should not be seen as completely independent.

"We say that all the individual measurables are important. We try to find a balance between them." – Company A

However, there is a distinction between how the evaluation is being made dependent on the level within the company. Different companies tend to use more or less quantifiable

evaluation basis for decisions depending upon how the company is governed. For example there might be differences depending upon how much the company focuses on harmonization between different plants. Some companies tend to focus on Global Best Practices while others advocate Local Best Practices and sharing of such for inspiration and improvement.

Experience

Experience is being used for evaluation of potential Best Practices in different ways. Company A, E and F highlight the use of experience when evaluating practices. Experience can be used as the only evaluation, this is often done when it is important that the evaluation process is fast. As the people within the companies often have a lot of experience within the specific field, as well as extensive knowledge about the own processes, experience based evaluation works pretty well as a way to fast evaluate a practice.

"Evaluation… I would maybe not call it that. It more about what we feel and thinks about it" – Company E

In some cases, it is encouraged by the management to use experience and individual knowledge to take a decision. This can be connected to the view upon Best Practice as a basis for improvement. Experience, knowledge and the feeling from people with a lot of competence are, especially at local level, important to use in order to make the evaluation process fast.

"Our CEO has been telling us; do not wait for 100 % of the data until you make decisions. Sometimes you can go on your gut feeling and common sense." – Company A

Different kinds of knowledge, both tacit and explicit, and the different aspects of the practice must be considered when taking a decision at lower levels. Those different aspects are easier to capture for discussions if starting the discussion in the feeling and experience of different people.

"Some things are almost impossible to measure, because they are more linked to the individual preferences" – Company A

Often, the people taking the decisions at local levels, are the ones that have the most comprehensive knowledge about the context; the ones working with the processes. As the definition of Best Practice at local level is closely connected to the context dependency, this is an evaluation method preferable in many cases. The use of experience as a basis for evaluation, is especially true about Local Best Practices. Even though sometimes combined with some quantifiable data, companies are highlighting experience as a basis for decision.

"We have all been in this for so long that we know if it is good or not" – Company A

On the other hand at global level, other evaluation basis are more frequently used as main methods, even though those methods are being complemented with experience and

individual knowledge. By combining experience from different functions and expertize, it is possible to design a basis for further decisions and the potential implementation of the practice.

Discussions

To discuss advantages, disadvantages and impact to other processes is a natural part of the evaluation process used in different ways in all companies. Discussions are not a basis for evaluation, but rather a method for processing the different inputs. Discussions are carried out in different forums and in different aspects depending on the area for the practice as well as at which level a decision should be taken about the Best Practice. In some discussions business cases are in focus, in others it is the impact of the practice for other activities. Those impact discussions are often carried out in cross-functional meetings or within a process network.

Discussions about practices and evaluation of such at local level, in the teams, are often based upon experiences and feelings towards the practices. Important to remember in such discussions is that there is not always one Best Practice and it can be hard, or impossible, to define what is the best.

"It is not always possible to say objectively what the best is" – Company F

Applicability

Especially at global level, the question of applicability is topical and argued to be an important basis for Best Practice transfer by Company B, C, E and G. The meaning of applicability could be different, but for example Company C and B, the practice is applicable if there is existing a closely related process connected to the practice within the factory.

"It is where it should be discussed; is this practices applicable for us?" – Company C

For example, if the factory has a final assembly, the practice for such activities is applicable and should be used. There might be some deviations depending upon legal requirements in some specific countries for example, but the rule for company B and C is; if it is applicable, it should be implemented and used.

"Sometimes there are economic requirements from the government and then it is not possible to use the practice, but the ground rule it that we implement it if it is applicable." – Company B

However, it is important to identify where the practice is applicable as this can influence the decision. In order to develop a Global Best Practice, it is important that the practice is applicable at most sites. If the practice is not applicable at most sites, there might not be a Global Best Practice, but instead a Local Best Practice, if necessary to keep the Practice at all.

Strategy

The strategy aspect can either be pointed out as an own basis for evaluation, or is seen as a part of other methods. Company C highlight the impact of strategy, and so is also done by Company G. At local level, the strategy of the factory is the one getting most attention when evaluating a potential Best Practice. The manufacturing strategy for that specific factory is what specifies what will be the focus for improvements and resources for example. What practices to invest in are hence dependent on the strategy, both the business and global strategy and the strategy for each individual site.

Business case

Business cases are used to structure the evaluation process and to show the impact of the different practices upon various factors. The business case contains different perspectives and factors, which are investigated and described. The business case can have different definitions in different companies, even though the basis for the business case is some kind of quantitative evaluation described by Company B and C specifically.

"In the end it is the strategy and the business case" – Company C

By building a business case, it is possible to show different decision makers the impact of the practice. The improvements of the practice can also be compared to the resources and the investments in implementation. More extensive business cases are mainly used for bigger changes, for example for Global Best Practices and for bigger Local Best Practices, and are highlighted for evaluation by two of the participating companies.

At global level, business cases are built up to be able to make a decision. Sharing of Local Best Practices between sites might not always contain extensive business cases, taking different aspects into consideration. Evaluation of Local Best Practices could be made based upon case descriptions as well, used as vocabulary by for example company D. Those are not always as comprehensive as a business case, but provide information about the practice in that setting where it has already been implemented. Such smaller and more limited versions of Business cases are being used by all companies, more or less.

"If you have a change idea, you should have a business case in order to show that the idea is good. Most often you can only show it for your part of the business. If it should be a really strong business case it should be lifted up further" – Company C

If the Local Best Practice is lifted to higher level, and is possible to quantify, a business case might be built to show the impact for the overall business and for the implementation at the different sites, where the practice potentially could be used.

KPI Benchmarking

KPIs of different kinds are being compared in the evaluation of potential Best Practices in addition to being used for identification. The comparison can be made both compared to the current practice, if there is a comparable one, or between different potential practices in order to find the best one. The focus with KPI benchmark is to quantify the

results and the improvements gained from the practice in order to be able to see the influence of the practice for the overall objectives for the factory or the organization. Such KPI benchmark is related to the use of business cases in the evaluation and can be seen in Company B, C, D and G.

"How does it give us improvements, does the practice gives us better KPIs?" – Company B

KPIs and correct measurement are extremely important when taking decisions influencing several plants and used especially when talking about Global Best Practices. They are also very important when the practice is influencing other processes. To measure and quantify the effects of the practice and the implementation is a way to know that the decision is not associated with too high risks or difficulties that might result in high costs.

5.3.2 The decision being made

How the decision is being made differs between local and global level. When a decision about a Global Best Practice is taken, it is *the* Global Best Practice that should be implemented and used world-wide at all sites where the practice is applicable. At a local level, the decision regards changing a standard or to create a new Best Practice for that specific process. The operators should always work according to the standard, but it is possible to change it quite easily. If there is not any bigger investments associated with the change nor any other processes, this could be done quite fast.

It is important to remember that it is rarely one decision taken in a Best Practice process, neither on global nor local level. It is more often a series of different decision in order to decide if a practice should be considered a Best Practice or not. It can for example be argued that a decision is already taken when starting searching for a Best Practice. The decision described here is focused upon the decision about what practice is to consider a Best Practice or not being taken after an evaluation.

Test and validate

Among company A, D, E and F, a common decision at local level is to test the new practice for a specific period of time and then validate whatever it was a better practice than the old one or not. This decision and way of working facilitate a quantification of practices and benchmarking of different alternatives. In some cases, it is not possible to get all data that could influence a decision on beforehand, or it takes considerable resources and time to do so. By testing the new practice and thereafter validate and evaluate it again, benchmarking is facilitated.

"Either you decide directly, or you test both and then evaluate them" – Company F

The loop goes back again into the evaluation phase in the local level as a new evaluation is carried out after testing the new practice. If the new practice is considered better after testing and validation, a new, second decision is taken about changing the standard and to implement the new Local Best Practice. In some cases, this is done within the unit for

example, but in some cases it is also implemented within the whole factory and communicated to other plants as well. This sharing and overall implementation is especially carried out when the test was considered especially successful and if it also gave some quantitative measurement of how much better the new practice was, described by Company G. When having tested different practices, and produced some more data about it, it is often easier to communicate it higher up in the organization, in order to share the knowledge and the practice between factories. In some cases, this can also even result in a potential candidate for a Global Best Practice.

As it is hard to say what is best objectively in some cases, the decision to test different ways of working and then compare them afterwards enables all people to understand the different aspects of the practice; both tacit and explicit aspects of the knowledge connected to the practice. In addition, after the testing, the decision might be that the practice is not optimal and splendid, but it works as a basis. In some cases, the practice might not be good, but it might be the best one available. As it is considered important to have a starting point for further improvement, the decision can be to implement it anyway.

IT involvement

A main difference between decisions regarding Global Best Practices and Local Best Practices is the involvement of IT. At a global level, company B, C and E argue that IT is often involved as the practices are dependent upon systems and the interfaces between different departments. At a local level, IT is rarely or never involved directly. The reason for this is that when a practice is identified as a potential candidate for a Best Practice and the practice involves some change within the IT system, the decision must go much further up in the organization as changes in the IT system cannot and should not be made by individuals at different sites. The reason for this is that IT is associated with high costs and high investments and a change requires considerable resources.

"It is what the distinction is. If we must change the system, there must be a global change, at least it has to be put up to that level. If such a change is not required, then it is a local way of working" – Company C

In general words, the research indicates that decisions taken on global level as well as local level in IT-harmonized companies are hence being divided by the IT influence on the practice or the absence of such direct influence.

Basis for further improvements

The view on a Best Practice as a basis for further improvement is affecting how a decision is taken, especially at local level. All the companies that use the test and validation decision to further validate and evaluate a practice (Company A, D, E and F) are arguing that the Best Practice approach provides a basis for further improvement. The basic assumption is that standards should always be followed, but they can be changed and improved further. When taking a decision about a Local Best Practice, this indicates that there is a decision about a common starting point.

"It is important that there is a standard, but a standard is not forever since it can always be improved." – Company A

In this aspect, it is very clear that the definition used for Best Practice influences the whole process, from initiation to a final decision.

"Is it something I have learnt, it is better sometimes that you try something rather than to wait too long and never implement them. It is better that you implement it and then improve it further." – Company E

When sharing knowledge between different local sites, this is also being used when taking a decision. As Local Best Practice at one site might not be the exact Best Practice for another site, the practice has to be adapted to the specific context and the conditions there. Also in this aspect, when transfer of practice between plants is taking place, the view on a Best Practice as a starting point for further improvements influences the decisions being taken. Local Best Practices are often seen as a palette to choose from. From the palette, practices can be implemented and then further improve to fit the individual factory's requirements, culture and organization. This is especially obvious in quite decentralized companies with a lot of different divisions and operations at different geographical locations.

"Our mission is to put the decisions at the lowest possible level in the organization, and it is important. (…) It creates an effectiveness and an interest of making improvements" – Company G

5.3.3 Impact of global and local perspectives on evaluation of potential Best Practices

In very general terms, the difference between evaluation on local level and evaluation on global level is that the process on local level is more focused on qualitative basis while global level evaluation tends to includes more quantitative assessments criteria. At local level the objective of the process seems to be to get a speed in the improvement work, when the potential Best Practice origins from improvements. Hence speed is the focus and as measurements can take quite long time, if data are not already available, experience is used as basis for evaluation. In addition, at local level, there might be some cases where it is hard to quantify as the improvement is better from a quite subjective point of view for example. When evaluating such practices, it is better and easier to make a qualitative assessment.

At local level, when sharing practices between different plants for example, the Best Practice approach is more seen as a palette. Even though some KPI benchmark and quantitative assessment is a basis for initiating the searching for a Best Practice, the evaluation of candidates is mostly qualitative. The evaluation is often made locally by the factory management or the teams themselves, considering the sites own settings and their context. Between different sites at local level practices, the palette of the Best Practices used locally, are more often considered just a palette to choose and get inspiration from.

Each unit can then choose the practices fitting their context the best. This is highlighted by use of the concept of Good Practices.

"It is a lot about local level, on individual level, depending on the unit's needs" – Company E

However, at a global level, when evaluating more high-level and investment demanding practices, a quantitative evaluation is often necessary and needed to ensure that it is the practice that best fits the overall company and other processes and systems being used. Also, at global level, the factor of applicability at different sites and different parts of the company must be considered. It is not always the case that the company can use the same practices everywhere, as some factories might not even have the specific process to which the practice is being linked.

While local level sometimes applies case descriptions, including some quantitative data and comparison if applicable, more extensive Business cases are being developed at global level. The evaluation phase regarding a Global Best Practice is quite heavy compared to the evaluation process at local level. Since the implementation of such a Global Best Practice is more extensive and requires higher investments, it is important to get it right. This means that it should be working with all other processes, it should applied where it is applicable and that it works with the IT system, so the organization can be supported. Discussions between different functions are carried out, with discussions about how the practice might affect other processes and the supporting systems.

How the decision is taken and the start of implementing the Best Practice, differs quite much between local and global level. This is depending on how large part of the organization is being involved and affected by the Practice, the implementation of such and what the focus is for different kinds of Practices and the implementation of such.

At a global level, there is considered to be *the* Best Practice within an area. This practice is often quite high-level and there is often a large impact of IT/IS if there is not a policy question or any practice of "softer" character. When IT is involved in a Practice, it in many cases dictates how the work should be carried out. IT also forces the work with standards and standardization to some extent and some companies even say that having the same systems is a requirement to be able to work with Global Best Practice and harmonization of Best Practices. Others say that the system drives the work with standardization as the needs and the demand for standards becomes bigger.

"You are more or less forced by it. As soon as associated with an IT system, we are also better in sharing and documentation" When it comes to softer aspects, where it is not as steered, it is more dependent upon individuals" – Company C

At a local level, the standards are considered as a basis for further improvement. Decisions often involve a testing carried out for a limited time in order to evaluate the potential practice or practices once again. When a final decision is made, the standard will be changed. The mandate for changing a standard is on as low level as possible within

most companies, as all teams own their own standards in order to create incentives for improvement.

Table 8 - Impact of Global and Local Best Practice perspective upon the evaluation of Best Practices

Local level	Global level
Qualitative basis	Quantitative basis
Case descriptions	Business case
Discussions	Discussions
Palette	One Best Practice
Experience	Applicability
Testing	Final
Improving	Pilot
IT rarely involved	IT often involved

5.4 Model of the early stages of Best Practice transfer

Based on the theory and analysis of the empirical findings, a model of the early stages of the Best Practice transfer is developed, where all on each other following steps have interdependencies. The upper part of the figure 15 shows the definitions of different steps used in the theory. Both the searching phase and the evaluation phase described by Jarrar & Zairi (2000a; b) can be seen as the initiation phase of the transfer described by Szulanski (1996). What the model does is to break down the process to an even lower level in order to analyze the interdependencies between the different phases. The model applies to both global and local level of Best Practice transfer because it is general at the overall level.

The definition and the objectives can also be seen as the overall concept of Best Practice described in the literature, with various concept used in different settings and contexts (see Dangayach & Deshmukh, 2001; Silveira & Sousa, 2010; Wellstein & Kieser, 2011; O'Dell & Grayson, 1998; Jarrar & Zairi, 2000a; Szulanski, 1996). As the upper part of Figure 16 shows, the searching phase in the Best Practice transfer is the first step in (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b). This searching step in the developed model is further broken down to lower, interdependent levels; initiation of identification and identification. Where the searching phase ends, the evaluation phase takes over (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b), in this model seen as evaluation and decision.

The by the companies used definition of Best Practice is affecting the objectives of using such an approach. Further, what initiates the searching and the work with identification of potential Best Practices are influenced by why the companies are working with such an approach at all. The identification of potential Best Practices is affected by why it was initiated in the first place. After identifying potential Best Practices, the searching phase moves into the evaluation phase (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b). The ways that potential candidates to a Best Practice have been identified are influencing in what direction and to which forum the practices are being further escalated. This, in turn, is affecting how the evaluation of potential practices is being made and where. In the end

of the evaluation phase, a decision is taken. This decision is a result and influenced by earlier decisions and methods used during the process.

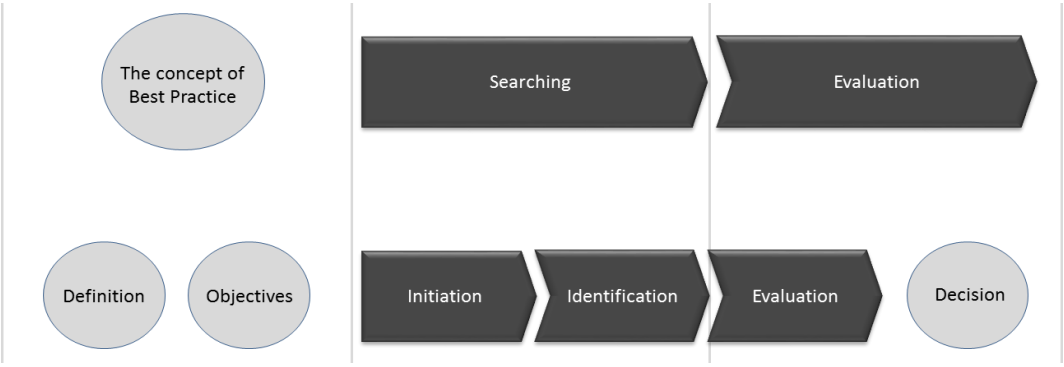

Figure 15 - The developed model of the early stages of Best Practice transfer

Key words for each company's way of working within each one of those steps are presented in table 9. The table is not making any deviation between Local and Global Best Practices within the company since the model is applicable for both perspectives.

Table 9 - Summary of findings concerning the developed model of the early stages of Best Practice transfer

Com-pany	Definition Best Practice	Objectives	Initiation	Identification	Evaluation	Decision
A	Standard Benchmark	Basis Improvement Predictability	Problems Improvement work Targeting	Improvement Site-visits Personal relationships Networks Experts ”Smorgasbord”	Experience Quantitative when applicable (Decision at lowest possible level)	Test and validation
B	Improvement Dynamic Standard ”Good Practice” Benchmarking	Basis Improvement Same structure	Problems Organizational change Improvement work	KPI benchmark Experts Networks	Business Case Applicability	IT often involved globally Validation
C	New Improvement ”Good Practice”	Basis Improvement Benchmarking Cost reduction	Strategy Improvement work Change of products Problem	Improvement	Discussions Business cases Applicability Strategy	IT often involved globally, rarely when locally

Com-pany	Definition Best Practice	Objectives	Initiation	Identification	Evaluation	Decision
D	Best Standard	Basis Improvement Same structure	Organizational change Change of products Improvement	KPI benchmark Global experts Networks Improvement Competence movement ”Smorgasbord”	Case descriptions in networks Discussions Benchmark of KPIs	Test and validation
E	Benchmarking ”Good Practice” Improvement New	Basis Improvement	Problems Improvement work Improvement projects Strategy Global Experts	Benchmarking-trips (Site visits) Networks Informal contacts – phone calls, email KPIs when applicable Smorgasbord Global Experts	Experience Applicability	Test and validation IT can be involved globally
F	”Good Practice” Dynamic and context dependent Standard	Basis Improvement	Change Improvement-work Problems Targeting informally	Improvement Site visits Networks Competence movement Smorgasbord KPIs when applicable	Experience Discussions	Test and validation
G	Standard Context dependent	Basis Improvement Synergies Quality	Improvement work Strategy Organizational change Change of products Setting targets	Improvement Site-visits Gemba walk Networks Competence movement Smorgasbord Personal relationships	Discussions Applicability Quantifiable	Pilot Basis

5.5 The differences concerning local and global level

Different words have been linked to different levels of using Best Practice sharing. There is the local level, with sharing between departments and different manufacturing units within a site or a smaller geographical area. There is also the global level, with sharing at a higher level, with solutions and processes being used globally within the firm. The work with Best Practice transfer varies between the different levels, taking different views upon the magnitude of the sharing. Table 10 shows examples of words used by the respondents linked to the different levels defined in this research.

Table 10 - Global and local level, Associated words

Global Best Practice Associated words	**Local Best Practice Associated words**
System thinking	Individual factory
Regional/Global	Local
Global Experts	Production Leaders / Operators
Processes / Solutions	Practices / Ways of Working
Harmonization	Standards
Process owners	Coordinators
Business case	Testing / Trying

The differences between local and global perspective on the Best Practice transfer lies mostly within the last three stages in the developed model as shown in Figure 16.

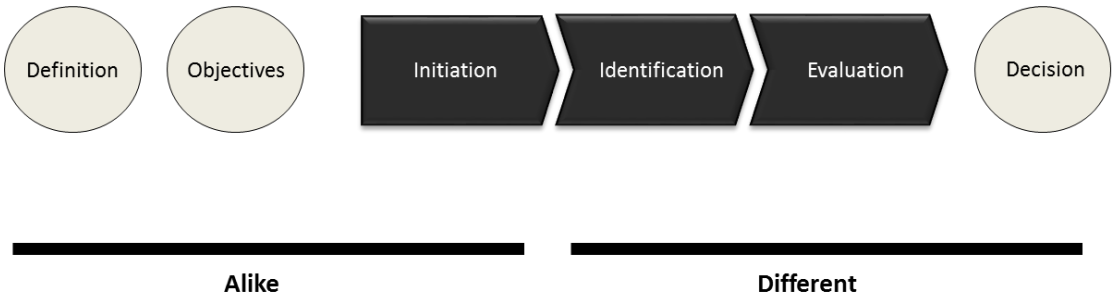

Figure 16 - The stages of Best Practice transfer in the perspectives of Local and Global Best Practices

The first three stages of the developed model for transfer of Best Practice; definition, objective and initiation of identification, are quite alike, no matter if it is about global or local level of the Best Practice transfer. There are differences, but those are at an overall level, the differences are within the detail-level and richness rather than in different ways of working. How the concept is being used regarding both definition of Best Practice or the objectives of a Best Practice approach does not differ, even though the focus sometimes are different. All companies agree on that Best Practice approach can be used as a basis for further improvement. In addition, it provides the same structure, potential cost reduction and synergy effects, especially regarding Global Best Practices. Those

objectives can be linked to the definition of Best Practices, which is described in 5.1.1. The initiations of identification are also alike and have the basis within the same things; Improvements, Problems, Strategy or Changes of different kinds.

Those stages are quite alike between the different perspectives, but the scale of the practice often differs. As the detail level of the practices differs between Global and Local Best Practices, this is hence influencing the overall process and especially the evaluation phase later on. The Global Best Practices are often associated with IT or Lean initiatives while Local Best Practices are associated with standards and operational activities.

In the later stages of the model; the identification, the evaluation and in the end also the decision, the situation is another. The different perspectives of Global and Local Best Practice result in different ways of handling the process as well as different ways to transfer the knowledge and the practices within the company. Different things are in focus and the main reason for this is the higher investments and costs associated with Global Best Practices.

The pictures below show associated words within each phase of the model at global level (Figure 17) and local level (Figure 18). As seen, most words within the definition, objectives and initiation phase are the same for both local and global perspective of the Best Practice transfer. Those are however considered at different detail level and the perspectives upon those words differ to some extent. In the later phases; identification, evaluation and decision however, the words differ.

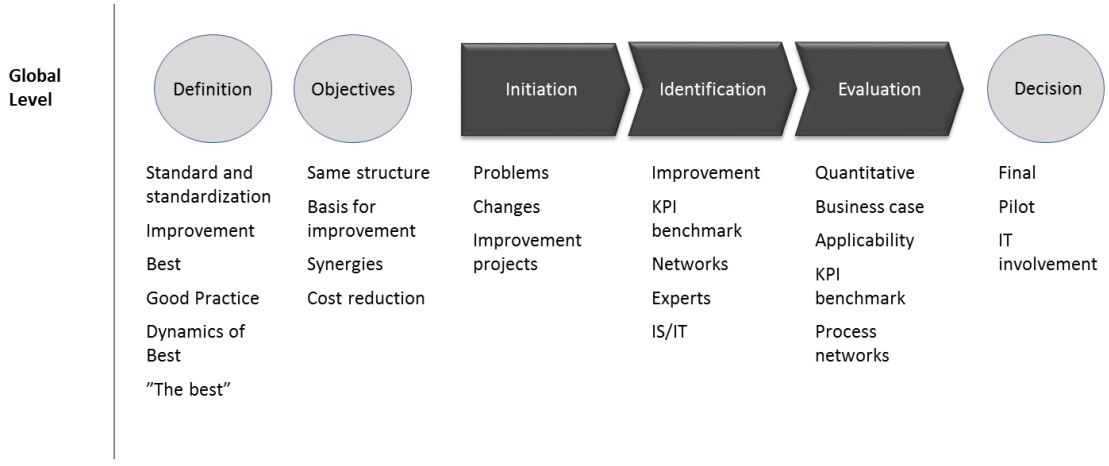

Figure 17 - The developed model considering Global Best Practices

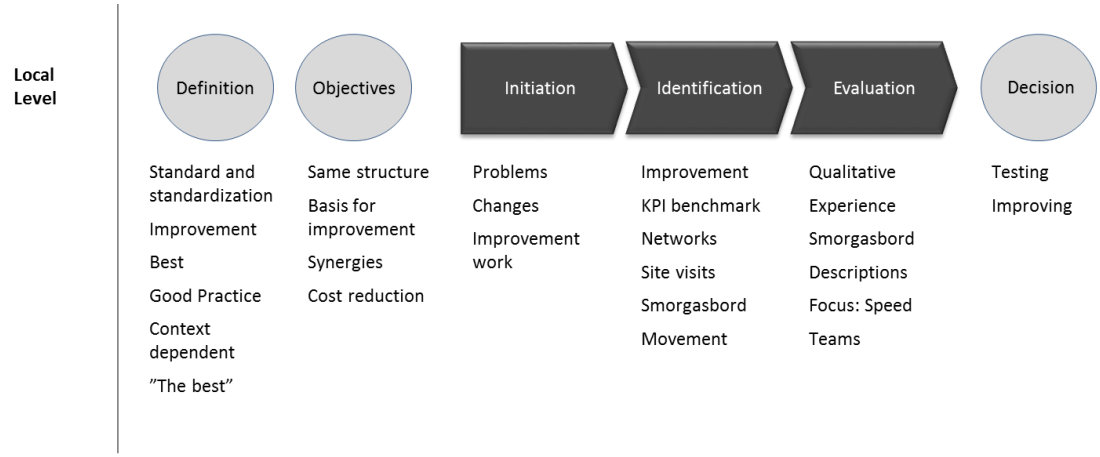

Figure 18 - The developed model considering Local Best Practices

5.5.1 Focus on identification or evaluation

At a local level, the focus tends to be on how to identify different practices. As the objective with the improvement work locally is to get many improvements and to be fast in implementing and use the improvements, this resulting in a focus of the identification phase. Many great ideas might come from the operator level and it is important to involve everyone in the continuously improvement work. This also creates a feeling of ownership of the processes in the manufacturing. At a global level on the other hand, the focus is more on evaluating the practice correctly, as choosing the "wrong" practice might result in high costs and problems at different sites. Hence, at global level, the applicability at different sites and building the business case correctly, if possible to quantify, is in focus. At global level, more work is put into building a business case that could show the impact and the improvement from the practice to various units and for the whole company.

At local level, the involvement and the importance of ownership at lower levels influence the overall process. The evaluation both at each local site and between sites at local level is less comprehensive than regarding Global Best Practices. The evaluation at local level is mainly based upon experience, even though some quantification might be carried out as well. Often, when associated to the way of working, a decision about testing the new way and then benchmark the result from the new practice with the old one can be a way of quantifying.

In general, the focus for local level is on identification, while at global level, a lot of effort is put into evaluation. The process for global level is more comprehensive and focused on quantifiable factors in order to "prove" that the chosen practice is the best.

5.6 Differences between Local and Global Best Practice concerning the analytical framework

The differences between Local and Global Best Practices is analyzed from the different perspectives presented in the analytical framework which is described in 2.11. A model of the Best Practice process based on the process described in 2.11.1 is already presented

in 5.5 and will be used as a basis in the center of the analytical framework. The analytical framework and the developed model of the Best Practice transfer will be combined as Figure 19 shows.

The following perspectives upon the Best Practice transfer will be applied, with analysis of the differences between Local and Global Best Practice; global manufacturing network, tacit and explicit knowledge, benchmarking and manufacturing.

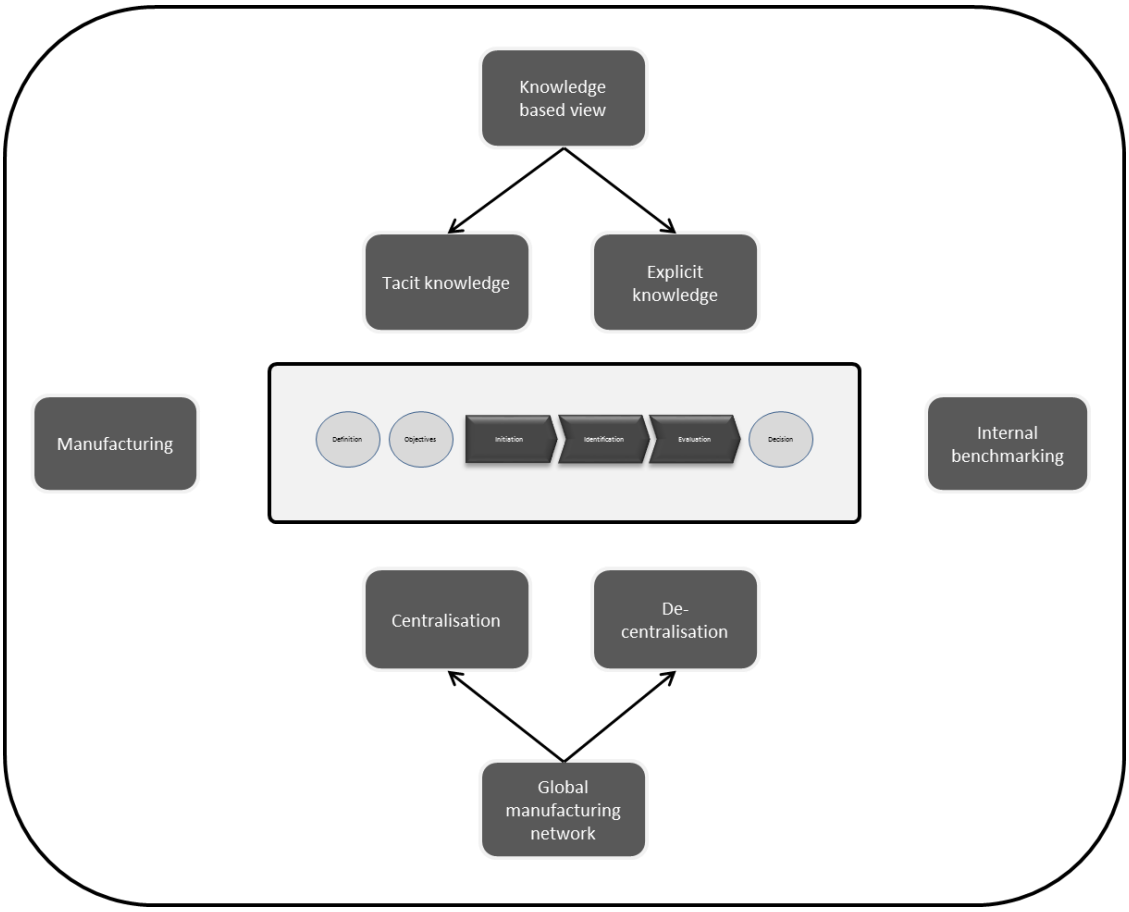

Figure 19 - Parts of the analytical framework

5.6.1 Global manufacturing network

IT is to a large extent involved in the differences between local and global level of Best Practices, regarding the global manufacturing network. The global manufacturing networks and to what extent the company's use of IT is harmonized or not is influencing how the company works with transfer of Best Practices. If the company uses a strategy where the IT system is harmonized, with the same systems used everywhere, the company is likely to be controlled as well as supported by its IT system when developing and transfer Best Practices globally. IT is supporting the work with harmonization as the systems often support and require a specific way of working. If the company have harmonized IT systems it is also likely that the company works quite a lot with harmonization of its operational processes and practices. Hence, Global Best Practices

are common and often associated with the IT system, which also makes it easier to transfer the knowledge to the local sites.

On the other hand, if the company does not have a harmonized IT system and especially if the company is built up by different divisions, with different kinds of products, the company is working more with sharing of Local Best Practices. The Global Best Practices are then more focused on the overall manufacturing system, often based upon Lean Production. It is also pointed by the companies out that different factories can have different objectives and should be used differently according to the manufacturing strategy. In cases when a practice or a new process requires a change in the IT system, this can be done quite locally. The costs of creating and designing an interface between IT systems are not considered as high as harmonizing the IT system, as this is being associated with high investments and risks.

The question about centralization and decentralization of the global manufacturing system in the case of Best Practices, is to a large extent a question about to what extent the company has harmonized IT systems. This question is also closely connected to the manufacturing strategy, which will be discussed in 5.6.4.

In literature as well as in this study, technology and IT system has been recognized as facilitating factors for a Best Practice transfer (O'Dell & Grayson, 1998), even so, it also appears to be a barrier for the development of Local Best Practices into Global Best Practices as well. Hence, in the same time as it enables the transfer (Jarrar & Zairi, 2000b; O'Dell & Grayson, 1998), it in some cases prevents improvements to be used globally as the system does not support the specific way of working nor the idea of the practice. IT systems are hard to influence at a lower level in the company, where the new Local Best Practices are being developed. There is a gap between the levels within the company that can identify potential Local Best Practices to use and the level of mandate to decide about a change in the IT system to make it support the new practice.

"It is becoming more and more important. Then honestly it is getting more and more of a battle neck also, it is so much data flying around." – Company A

A main difference between Local and Global Best Practice transfer in companies with harmonized IT system, lies within the involvement of the IT system. When implementing a Global Best Practice, the involvement of the system facilitates the transfer and later the implementation. It also facilitates the sharing of the new Best Practices and communication between departments about it.

"It facilitates it since you talk the same language and use the same terminology. You get support from the IT systems" – Company B

In those companies, at a global level, the work with harmonizing the IT systems also results in harmonization of the processes associated with the IT system. When harmonizing and standardizing such practices, it is possible to get synergy effects and reduce costs associates with IT.

"It is a driver, it is the trend of course. It is a uniformity because there might be effectiveness in it. It is also because we should be able to improve overall, because everyone is working to improve the same things" – Company C

The degree of harmonization of the IT systems is closely related to how the Best Practice approach is handled within the companies, as harmonization of IT also forces a harmonization of the practices associated with it. Of the same reasons, not working with harmonized IT system enables more freedom for each individual site and makes it easier to work with Local Best Practice transfer and adaptions to different contexts of those.

5.6.2 Tacit and Explicit knowledge

Local Best Practice transfer in the company tends to involve both tacit and explicit knowledge transfer. Global Best Practice transfer is generally more focused on explicit knowledge, but the close connection to the IT system provides a frame for how to share the knowledge and how to work with the practices. The IT systems are supporting the way of working, even though the identification and the evaluation of Global Best Practices seems to be focused upon explicit knowledge, mainly because the scale of the transfer and the practice. Meeting in person and sharing tacit knowledge requires much resources and time, resulting in difficulties working with tacit knowledge on a global level. However, as the IT system forces a specific way of working, also tacit knowledge can be shared in some aspect. This can also be a reason why companies with not harmonized IT systems tend to focus more on Local Best Practice sharing than working with Global Best Practices as different systems make it harder to transfer all aspects of the knowledge. By sharing Local Best Practices in person, different types of knowledge can be transferred.

5.6.3 Benchmarking

Benchmarking is being used for both identification and evaluation of potential Best Practices. The benchmarking approach can be used in different ways within the companies, depending on what the objectives with the process are. Benchmarking refers to the process of comparing different practices to each other in order to find the superior one (Collin, 2006; Slack, Chambers, & Johnston, 2010). Also the practitioners refer to benchmarking in a quite broad meaning, using it for identification as well as evaluation, quantitatively as well as qualitatively. Even though this research focused upon the internal transfer of Best Practices, the findings indicate that the companies use both external and internal benchmarking in order to find Best Practices.

How the benchmarking is being used and when it is being used differs to some extent between Local and Global Best Practices. At global level, the use of quantitative benchmarking of different business cases, is done in the evaluation phase as well as looking for deviation in KPIs for identification. The KPI benchmark is used as an initiation for identification both at local and global level, as deviations can show that there might be a problem or a better way of doing something.

From a Local Best Practice perspective, qualitative benchmarking is commonly used in the evaluation phase, as experience is a common basis for evaluation. Hence, the experience and the knowledge of different practices as well as the settings are being used for comparison between different practices in order to pick the most suitable one. Quantitative benchmarking is also being used when applicable, especially in the identification phase in order to identify practices that are providing good results compared to other practices. In the evaluation phase, benchmarking can be used from a Local Best Practice perspective, by first taking a decision about trying the new practice out in the new setting. By doing so, it is possible to produce some quantitative data that can be used as a benchmark compared to the old way of working. This is also the case when a Local Best Practice should be shared between sites, as measurements might be hard to compare as the context differs between the different sites. A potential Business Case is often only built for the source unit. In order to be able to produce more quantitative data for comparison, the practice must be tested first in the new setting as well.

Qualitative and quantitative approaches towards benchmarking are being used as complements to each other as they provide different input and different perspectives on the practice. In some cases practices are hard to quantify, resulting in that mainly qualitative benchmarking is being used. This is especially the case for Local Best Practices, while Global Best Practice transfer more often uses both a qualitative and quantitative approach towards benchmarking.

5.6.4 Manufacturing

The manufacturing within each factory is dependent on different aspects such as physical layout with different processes, organizations and the workforce. Different units in the global manufacturing network never look like another in the network, different contexts are influencing. Context is considered especially important regarding Local Best Practices. This view on the context results in that Local Best Practices are associated with the manufacturing strategy of that specific factory and the settings there.

Global Best Practices seem to be associated with operations rather than explicitly manufacturing. The perspective is broader with less details regarding specific processes and ways of working within each individual factory, as the different factories have different settings and various objectives with the manufacturing. Those Global Best Practices, are high-level practices with connections to IT and other processes as well. Global Best Practice should be possible to apply everywhere, meaning that different expertise and knowledge must be involved in the decision and evaluation process. Global Best Practices are commonly considered as frameworks, often connected to either IT or Lean initiatives.

"It can also be how you are executing a bigger initiative, for example in forms of how to use the IT system in the best possible way and all the way to a lean company." – Company E

This difference in perspective of the manufacturing function and the overall operations function within a company is to a large extent influencing the process of handling Best Practices at different levels, as there are different objectives at different levels. Important however, is to remember that the strategy must be aligned with the operations. The strategy is influencing the work with Best Practices in general. The companies that are quite decentralized, often with different product types in different divisions at various plants, the objective is not to work too much with Global Best Practice as it is not aligned with the strategy to harmonize the operations globally. On the other hand, in harmonized companies, Global Best Practices and sharing of such are a natural outcome and result from harmonization of the IT systems and other processes. The important part is hence to link the strategy with the operations and manufacturing in order to align the strategy with the manufacturing and operations.

5.6.5 Local and Global Best Practices in the Analytical framework

Considering Local and Global Best Practices concerning the analytical framework, the different kinds of Best Practices can be seen as focusing on different parts in the analytical framework. In general it can be seen that Local Best Practices often are more focused on parts closer to the center, meaning that the perspective is more local and focused on details. Global Best Practices and the transfer of such are more high-level and focus on the overall performance of the global manufacturing network.

In Figure 20, the parts of the analytical framework associated with Local Best Practice are shown and in Figure 21, the analytical framework shows the parts connected with Global Best Practices. However, it is important to remember that those are just general conclusions and do not mean that Local Best Practices do not consider the other parts in the framework at all. The pictures should be seen as showing the differences in focus between Local Best Practice transfer and Global Best Practice transfer. Regarding the global manufacturing network, no conclusion whether Local Best Practices or Global Best Practices are being used within decentralized compared to centralized companies could be made in general. The reasons for this are that centralization and decentralization cannot be seen as opposites, but as two aspects at a scale. Harmonization of IT system, connected to centralization and decentralization, which appeared to be a contributing factor could also be seen as a scale, where it is hard to say that any company is either totally harmonized or not harmonized at all.

The harmonization of IT systems however, matters when it comes to Global and Local Best Practices, as harmonization of IT systems globally appears to force and facilitate the work with Global Best Practices. IT is influencing Global Best Practices and their design and development to a large extent. Those differences concerning detail-level are influencing the interaction of Local and Global Best Practices.

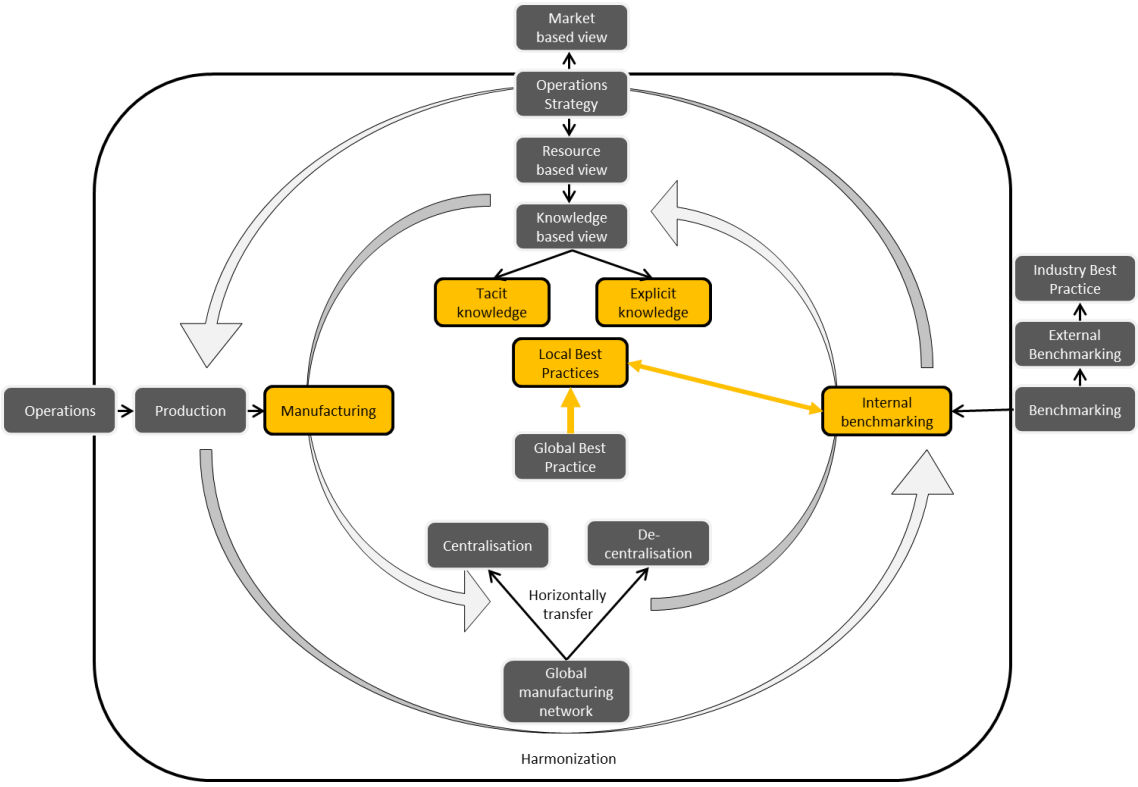

Figure 20 - Local Best Practices concerning the analytical framework

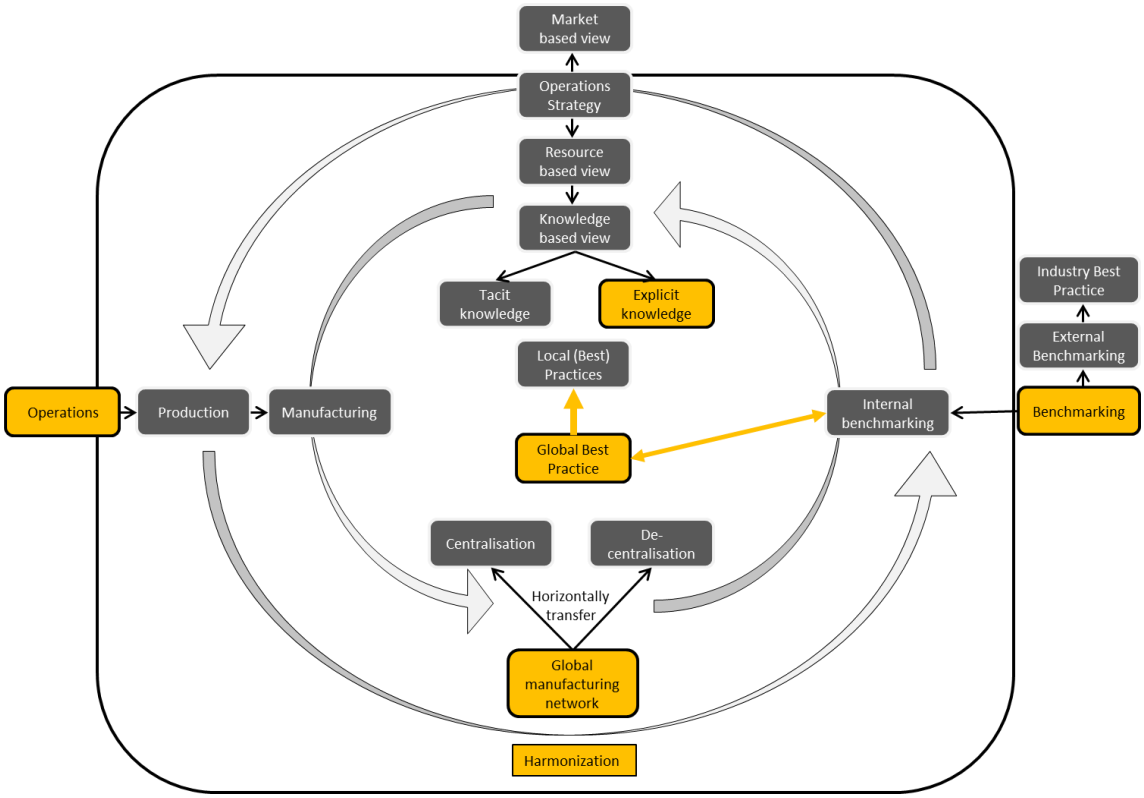

Figure 21 - Global Best Practices concerning the analytical framework

5.7 The interaction of Local and Global Best Practices

Even though it is aligned with the strategy of different companies to focus and work mostly with Global or Local Best Practices, the link between local and global level is still important as it is linking the overall perspective with the more daily and local perspective. This link between global and local level could also provide that knowledge from the different levels could be shared and combined. However, the interaction between local and global level of Best Practice seems to be missing.

There is an interaction between various Local Best Practices between different sites, where knowledge is being shared in order to improve the own factories. It is considered by all companies that openness and humbleness of both source and recipient of the practice is important. Harmonization of IT system can also be a driver for sharing of Local Best Practice between units, in addition to being a facilitator for implementation of Global Best Practices at local factories.

"When we implemented a new ERP-system, there were many challenges. It initiated the working with sharing standards and practices among the different units" – Company F

As mentioned above, developed Global Best Practices are being transferred to Local sites, and the link hence exists one way, as Global Best Practices is being used at Best Practices locally.

"Our overall global strategies must be implemented down to all units, not matter where the unit is located" – Company E

"Our system is identical at all factories. How to run the production is decided in our operating system" – Company A

The other way around however, using Local Best Practices as contribution to Global Best Practices, is not being made as often.

"It is rarely such practices are being lifted. It can happen, sure. (…) But connected to practical operations and activities, very rarely." – Company C

The reason for this is that there is different perspectives and detail-level of the different Best Practices. Looking at the different focus and the different perspectives of Global and Local Best Practices concerning the analytical framework, the differences are big. Global Best Practices are less often concerned only with practices within the manufacturing and the processes of technical production.

"It does not matter if there are on global level or on operating level, the way of working is the same. It is only the detail level that differs" – Company F

Another reason why the two-way interaction between Local and Global Best Practices to a large extent is missing is that the companies at different levels want to achieve a balance between flexibility to different contexts and ownership of the own processes at local level and standardization and harmonization at a global level.

"In the end, when it comes to details, there is no point in that the global organization dictates how it should be done. What we want is to start initiatives in which we give the overall framework for the local units" – Company E

The incentives for developing local practices are in some cases contra productive to the ambition to achieve Global Best Practices as the practices might be concerning the same operations. But, in order to be able to improve and to involve the people knowing the processes the best, there must be space for trying new ways of working locally as well according to all participating companies.

Hence, companies must balance those two aspects in order to be as successful as possible in adapting and working with Best Practices. All participating companies declared and described a global manufacturing system, defining the activities at different levels. Often, the processes were described at a quite high-level but also work as guidance at lower level. Those Global Best Practices are mostly regarding either IT or a global manufacturing system, such as Lean initiatives. Global Best Practices provide a framework for all units.

"There are those two we already talked about; the Lean initiative and IT system initiative" – Company E

The local teams have some freedom to develop their own processes, based on the standards and the global solution. At a general level, the companies try to work with harmonization of their processes at a higher level while allowing some creativity to develop own standards at the different departments at a local level. The reasons that companies want their local departments to develop own processes and to take the decisions on as low level as possible are two; First, there is the involvement in the development of standards and the possibility to influence their own working environment. The sense of ownership contributes and ensures that the local standards are being followed, which is considered very important. One respondent expresses it:

"There must be a standard, but it should be for the convenience of the team. They can decide their own standard, since it is when they do so they will follow it" – Company A

Secondly, the daily users of the processes have a lot of competence that can be used in order to improve the practices and the way of working. By allowing the local sites and the local teams to partly develop their own processes, they can contribute in the improvement of the processes. Again, the used definition within the companies is to a large extent influencing this; as a Best Practice is associated to the concept of standard and "best" is relative and will not last forever, a Best Practice gives a basis for improvement.

"If there is coming dictation from top, they will do it, but not anything more. But if you have been engaged in the development of the process, you will not only use it, you will also engage in the future development of the practice" – Company A

When each individual site is used to being quite self-dependent, it can be hard to have to adapt to a Global Best Practice, especially if the Global Best Practice not result in a better practice in the specific context.

"You are used to choose by your own, to do what is optimal for yourself, and it is hard to realize that what is best for the company at whole might not be the best for each unit. And it is hard since you do not want to go back in your development." – Company C

The desire to develop a Global Best Practice and to make everyone work according to it could be difficult to combine with the desire to let the local departments develop their own practices, based upon their knowledge and creativity, if the practices would be on the same detail level. Hence, the companies tend to focus on either the Global Best Practices or the Local Best Practices. If the company focuses on Global Best Practices, those can be on a quite detailed level. In such cases, the companies do not talk as much about sharing Local Best Practices between sites. On the other hand, if the company works mostly with Local Best Practices in addition to high-level Global Best Practices, for example regarding Lean or Management systems, the sharing of knowledge and practices between different sites are more commonly discussed. This sharing of Local Best Practices between sites can be both a formal and informal process. However, informal relationships between individuals and groups seem as a large source of knowledge sharing between units.

"It is not a formal process, but I give him a call if I need to and he calls me if he needs to" – Company A

For those companies that focus a lot on Local Best Practices, a trend seems to be to arrange networks and meetings for people at different sites in order to provide a forum for knowledge sharing. Those forums result in both formal processes of practice sharing as well as informal contact points between individuals at various factories.

Local Best Practice sharing between different factories tends to be viewed as a palette of different practices, where the best one can be chosen to be brought back to the own factory. Those practices are then adapted to the specific context in that factory.

Figure 23 shows the interactions between Local Best Practices at different factories as well as the link between Global Best Practice and Local Best Practices. The link between Global Best Practices and Local Best Practices are mainly one-way, even though Local Best Practices sometimes is being used as a basis for the development of a Global Best Practice. This is most often done when there is no Global Best Practice in place at all and a new has to be developed, as it can be easier to take an existing practice than to develop one from scratch. However, it seems as it is rare that many different Local Best Practices are being benchmarked.

Figure 22 - Interaction and transfer of Local and Global Best Practices

6 Discussion

In the Discussion, the theory is compared to the analysis and findings from the research. The results of the analysis are discussed from a theoretical as well as a practical perspective with basis in the developed model of the early stages of the Best Practice transfer. In the end, the research questions are answered.

6.1 The Best Practice transfer process

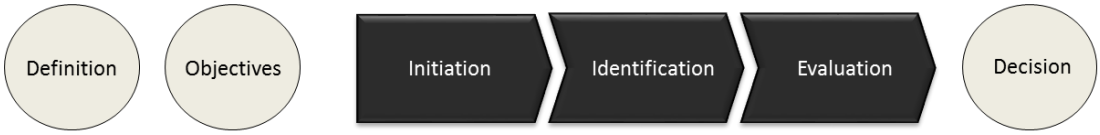

Figure 23 - The Best Practice transfer process - the developed model

This discussion will be structured according to the phases in the model developed in this study, as described in Figure 23.

6.1.1 The definition of Best Practice

The definition of Best Practice is quite vague and the concept is used differently in different theories and in various contexts (Dangayach & Deshmukh, 2001; Jarrar & Zairi, 2000b; O'Dell & Grayson, 1998; Szulanski, 1996), which is also the case in practice. Among the companies, the concept of Best Practice is often considered problematic and some additions to the concept have to be made in order to create an understanding of how it can be used. Such associated concepts are Good Practice, context dependency and a dynamic association to the word *best*. The concept is put together by two words; best and practice. Dependent upon the definition of the two words, the concept will be used differently (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000a). The companies tend to focus mostly on the practice part of the concept, as the use of Best is the word considered most problematic. Best is dependent on both context and time. In addition to the Best Practice concept it should be added that the concept is context dependent and that the concept is a moving target, as what is considered best is developing.

Best Practice can also be used as a word on its own, connected to the concept of World-Class Manufacturing practices (Silveira & Sousa, 2010; Hayes & Wheelwright, 1985). While other researchers argue that such practices are not Best Practices in themselves (Wellstein & Kieser, 2011), a perspective taken in this study. When the companies discuss such World-Class Manufacturing, they mostly consider such as Global Best Practices, as they are quite high-level compared to the way of working in the manufacturing. All companies had some kind of manufacturing system based on Lean Production. Those were often considered a Global Best Practice, as all sites must work according to those

frameworks. Those World-Class Manufacturing practices can be considered as frameworks for how to work with Best Practices within the companies.

The definition of Best Practice is, as described, problematic both in practical use as well as in the literature. The concept is vague and difficulties to define the concept can lead to problems using it in practice. The concept is commonly used, even though the meaning of the concept may be different for different people. The use of Good Practice indicates less harmonization between sites and is easier to use at a local level within the companies. The definition can also be used to describe the sharing of knowledge and use the practices as a palette to pick from, where the practices can be used as inspiration for further improvement and adaption to the specific contexts. Local Best Practices focus on context dependency and the possibility to adapt to different conditions. It is in focus to standardize for each team and department, but less effort is put into harmonization between plants. The term Good Practice, used by some of the companies, is suitable as substitution for the concept of Local Best Practices.

Global Best Practices on the other hand, are more focused on harmonization and is often associated with the standardized solution or the *one* Best Practice for that process. Therefore, it is preferable to use the concept of Best Practice to highlight the harmonization globally. In addition to this, in order to put focus upon the dynamic aspect of the concept, Best Practice should be defined as a dynamic, always developing concept.

The recommendation is to use the word Good Practice as defined in theory by O'Dell & Grayson (1998), Jarrar & Zairi (2000a; b) for local level transfer of knowledge and practices instead of the word Local Best Practices. For global level, regarding practices that should be used everywhere, the concept of Best Practice should be kept, but the importance of viewing the word Best as dynamic should be highlighted and included in the definition.

6.1.2 The objectives of Best Practice transfer

The manufacturing strategy should be linked to the overall corporate strategy (Skinner, 1969), in order to build and run successful manufacturing systems (Dangayach & Deshmukh, 2001). The strategy should specify what the company and its manufacturing should focus on (Hayes & Pisano, 1994), it should be specified what the company requires to achieve with their manufacturing practices and processes (Hill, 1986). This link to the manufacturing strategy defines what the objectives are for working with Best Practices and the transfer of such. All companies consider the Best Practice approach to be a basis for further improvement. There are some differences between how the Best Practices are handled depending on what the strategy looks like. Companies with more harmonized IT systems between different sites focus on Global Best Practices as the work is facilitated and a specific way of working is also forced by the IT systems. Companies that are not as focused on harmonizing their IT systems and with different divisions that are producing different kinds of products, focus to a larger extent on sharing Local Best

Practices between sites. Hence, different manufacturing strategies are aligned with the various ways of working within the company, as the objectives and focuses are different.

6.1.3 Initiation of Best Practice identification

Szulanski (1996) is using the term initiation for the entire beginning of the Best Practice transfer. The Best Practice transfer process starts when there is a need for and demand of knowledge within an organization (when focusing on internal transfer). However, in order to understand how the process initiates and begins, the source and the recipient of the knowledge must be understood (Lu, Mao, & Wang, 2010). This need can origin from changes of different kinds, which is a common starting point for searching of Best Practices within the companies. The change can for example be of an organizational nature or connected to product design. All participating companies argue that improvement, both continuous improvements and specific improvement projects can be the origin in identifying potential Best Practices. These improvement arrangements are often the source of the Best Practice and sometimes also the recipients of the Best Practice. In this case, the same unit can be both source and recipient of the Best Practice as they have a demand for a practice, but their work also supplies the solution and knowledge that could be transferred further in the organization. This can be linked to the Interaction model described in theory (see chapter 2.5.1).

The work with improvements as a basis for Best Practice transfer is beneficial as it can reduce on of the biggest barriers for Best Practice transfer; ignorance from both source and recipient (Szulanski, 1996). The studied companies talk a lot about the importance of involving everyone in the improvement work of their own practices, as this creates an ownership of the processes. Compared to the theory, this point of view seems preferable as it is beneficial for overcoming barriers for practice and knowledge transfer. Hence, it is especially important at local level regarding Local Best Practices to allow the employees to improve their own workstations. It is also important to make sure for whom a Best Practice should be good for in order to improve performance (Wellstein & Kieser, 2011; Jarrar & Zairi, 2000b), as the need and for whom it should be beneficial is understood by the ones working with the practices in their everyday work. This is especially true considering many of the identification initiatives start in a problem within the organization.

6.1.4 Identification of Best Practices

Searching is the first step in the transfer process described by Jarrar & Zairi (2000a; b) and it includes the identification of potential Best Practices (Jarrar & Zairi, 2000b). Different sources can be used for identification. Sources that can be used, identified in theory, are for example journals, Internet and other published sources (Jarrar & Zairi, 2000b). Even though these sources are used in practice, the companies are more focused on using sources for identifying possibilities, which could provide both tacit and explicit knowledge; networks, site visits and use of experts. These ways to identify potential Best Practices are also being mentioned in theory (Jarrar & Zairi, 2000b; O'Dell & Grayson,

1998; Wellstein & Kieser, 2011). KPI benchmarking, which is also being identified as a source for identification in this study, is mentioned in theory as a possibility to compare different units and practices in order to identify potential Best Practices (Camp, 1995; Anand & Kodali, 2008). Hence, the theory and the results from this study are in this part of the process alike.

In addition to the identification possibilities with the main objective to identify Best Practices, this study has shown that also competence movement both locally and globally is a way to transfer and identify Best Practices. Even though the companies argue that this way of working is formal and systematic, it is rarely being done with the main objective to transfer Best Practices. The competence movement is being initiated by the need of a specific competence or some kind of resource existing at one site, which another site would benefit from or requires. The transfer of Best Practices is being a beneficial effect of such movement.

The identification of potential Best Practices is made using both formal and informal methods. The identification can be made in order to identify a Best Practice as well as a beneficial outcome from a method with another primary objective.

6.1.5 Evaluation of potential Best Practices

According to the theory, the evaluation of potential Best Practices is very dependent upon the settings and the conditions (Wellstein & Kieser, 2011), which is also the case in this study. The evaluation aims to decide values of different practices compared to the needs and the objectives for those (Jarrar & Zairi, 2000b), and this is being made using various methods and processes. In the evaluation phase, it is quite big differences in what basis is being used considering Global Best Practices compared to Local Best Practices in this study. When evaluating something, the values should be decided and compared. However, such values are vaguely described in the theory. In this research it is concluded that different practices have different values in different contexts. As the context differs depending upon location, products and company, the value is differently described and evaluated. For a Global Best Practice, the value is often evaluated by some quantification of different practices. On local level, on the other hand, the value seems to be evaluated by the use of more qualitative basis, even though some quantification can be made when the practice provides such basis. Hence, a general, main difference between evaluation of Global and Local Best Practices is the focus on quantification or qualification basis for evaluating the value of a practice compared to other.

6.1.6 The decision of a Best Practice

A decision is a commitment to an action that is being decided upon (Mintzberg, Raisinghani, & Théorêt, 1976). The decision about what is considered a Best Practice can be seen as a series of different decisions along the way. The decision is to a large extent influenced by the objectives for working with Best Practices, which is also discussed in theory (Jarrar & Zairi, 2000a). As a Best Practice approach is considered a basis for further improvement, it is not surprising that a common decision at local level is to test

the new practice or the improvement and then evaluate it again, in order to benchmark it against previous practices and propose potential further improvements.

In theory, the idea of validation is discussed (Jarrar & Zairi, 2000b) as some practices requires such a validation after a taken decision while others do not (Jarrar & Zairi, 2000a; Jarrar & Zairi, 2000b). A validation of some sort is often performed in the studied companies, sometimes in the form of a new evaluation and sometimes as a validation and follow-up upon the KPIs for the process. This is considered important in order to reach a sustainable change and improvement. The decision taken is closely connected to the objectives for working with a Best Practice approach, which is according to theory as well (Jarrar & Zairi, 2000a). The decision can also be to try out the new practice and then go back to the evaluation phase once again. The interaction between different phases and parts in the developed model of Best Practice transfer can be seen in Figure 24.

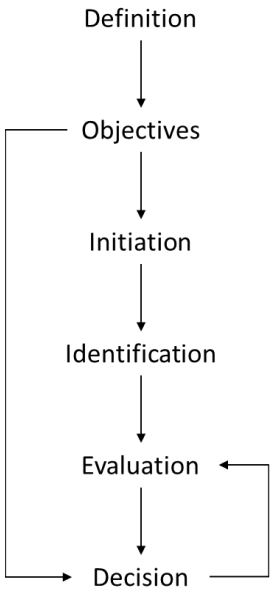

Figure 24 - The other stages influences on the decision

At a global level, the decision about a new Best Practice is more commonly considered final, as larger changes often are required. The reasons for this are that Global Best Practices can be associated with the IT systems or the overall manufacturing system and those require changes world-wide. These changes are associated with involvement of more resources and sometimes also with higher costs, which is especially true when it comes to changes in the IT-environment.

6.2 The missing link

Best Practice is a concept that could span over a wide area and over different levels within the organization, which is described both in theory as well as in this research. Best Practices can describe the operational ways of working within a local factory, where transfer means that different departments could learn from each other. Best Practice could also include benchmarking of factories in the global manufacturing networks, where the objective is to find common company standards. Benchmarking can be made on a strategically level, where the understanding of how KPIs are being measured and what is behind them are crucial. There are different aspects of the Best Practice concept that are being used on different levels within the company. The different aspects can sometimes be hard to integrate and combine.

As the Best Practice transfer is being influenced by the characteristics and numbers of source and recipients in the process (Szulanski, 1996), the interaction of Local and Global Best Practices are influenced by the characteristics of local perspective of Best Practice compared to global perspective. The different detail-levels and scale of the practice are influencing the interactions, resulting in difficulties of using different local knowledge when developing a new Global Best Practice.

Figure 25 shows what interactions between Local and Global Best Practices exist within the studied companies. The third interaction, between Local Best Practices and Global Best Practice seems to be missing.

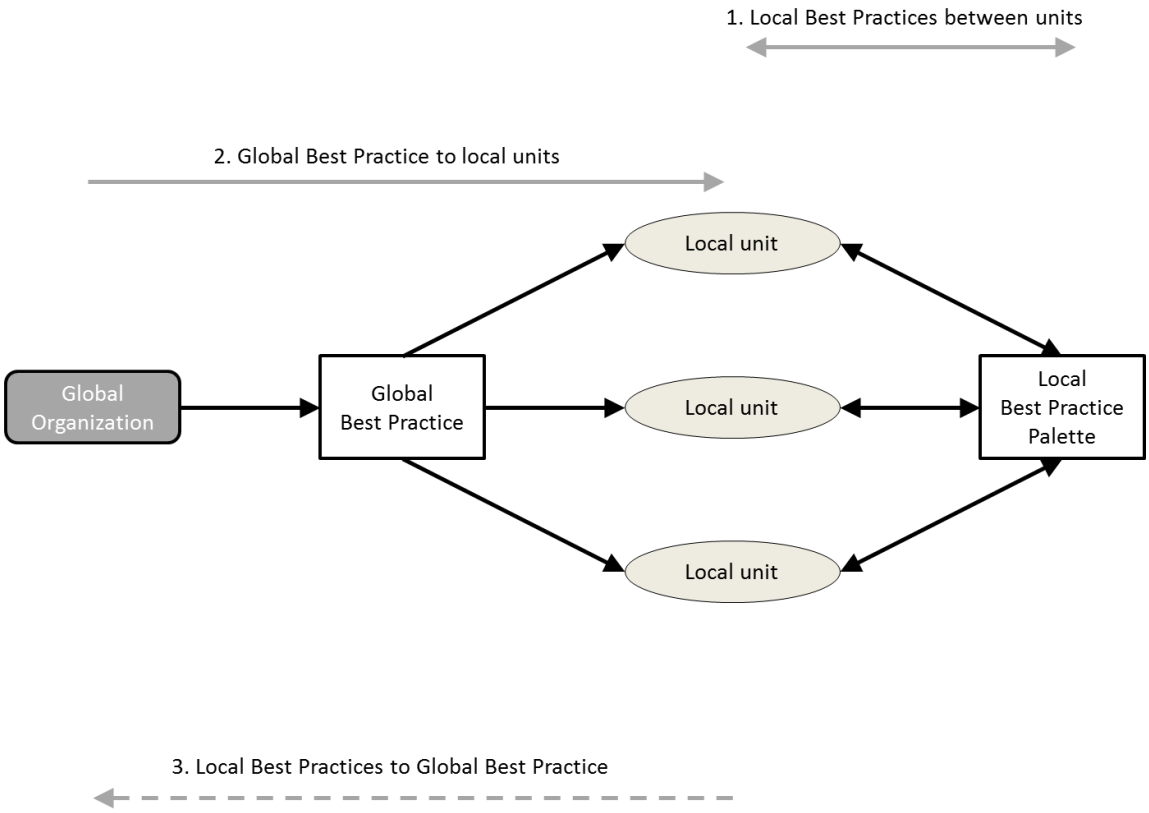

Figure 25 - Interactions of Best Practices and the missing link of Interaction between Local and Global Best Practices

6.2.1 Local Best Practice to Local Best Practice

The first interaction is the interaction between Local Best Practices both within a factory and between factories. Local Best Practice sharing between sites and within sites is handled quite informal, but the companies seems to trying to facilitate contact points between different factories and units. As the transfer and sharing often involves both tacit and explicit knowledge, the involvement of people and practical learning and knowledge sharing is important. Between the different sites or units, the transfer of Best Practices can be linked to the Interaction model of Best Practice transfer described in chapter 2.5.1. This model describe the different units as both sources and recipients (Lu, Mao, & Wang, 2010), which is described as suitable for horizontal transfer of knowledge within a firm (Lu, Mao, & Wang, 2010; Szulanski, 1995). The template in the model can be seen in practice as the palette of different Good Practices within a firm. Units can implement the practices they find most suitable for their operations. As all units contribute to the template or the palette with their Local Best Practices at the same time as they choose the ones they find the best in return, all local facilities can be seen as both sources and recipients. All contribute to developing and improving the palette of available Local Best Practices.

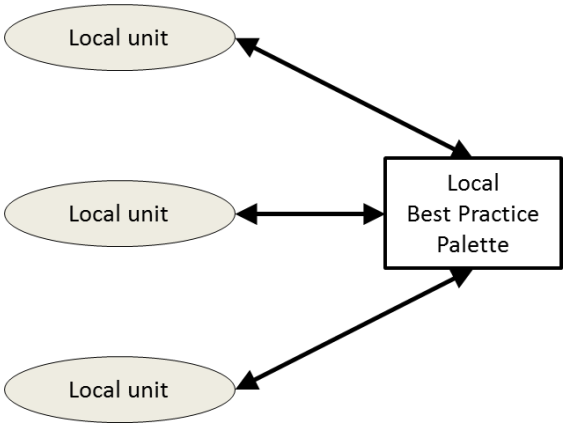

Figure 26 - Local Best Practice transfer between sites

6.2.2 Global Best Practice to Local Best Practice

The next interface described is how Global Best Practices are being transferred to local sites. Global Best Practice sharing to local sites is primarily done on a quite high level, driving out some practices that should be followed and used as a framework. The focus of Global Best Practice is explicit knowledge, even though the tacit knowledge sharing is supported by the IT systems, which is also being identified as a facilitator in theory (Jarrar & Zairi, 2000b; O'Dell & Grayson, 1998).

In contrast to the Local Best Practice transfer between facilities which highlight the interaction of the units, the transfer of Global Best Practices to individual sites can be seen as a one-way transfer. The Clone-model described by Lu, Mao, & Wang (2010) can be used to conceptualize the Global Best Practice transfer. This model can be applied when there is one source unit, which transfers the practice to one or multiple recipient. One Best Practice is identified in one source, developed into a Global Best Practice and transferred to all the other units where the practice is applicable. In theory, the model is described as mainly used for vertical knowledge transfer (Lu, Mao, & Wang, 2010; Szulanski, 1995) for example between R&D unit and production units. As Global Best Practices often are influenced by different departments, this view seems to be applicable for transfer of Global Best Practices related to manufacturing. Global Best Practices are rarely only regarding manufacturing, but rather the overall operations in the company. The Clone-model therefore describes conceptually how the transfer of a Global Best Practice works within the company.

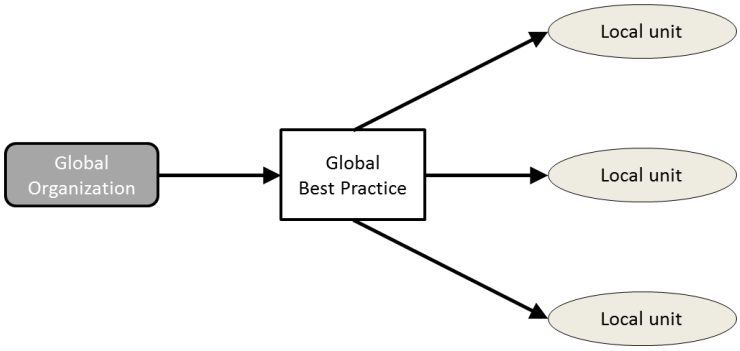

Figure 27 - Global Best Practice transfer to local units

6.2.3 Local Best Practice to Global Best Practice

Local Best Practices contributions to Global Best Practice, on the other hand, is limited. Global Best Practices often involve IT/IS design and therefore, the design of the practice is to a large extent based on the system and what is best to do in the system. IT/IS dictates a way of working, which influence the Global Best Practices to a large extent. Local Best Practices can be used as inspiration for a Global Best Practice. Often, it is done when there is an existing practice that works as a solution for a bigger problem the company has world-wide, or by having enthusiasts sharing practices and knowledge high-level in the companies. Some people could find Lean very important, and with experience from a local plant, they could decide to share the practices further and implement World Class Manufacturing practices world-wide. This is to a large extent connected to the definition of Best Practice used in literature (e.g. Dangayach & Deshmukh, 2001; Wheelwright, 1984).

Local Best Practice transfer between sites can be described conceptually as the Interaction-model of Best Practice transfer described by Lu, Mao, & Wang (2010). Global Best Practice transfer to local facilities can be seen as the Clone-model. The third model, the Blend-model could have been applicable to the transfer of Local Best Practices as a contribution to Global Best Practice. The Blend-model describes that multiple units develop a Best Practice and transfer it to one recipient (Lu, Mao, & Wang, 2010). However, this approach is not being used to its fully potential within the companies as benchmarking of different Local Best Practices not seems to be fully used. Multiple Local Best Practices are rarely being identified and used in order to develop a Global Best Practice in the studied companies. By applying the approach of the Blend-model, local improvements, knowledge and practices could be used in order to develop a Global Best Practice. Such an approach could have been the replacement of the missing link between Local and Global Best Practices. Figure 28 below shows how such an approach could have looked like in the studied companies, if this theoretical approach have been applied. However, this link is to a large extent missing in the studied companies.

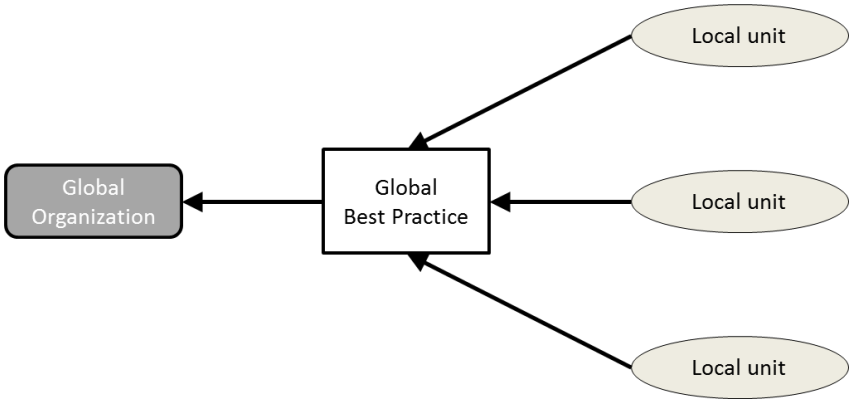

Figure 28 - The missing link between Local and Global Best Practices

6.2.4 A conceptual model of the interaction of Best Practices

Putting together the models for the transfer of Local and Global Best Practices described in Figure 26 and 27, a conceptual model of the interaction between local and global level could be developed. The conceptual model seen in Figure 29, containing both the transfer of Global Best Practices to local sites as well as the sharing of practices between local units, is based upon the Clone-model and the Interaction-model described by Lu, Mao, & Wang (2010), and linked to the findings of this study.

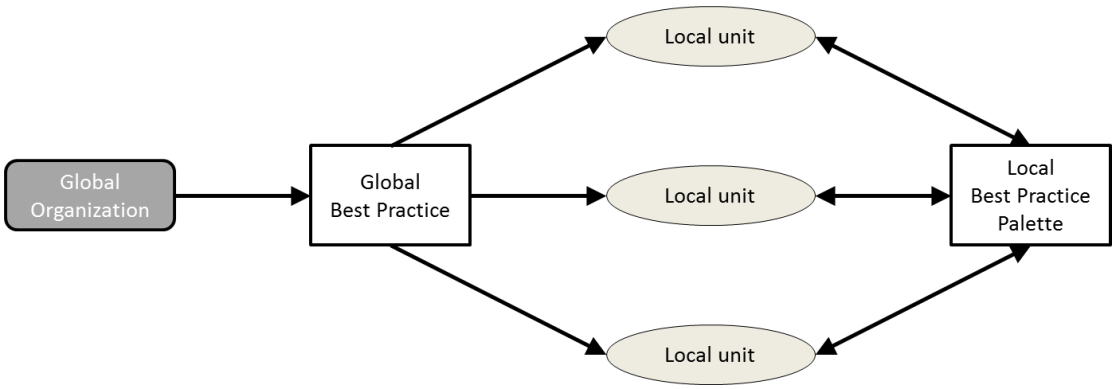

Figure 29 - Conceptual model of Best Practice interaction

However, there is a missing link between Local and Global Best Practices. It seems like Local Best Practices are rarely being benchmarked towards each other when developing Global Best Practices. Local Best Practices could, by the use of benchmarking, be used more frequently in order to share knowledge two ways in the organization; from global to local level, and from local to global level. There is much potential knowledge within the company, which could be discovered and identified by the use of internal benchmarking to a much larger extent than what is done today. If the approach of the Blend-model described by Lu, Mao, & Wang (2010), would be applied to this Best Practice transfer, the missing link could been found and a two-way interaction between local and global level could possibly be achieved.

6.3 Summarizing the discussion

According to the research, the link between Local and Global Best Practices seems to be missing. The purpose of this thesis was to investigate the interaction of Local Best Practices and Global Best Practices within the manufacturing function in multinational corporations. A model describing the early stages of the Best Practice transfer was developed in this discussion, including definition of Best Practice, Initiation, Identification, Evaluation and Decision. By using the developed model, the Local Best Practices and the Global Best Practices were analyzed and the two Research Questions were answered. In relation to those Research questions, conceptual models of the Local Best Practice transfer respectively Global Best Practice transfer were developed, as illustrated in figure 26 and figure 27, based on the findings and the models described by Lu, Mao, & Wang (2010). By linking those two developed models regarding Local and Global Best Practice transfer, shown in figure 26 and 27, it could be concluded that it seems as the interaction of Global and Local Best Practices seems to be missing.

6.3.1 Research question 1: Local Best Practices

The first Research question to be answered in order to be able to answer the purpose, regards the Local Best Practices. Research question 1 is formulated as following:

How are Local Best Practices in manufacturing developed and transferred within multinational corporations?

The research indicates that Local Best Practices are more focused on details that are context dependent than in the case of Global Best Practices. As the settings are different in all manufacturing factories, the ways of working differ. Hence, the factories want to standardize practices locally in order to make everyone work in the same way, in that context, as it provides a basis for further improvement and a common structure.

As the contexts are different at local sites, the transfer of Local Best Practices between different factories is often focused on sharing good ideas for inspiration. By doing so, the local representatives can, with their knowledge about their local settings, pick the practices they think would improve their own units and implement them. The practices from the "Local Best Practice palette" can then be adapted to fit the specific, local context. Such improvements can then be brought back and shared with other factories again. The palette of Local Best Practices is always developing.

The sharing of ideas is often quite informal. However, there is a trend to formalize such informal relationships and to facilitate contact points between different factories in order to share knowledge and practices.

6.3.2 Research question 2: Global Best Practices

The second Research question regards the Global Best Practices and is formulated as following:

How are Global Best Practices in manufacturing developed and transferred within multinational corporations?

Global Best Practices seem to a large extent to be associated with IT and operational systems, often based on Lean Production, within the studied companies. The Global Best Practices often work as frameworks for all manufacturing sites, providing a base for problem solving or a structure for improvements. Global Best Practices are focused on the overall improvement and optimization of the whole organization.

Considering Global Best Practices, IT systems seem to matter. Depending upon how much the company works with harmonization of the IT systems, the work with Global Best Practices and Local Best Practices differs. Having harmonized IT systems facilitates and also forces a specific way of working with the systems, which provides a basis for working with Global Best Practices.

Such Global Best Practices, with association to IT systems and overall operational systems based upon Lean Production, are being transferred to all manufacturing units around the world as a step in harmonizing the frameworks. Hence, even if the systems and framework look the same, the local units often have some freedom to develop their own practices considering how to work in that specific context; Local Best Practices.

7 Conclusions

This chapter summarizes the research and its contribution. Managerial implications of the research are described as well as proposals for future research.

Large corporations with facilities in different locations around the world often work with issues of how to transfer knowledge, including practices, between various manufacturing facilities (O'Dell & Grayson, 1998). Taking a resource-based view upon operations strategy, best practices, the related knowledge and the sharing of such can be competitive advantages for the firm to survive in the long run, as such practices can be a part of internal resources, which are hard to imitate for competitors (Lu et al., 2010; Wellstein & Kieser, 2011; Gagnon, 1999). Previous literature on manufacturing best practices has mainly focused on how to transfer best practices between sites rather than on how to actually identify and evaluate potential candidates for a best practice within a company (Wellsten & Kieser, 2011), even though a lot of the problems for transfer between sites occur in the early stages of the transfer, such as identification and evaluation (Szulanski, 1996).

Global best practices can be transferred to all facilities globally in order to achieve better performance. Even so, a best practice is a practice that works the best in that specific context in a specific period of time (O'Dell & Grayson, 1998; Jarrar & Zairi, 2000; Szulanski, 1996). Companies are facing both pressure for local responsiveness and globalisation (Miltenburg, 2009) and the operations strategy must handle this balance between standardization within the total manufacturing system and the context dependency of the Local Best Practices. The purpose of this research has been to investigate the interaction of Local Best Practices and Global Best Practices within the manufacturing function in multinational corporations.

The interaction of Local Best Practices and Global Best Practices has in this research shown to be complex and not functioning in the same way from the local and the global perspective. What can be seen is that the contribution of Local Best Practices when developing a Global Best Practices seems to be missing. Various Local Best Practices are rarely being benchmarked when developing a Global Best Practice because of differences in how to identify and evaluate a best practice at local and global level. There is a gap in how the identification and the evaluation processes are being made locally compared to the process globally, and there is no clear connection between those as illustrated in Figure 30.

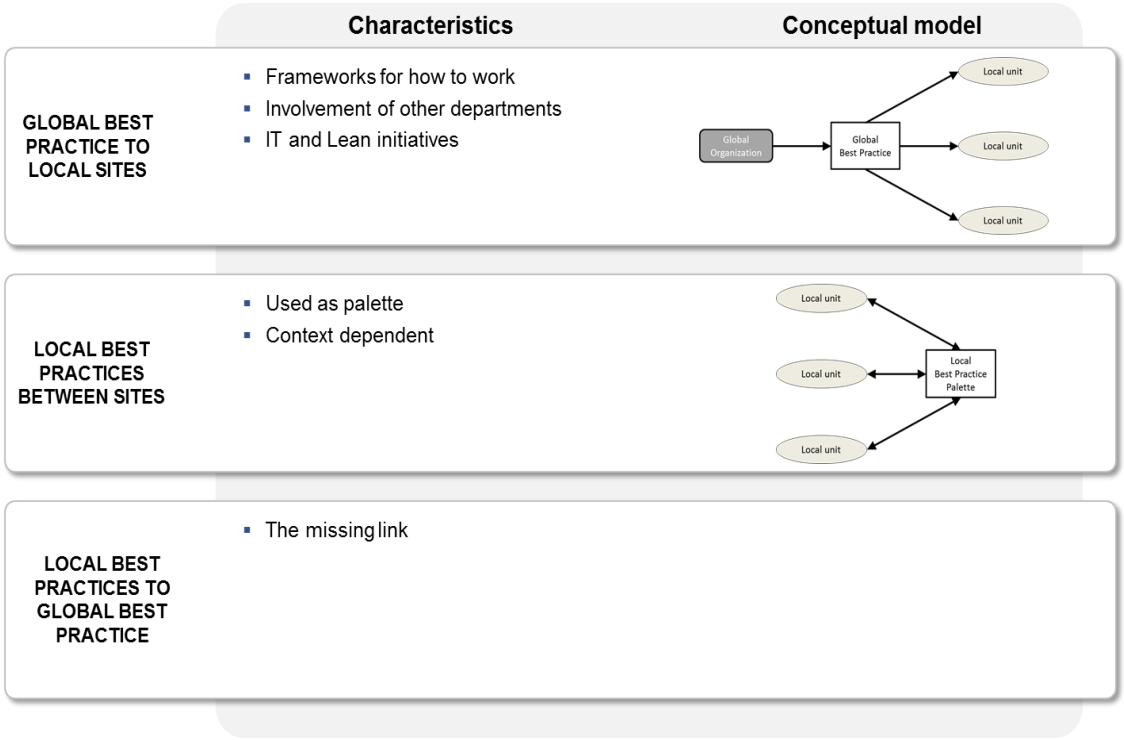

Figure 30 - Characteristics of Global and Local Best Practice transfer

Both literature and practitioners are, when describing Local Best Practices, stretching the importance of local context and the possibility for each facility to adapt the practices to their individual organisation and needs. Global Best Practices, on the other hand, are focused upon harmonization of one or more processes globally. The objective is to find common company standards, even though this might result in performance loss for individual facilities. Global Best Practices are often associated with frameworks such as Lean initiatives and IT, which dictates a specific way of working. This forces the development of a Global Best Practice that is not being developed from benchmarking of Local Best Practices within the company as the used methods to identify and evaluate the potential best practices differ. Therefore, the link between Local Best Practices and Global Best Practices seems to be missing. There is potential for using Local Best Practices as contributions to Global Best Practices to a much larger extent than what is actually being made in the studied companies.

The research contributes with an explanation of how the identification and evaluation of potential best practices are being made at global and local level. The differences in the different ways of working seem to result in that Local Best Practices are rarely being used as contribution to a Global Best Practice. This research argues that local knowledge and practices should be taken into consideration as a part of the operations strategy. This is important in order to use the existing internal resources within the company, which are hard to imitate for competitors, to be able to stay competitive in the long run.

7.1 Managerial implications

As the literature argue that a Best Practice should be proven the best, Local Best Practices could be used to a much larger extent when developing a Global Best Practice than is being done in the studied companies. To highlight the context dependency of Local Best Practices, the concept of Good Practices in a local context could be used instead of the concept of Best Practices. The concept of Best Practice is vague and hard to use, the use of Good Practices is a way to be able to highlight the existence of different, parallel good practices used within the company. If the company should use the term of Best Practice, it should be the proven Best Practice. For Global Best Practices, the concept of Best Practice could therefore be kept to highlight the harmonization focus. A globally used Best Practice should also be seen as a moving target, as Practices always can be improved.

The development of such a proven Global Best Practice should benefit from comparing different Local Best Practices or Good Practices in order to really find the best existing Practice. By doing so, the company´s internal knowledge base and resources could be used in a better way in order for the company to stay competitive at an increased globalized market.

7.2 Proposals of future research

This research has focused upon the early stages of the Best Practice transfer process. However, the respondents are witnessing a challenge in how to make the improvements and the Best Practice to stick in the long run. How such sustainable changes are being recognized and handled is a potential area for future research.

KPI benchmarking is in this study identified as an area for identifying potential Best Practices. However, research of how a Best Practice used within one area could be connected to the measurement of KPIs for that specific area would be beneficial. Regarding Local Best Practices, the importance of context is considered important. A future area of interest could be how this balance should be handled. How could KPI benchmarking be carried out and designed to identify context dependent Best Practices to be used elsewhere?

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Appendix I – Interview guide

Method How working with LBP-GBP? Why this way? Other possibilities? Previous experiences? What Objectives? What resources are available? What is the measurement of the people associated with identification and evaluation?	How to reach a GBP? Design of method? (Experts/Successfactor research/Internal benchmarking) How is the process working? What to achieve? Why is it built up this way? Regularity?	What part differs? Why not followed? How if not by the process? Design of real method vs formal method? What needed for buy-in? Considering LBP at all? How to reach a GBP? Regularity? Design of wanted method? (Experts/Successfactor research/Internal benchmarking) Why is the process not working? What to achieve with formal vs informal process?	Why no formal process? How is the informal process working? Patterns? What is achieved? Considering LBP? Why is it working this way? Want to reach a GBP? What is needed to design a formal process? Any previous failures?	Why no (formal) process? Previous Failures? Not a focus? Is LBP taken into consideration at all? Usage of external benchmarking? Considered a part of something else?	Design of evaluation method? How is the process working? Reaching the intended results? What is focus? Why is it built up this way? Regularity? **Validation?**	What part differs? Why not followed? Why is the process not working? How if not by the process? Lack of....? LBP evaluated at all or other practices being used? Design of real method vs formal method? How to reach a GBP? Regularity in reality? Design of wanted method? What to achieve with formal vs informal process?	Why no formal process? How is the informal process working? Patterns? What is achieved? Considering LBP? Why is it working this way? Want to reach a GBP? What is needed to design a formal process? Any previous failures?	Why no process? Failures? External? Is LBP taken into consideration? What is in focus? Usage of external benchmarking and other concepts? Considered a part of something else? What is being used as a best practice? Decentralized org? Is idenitfication being made? Use of HQ-site practice always?
Organization & Leadership What teams? Functions involved? Incitament to participate? Communication? Who provides input? To what extent can local sites contribute? Mandat?	Function(s) involved? How is it structured and designed? Units involved How is the team communicating? What persons/teams? Always the same or different each time? How did the org developed this team? Global teams? How is it possible to make sure different plant in different countries can contribute? Is one plant "the nominal"? Communication channels?	Decision maker vs formal decision maker/owner? Units involved or units not involved that should be? Why? How is the team communicating and how is it working? What persons/teams are being used? Global teams and communication?	Decentralization? Inoffical leaders or entusiasts? How is the communcation working? How large part of the org? Always the same team? Global teams? Informal communication networks?	Decentralization with non contact between departments? Horizontally linked? Management; interested in the subject? Focus otherwise? Possible to contact and discuss globally? Usual communication?	Functions involved Management involvement? Who? Function(s) involved? How is it structured and designed? Units involved How is the team communicating? What persons/teams? Always the same or different each time? How did the org developed this team? Global teams involved? How to make sure different plants in different copuntries being evaluated? Is one plant being used as "nominal"? Communication channels?	Decision maker vs formala decision maker/owner? Units and persons involved? What units should be but are not? How is the informal team communicating compared to how they should? Is the organisation the same as the formal process suggests? What differ; org, process, other? Communication other ways? At all?	Parts of org? Inoffical leaders or enthusiasts? How is communication working if not formal? Always the same team or different? Global teams? How communcating when not formal process between sites? Communication networks? Informal contact?	Users decide? No GBP in place? Use of existing GBP? Interest of Management? Communication channels between sites available? How? External communication?
Process & Process owner Process org? Process owner? What incitament for process owner to create improvements? What is the role description? What does it says? One or many people? Influencers? What departments? Knowledge needed? Can I have a look at the role description? When start/stop? Project? How is a decision taken? Decision owner/influencer?	Process organisation? Process Owner? Influencers? Is the processowner representive of a department? Who is intressent? Education? Implemenetation of formal identification process? Updating the formal system after identification? Potential? Influences external? Influences internal?	Process organisation? Process Owner? Influencers and real decision makers? Who is involved? From what department is it initated or stopped? Education existing? Implementation of informal process? Is the system being updated after identification? Inoffical team or person? External? Potential for improvement? Influences external? Influences internal?	Is there an informal leader or owner of the process? Is it usually one person responsible (informally) for education, searching and implementation? Does education of the practice exists? Can a process be developed by this informal process and its team members and owners? Influences external? Influences internal?	External? User decision? Is is desirable to develop a formal process? Is harmonization in focus? Influences external? Influences internal?	Process organisation? Process Owner? Influencers? Is the process owner representive of a department? Who is intressent of the decision? Education? Implemenetation of formal evaluation process? Updating the formal system after evaluation with the decision and what the decision is based upon? Who (structure) Team members Influencers Influences external? Influences internal?	External? Inoffical person or team? Who involved if any? Formal Process organisation or not? Process Owner vs informal leader? Power of formal owner? Influencers and real decision makers? Who is involved? From what department is it initated or stopped and why? Education existing? Implementation of informal process? Potential for improvement? What is needed to reach the formal process? Is it desirable? Influences external? Influences internal?	Person or team? Informal leader or process owner? Is it usually one person responsible (informally) for education & implementation? Does education of the choosen practice exists? Can a formal process be developed by this informal process and its team members and owners? Influences external? Influences internal?	External? User decision? Harmonization work within the company? Desirable to develop a formal process and to work with those questions? Influences external? Influences internal?
Criteria and Measurements Link to objectives? Business case? Data availible and used? Benchmarking? Expert team? Rewards for participating? Why do people want to participate? How is the value quantified of the implementation of a GBP? How to know the info is correctly? Hard to build a business case? Facts/Experiences? Data? Value for who?	Business criteria? Decision support model? Which criteria are comparable and which are not? Why those criteria? Connection to strategic objectives? Data available? Use of business cases? How can the LBP be compared? How to know what value is? How to identify a good practice? What is focus? Data used? Value for who?	Actual criteria Decision support existing? Is it used? Are formal and informal criteria linked to strategic objectives? Are criteria comparable? Is data available? Which data is and which is not? How is this affecting the criteria? Formal process using business case? Is this really used in reality? Why not? Value for whom in formal vs informal process? How to know the value if not by business case? Hard to identify value and data? Timeconsuming? Data available and processable?	Basis for decision? Is any business case used or is it experience? Linked to culture or approach? Comparison made? Nominal process/practice used? Facts or experience? Use of technology/systems? Value for who? Any data available and traceble?	External or non? Have one already? No criteria in place? Any possible criterias considering strategic objectives? Data available at all? Why is no measurement done? Is harmonization seen as a value and contribution for the organization? Why is not internal data used for this purpose?	Business criteria? Decision support model? Nominal? Which criteria are comparable and which are not? Why those criteria? Connection to strategic objectives? Data available? Data used? Why that specific data? How to know what is successful/good or not? Use of business case when evaluating? How can the different LBP be compared? Value for who? Who is in charge for the evaluation and who is involved compared to who will use it?	Actual criteria? Decision support? Nominal? Are formal and informal criteria linked to strategic objectives and do those differ? Data available for the intended criteria or other influences? Formal process; using business case? How is it done in reality? Why not? Value for who in the formal vs the informal process? Any overlaps? Data available or processable? Facts or experience? Who is doing the evaluation compared to who is going to use it?	Basis for decision? Is any business case used or is it experience? Linked to culture or approach? Comparison made? Nominal process/practice used? What nominal? Comparison? Facts or experience? Use of knowledge/systems? Value for who? Is data being used?	External or non? Have one already? No criteria in place? Any possible criterias considering strategic objectives? "Just-do-it"? Already a GBP? Any data avaiable at all? Why is no measurement done? Value of harmonization within the org? "HQ-site size fits all" Experience? Feeling? Why no internal data used?
Documentation & Control syst. Documentation system? Control? Traceble? Updated? Owner? Education? Where & when? Any visualization of the process? Tree-structure? What is the way to achieve a GBP? How is it put down in documentation? When is the decision final? How? How to make sure people is aware and use it? Who is responsible for the sharing/diffusion?	Documentation Owner? How is the process of idenitfication documented? Is there a system to search for BP? A guide in place fo the identification? Updated by whom? Used by whom and how often? Control of the identification process?	Who owns sthe process of documenting formal processs? Is this done? When and how? Usage of documentation for the real process? Is there existing a documentation system? Updated by who? Lost in the informal process? Control of the identification process? Is the process out-of-hand or OK as a substitute for the formal process?	Documentation of process? Is the process traceble? Can it be re-done? Can previous processes be used to develop a formal process if there are any patterns? "Re-inventing the wheel".	Is there a system in place that could have been used for documentation? Who have access? Who can update?	Documentation? Owner? How is the process of evaluation Itsself documented? Is there a system to compare and evaluate BP or is is made by hand? A guide in place fo the evaluation? Updated by whom? Used by whom and how often? Control of the evaluation process?	Usage of documentation at all? Who owns the process of documenting formal processs? Is this done? When and how? Usage of documentation for the real process? Is there existing a documentation system? Updated by who? Lost in the informal process? Control of the identification process? Is the process out-of-hand or OK as a substitute for the formal process?	Documentation of process? Is the process traceble? Can it be re-done? Can previous processes be used to develop a formal process if there are any patterns? "Re-inventing the wheel".	External doccumentation? Does it exist a a system that could be used for documentation?