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The Struggle for Efficiency

Implementation and Translation of an Efficiency Method In Small Manufacturing Companies

Paper within Management Accounting

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Summary

This thesis puts focus on the points where organisations perceive, translate and implement a new organisational idea, and the implementation and translation of one specific efficiency method is studied. We have looked at how a group of small manufacturing companies have implemented an efficiency method (Efficient production/Lean Production) and how they have translated it to fit their own organisation.

The authors were interested in finding out both about the challenges and the positive outcomes of implementing an efficiency method in a company. While getting to know more about the subject, the translator's (the person responsible of implementing the method into the own organisation) role and importance to the implementation became more interesting. In cooperation with a Host Company (HC), a decision was made to study a group of small manufacturing companies who had all participated in one of HC's programs, Lean School for Small Companies.

To be able to make generalisations from the results, a multiple-case study was carried out. To fulfil our purpose and gain a somewhat objective understanding of the processes of implementation we decided that it was necessary to interview two people from each company, one that had attended the Lean School and one who did not, but was directly affected by the efficiency method in daily work. The empirical findings were analysed in the light of the theoretical ideas we found about implementation of efficiency methods and translation of organisational ideas.

The results of the study were in many aspects consistant with the theories found on the subject. The processes of an implementation is complex and are affected by the factors commitment of leaders, problems or obstacles, the translators role and ability to manage the translation process and, furthermore, by knowledge input.

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1 Introduction

As the subject for our study we have chosen to look closer at the implementation process of Efficient Production (EP) in a group of small manufacturing companies in Småland County, Sweden. We believe that since organisational change is necessary when implementing EP, this might be a challenging task. Therefore we found it interesting to look closer at the implementation process of an efficiency method, the translation of the practice to fit into another organisation than where it originated, and also on how the implementation is performed. The role of the translator, the person responsible of implementing the method into the own organisation, was an aspect that grew more interesting as we studied the subject of implementation and the participating companies.

In the study we have had help from a host company which is a local supplier of educations within leadership and efficient production. Since they have wished to remain anonymous in this report they will be addressed to as our Host Company (HC). However, we would like to thank Host Company (you know who you are) for allowing us to participate in your programs and workshops, for all of your invaluable help and for introducing us to the participating companies of our study. We also would like to send a thank you to the three companies who volunteered for interviews. Thank you for giving us of your precious time, allowing us to take take part in your experiences with efficiency work, and for showing us around in your factories. The interviewed companies will remain anonymous as well.

1.1 Background

In the western part of the world most manufacturers are struggling with the problem of high production costs. Many Swedish companies move their production to countries with lower production costs due to a constantly increasing competition (Dagens Nyheter, 2009-01-01). Cost and quality of products decides a manufacturing company's capability to compete efficiently in the global market. A company has two choices when needing to cut costs; it can either increase productivity or it can reduce manufacturing costs (Gunasekaran, Marri & Grieve, 1999).

According to a financial newspaper the manufacturing industry is facing an order decline (Dagens Industri, 2008-09-24). The industry responds to this by cutting down on shifts and production lines, giving notice to employees and even holding up with production (Dagens Nyheter, 2008-09-24). The ongoing financial crisis (autumn 2008) puts further pressure on manufacturing companies to adjust to decreasing orders and cutting down on costs (Dagens Nyheter, 2008-09-24). This puts production and process efficiency in focus more than ever.

The demand for efficiency comes from increasing expectations in manufacturing companies to be able to produce large volumes and individually varied products in flows that can be changed and adjusted to the customers and the market need (Helling, 1995). Lean Manufacturing has been used as a tool by organisations to improve their efficiency in order to stay competitive and profitable in times of economic weakening (Worely & Doolen, 2006).

Hansson (2003) expresses that small companies have become subject for interest and widely recognized for their contribution to the economy. Politicians in many countries stress the significant role small organisations have for innovation and the long-term development of the economy as a mechanism for job creation (Storey, 1994; as cited in Hansson, 2003). Studies by Davidsson et al. (1994, 1997, as cited in Hansson, 2003) supports the previous view, and states that small organisations generate a substantial part of new job opportunities in Sweden. Less than 1 % of the companies in Sweden have 50 or more employees, which means that over 99 % of the companies are small (Ekonomifakta, 2008). There is even a tendency among large companies, targeting global markets, to meet the demands to be "faster and leaner" by dividing their large entities into smaller and independent unities. This is something that manufacturing companies in Småland County have always been good at (Helling, 1995).

Småland County in Sweden is an area with many small and medium sized manufacturers (SCB, 2008), who also have to face the threat of being outnumbered by cheaper goods or cut down on costs. Hansson (2003) expresses that TQM and other efficiency methods are important for small companies, since they are more vulnerable to trends and fluctuations in the market. In one study (Storey, 2002; as cited in Hansson, 2003) the results showed that small organisations are exposed to market uncertainty to a greater extent than large companies. There are studies showing both benefits of successfully implemented TQM, and also of fruitless implementation. So factors seem to exist that affect the outcome of an implementation of efficiency methods (Moreno-Luzon, 1993; Hendricks & Shingal, 1999; Lagrosen, 2000; Brown et.al., 1994; as cited in Hansson, 2003). Hansson (2003) states, with support from Ghoadian & Gallear (1996, as cited in Hansson, 2003), that small organisations have advantages such as flexibility and fast communication, while disadvantages are that the resources are scarce compared to a large company.

Ideas that have had a strong impact on organisations of our times have been critically reviewed by Rövik (2007/2008) handling the issues of supply, transfer, demand, reception and application of organisational ideas. Rövik's (2007/2008) ideas about transmittance and reception, and partly implementation and application of organisational ideas are interesting when considering the abstract parts of the implementation. Quist (2003) has done research on how the translation of methods in the implementation phase is conducted. Hansson (2003) has investigated how TQM, an efficiency method, is implemented in small organisations. Hansson's (2003) ideas are somewhat different than Quist's (2003), and both are therefore interesting to look closer at and compare. The vital factors identified by Hansson (2003) are interesting for this study. In this thesis we will let the ideas of Hansson (2003), Quist (2003), and Rövik (2007/2008) guide us in studying the implementation processes of the companies participating in this study.

1.2 Problem

According to Hansson (2003) there are three important factors for implementing an efficiency method successfully. These are a committed leadership, committed employees and customer focus. Quist (2003) on the other hand questions if the leadership really is as important as previous research states. Instead he points at the decisive role that the translator plays, and that it is more crucial to create a stable organisational platform. Is one of these researchers right, or is there a sense of truth in what they both say? What can case studies tell us about their difference in opinion?

The different ideas for how to gain efficient production are often taken from another context than the own, and are attempted to be applied into the own organisation which is a context that might be different from the original (Rövik, 2007/2008). As Rövik

(2007/2008) and Quist (2003) suggests there must be phases in the beginning of the implementation where a perception and translation of the ideas takes place. After this stage Quist (2003) claims that there is a philosophical level of learning were the ideas are compared to the own context (the own organisation), and adjusted in order to fit into the own context, and at this stage the practical implementation is also considered. Rövik (2007/2008) means there is always a risk of essential contextual prerequisite getting lost during the translation process. How do you successfully translate an efficiency method from one company to another? Is it possible since the original organisation (where the method is developed) might be quite different from the receiving organisation?

According to Quist (2003) the translator plays a decisive role in translating the ideas as well as outlining the practical procedure of the implementation. The success of the implementation is dependent on how the translator manage to communicate the efficiency ideas to the other employees and relate them to the own context. Rövik (2007/2008) agrees with this and emphasizes the importance of the translator's understanding of the original context as well as the own context where the idea is applied. The translator's competence has not been in focus for very long and has not been acknowledged enough by actors involved in transmission processes of such knowledge (Rövik, 2007/2008). Quist (2003) also states that if the translator is left without legitimacy to perform the changes in an implementation, i.e. an organisational platform is not provided; the prospects for succeeding with the implementation will also diminish. If these arguments are compared to a real context, are they true? How does it function in reality with translators and organisational platforms? Are organisations aware of them and include the issues when planning for an implementation, or do they not?

The assumption that both challenges and advantages come along with being a small company is supported by both Hansson (2003) and Gunasekaran et al. (1999). There are not so many levels in small organizations and therefore less bureaucracy. This brings the potential for teamwork among employees which facilitates advantages for implementation such as shorter decision ways and reduced time and effort to perform an activity (Gunasekaran et al. 1999). On the other hand there are also disadvantages like not having precise knowledge and technical expertise enough to gather information for analysis to base decisions on (Haksvever, 1996; Ghobadian & Gallear, 1996; as cited in Hansson, 2003). Small organisations are in general slow in their adaptation during implementation, possibly because of their limited resources (Lee & Oaks, 1995; as cited in Hansson, 2003). What challenges have the companies, participating in our study, experienced? How did it affect the implementation process? Did they experience advantages that come from being a small company?

This thesis focuses on the points where organisations perceive, translate and implement a new organisational idea, and in this case the implementation and translation of one specific efficiency method is studied. We will look at how a group of small manufacturing companies implement an efficiency method and how they translate it to fit their own organisation. What challenges did the companies, participating in our study, experience before and during the implementation of the method? What were the positive outcomes of the implementation? Was the process affected by the size of the companies? Is it possible that the translator's role in any way affected the outcome of the implementation?

1.3 Purpose

The aim is to describe the *implementation* and *translation* of one efficiency method in three *small manufacturing companies*, and look into the *translator*'s role in the implementation process.

1.4 Delimitations

The thesis is limited to the Lean School for Small Companies (Lean school) given at the HC and the methods they are currently using in their program.

The cases in the thesis are limited to the customer base of HC. The three companies have less than 30 employees and are defined as small (see definition below). This is the current maximum employees for participating in the Lean School for small companies at the HC. Geographically the cases are limited to Småland County.

The case studies are limited to the first stage of implementing a long term efficiency plan. The process of working with efficiency is continuously ongoing and therefore difficult to study in its whole. However, it is complicated to divide the process into fragments with clear definitions and boundaries in order to study them separately. Is it possible to know the beginning or the end of an efficiency process and how to know if the cases studied are in the same phase of the process? For this thesis, an assumption is made that the three companies in the case studies are all in the same phase where they have for some reason seen the need for efficiency improvements and taken the step to attend the Lean school at HC.

1.5 Definitions

Implementation

"Implementation can be considered as a deliberate and sequential set of activities directed toward putting a strategy or policy into effect, making it occur." (Hansson, 2003, p.20)

Furthermore, Hansson (2003) describes implementation as the means to make a philosophy, method, tool or approach commonly used within an organization and to make it fully permeate the whole organization.

Small Company

The companies studied have less than 30 employees, and we have chosen to call them 'small' since it is the definition used at our HC for categorizing companies of this size. A small company is according to EU's definition from January 2005, a company with 11-50 employees and an annual turn-over that do not exceed 10 million euro (Nutek, 2008-10-20).

2 Method

2.1 Approach

This paper has a purpose mainly of descriptive nature. The aim is to investigate and describe how companies experience implementing an efficiency method in their organisation. It is however not purely descriptive, but also investigative since we want to look at the reasons for possible differences in the results of our study compared to our theoretical framework.

Both Hansson (2003) and Merriam (1998) agree that for a research which is looking for descriptions and explanations, a qualitative approach is of best use. We have chosen to use a qualitative approach that has elements of both deductive and inductive features, which makes it more similar to an abductive method. Our path of research is illustrated in figure 1. When doing the background study, we found empirical regularities such as the problems arising when companies introduce an efficiency system. These regularities are the starting point of the research and leads to a search for related and relevant literature on the subject (see nr 1, figure 1). The literature was analysed to form a theoretical platform that could be used as inspiration for planning the practical research method, as well as a base for the analysis of the empirical findings. The literature helped us in narrowing down on a specific purpose. The next step was to gather empirical material by conducting multiple-case studies (see nr 2, figure 1). Finally the results from the case studies were brought back in the light of the theoretical framework and analysed (see nr 3, figure 1).

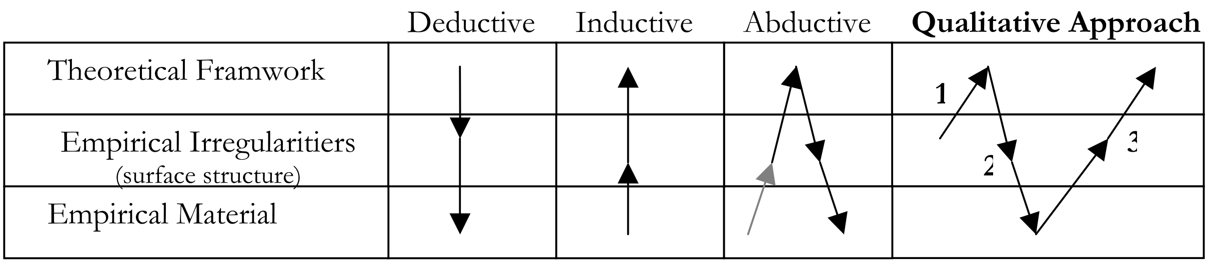

Figure 1 Research approach used in the study, inspired by Hansson (2003) and Alvesson & Sköldberg (1994, as cited in Hansson, 2003).

2.2 Qualitative Study

There are two common ways of collecting data, qualitative or quantitative. The research questions are supposed to guide the choice of method used (Kvale, 1997). Qualitative data is gathered in interviews and case studies and answers for instance the question "why?" (Saunders, et.al. 2007). Here we want to answer questions such as why companies make certain choices, how they do things and why so. The qualitative research method is a more in depth study, which uses theory to give a better understanding of a phenomenon (Svenning, 2003). According to Yin (1994, as cited in Hansson, 2003) a complex social phenomena, which the implementation of the efficiency production can be considered as, is better understood through a case study. Yin (1994, as cited in Hansson, 2003) also mentions that case studies can be used for both descriptive and explanatory purposes and not only exploratory studies. Since the purpose of this thesis is mainly of descriptive nature, we find the qualitative research method most appropriate to use.

2.3 Description of Practical Methods

2.3.1 Information Search

The primary data for this thesis have been collected in three ways. First we had personal communication with the contact person and the CEO at our host company. The aim was to learn more about what courses HC offers, and what their philosophy concerning efficiency methods is. Secondly, we conducted case studies of three companies that have implemented efficiency methods in their organisation, and also participated in the Lean School given by HC. The study included a visit combined with an interview about their experiences concerning the implementation of efficiency methods. Third, we observed Lean School during three course meetings to see how and what methods are taught.

The secondary data were collected through searches in different databases, mainly ABI Inform, S-WoBa and S-WoPec. Different academic journals and daily news papers have been searched for current discussions on the phenomenon of efficiency systems. Some secondary information about the host company, the case study companies, and statistics about small enterprises was obtained through internet, homepages and brochures. Literature on the subject was searched for trough JULIA. We have also searched the internet through Google for information on the topic.

2.3.2 Observation at Lean School

One of the authors has participated in the first three sessions of Lean School for small businesses during autumn 2008, in order to get an idea of how and what is taught at the education. It was only possible to participate in three out of eight course occasions since meeting four to eight took place after the deadline for this thesis. The information was useful when conducting the interviews since it gave a mutual understanding of what and how the companies had learned from the course. The companies in the case studies participated in Lean School last autumn i.e. a year ago which might give different results on what input they got during the course. We have discussed this with HC and according to them the contents and procedure of the course is pretty much the same this year as last year. However, the meaning with our observation was not to get the exact same input, but in general see what input the companies receive.

There is a risk that subjective perspectives might have affected the data since only one of the authors attended the course meetings. The author have not participated in activities or discussions with the group during the meetings, but simply watched the process and taken notes. By not participating in the games or discussion we hoped to stay more objective and also to have a better overview that will allow us to focus on our researcher role. In this way it was possible to write down insights continuously during the process. On the other hand, by not participating it is not possible to fully know what the participants are experiencing. By only observing and not participate, the possibility to experience what the participants do might get lost. After weighing the options we decided that observer as participant was best suited in order to accomplish our purpose. Being observer as participant means that the observer is not participating in the activities, but every participant and the facilitator knows your identity as a researcher (Saunders et.al. 2007).

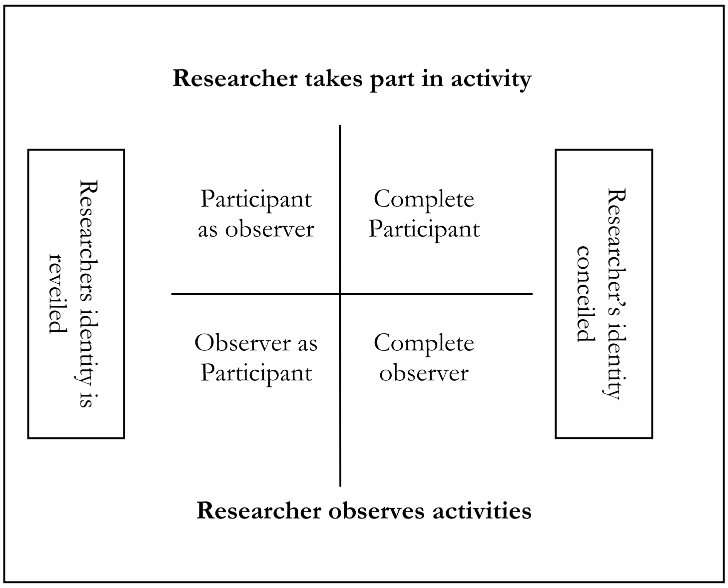

Figure 2 Typology of participant observation researchers' role (Saunders et.al., 2007)

When everyone knows why you are there, and why you are observing without participating they might feel a slight stress of being watched. However, there was no possibility of observing without being in the room, and just observing without telling who you are and why you are there, would probably have been much more disturbing for the participants.

2.3.3 Multiple-case Studies

A qualitative study can be based on one case study or a multiple-case study. The evidence from multiple-case studies are considered more convincing and strong than those from a single-case study (Herriot & Firestone, 1984). Some researchers also hold the view that a multiple-case study also holds a better explanatory authority and generalizability (Miles & Huberman, 1994).

One weakness of doing a multiple-case study is not being able to go as much in depth as with a single case. A deeper research of one case would probably give a deeper understanding of the processes of implementation.

However, we have decided to do a multiple-case study in order to be able to make generalisations from the results and give our conclusions more convincing and explanatory authority.

2.3.4 Selection of Cases and Respondents

In the selection of cases the frames were constituted by the clients of the host company. Several companies have participated over the years in the educations offered by the host company, so a distinction had to be made to select appropriate candidates from this group. First, the company should have participated in the Lean School for small businesses offered by the host company. Second, it is important that the program they participated in looked the same for all companies, preferably that they had participated in the Lean school at approximately the same time. It makes the analysis easier if the time frame for the education and implementation is as similar as possible. In co-operation with the host company eight candidates that suited into these frames were identified and invited to participate in the research. A further selection out of these eight was not possible to make, and instead the willingness from the companies to participate made out the final screening of candidates. In the end three companies out of these eight were willing to participate. The host company and the participating companies have wished to stay anonymous in this paper, and will therefore not be referred to as HC (Host Company) and company A-C.

A second selection was done, and it concerned the respondents for the interview session at each company. In each company two different respondent groups were chosen. The criterion for the first respondent group was that they had participated in the Lean School for small businesses. The criteria for the second respondent group was that it needed to be an employee that had not participated in the education program, but worked in the production. A problem encountered when interviewing the employees who did not participate in Lean School was that they did not fully understand the theoretical questions. This was handled by further explaining the questions and since this was done orally the explanations might have been understood differently by the respondents at the different occasions. This might have affected their answers and thereby the analysis.

2.3.5 Interview Method

In preparation for the interview two questionnaires were outlined (see Appendix 3 and 4). The questions were constructed with both the purpose of this thesis and with the theoretical framework in mind. The discussion in the theory circulates around the agents taking an active part of the implementation such as the translator, leaders and project group members. The questions for the lean school participants therefore are supposed to give information that can be discussed and compared with the theoretical framework.

The questionnaire for the respondents not participating in Lean School is supposed to give a broader and not so deep picture of the context of the implementation and its reception in the organisation. Therefore two separate questionnaires were designed, one for each of the two respondent groups, because the respondents would not be able to answer the questions from the same standpoints. The questionnaire of the co-worker not taking part in the lean school was based on the questionnaire for the respondent who did attend the Lean School. This because it was necessary to keep the information gathered and focused to the same area to enable a comparison. However the questions were altered or excluded in order for the co-worker to be able to answer them, for example the co-worker would not be able to answer a question of what the impression was of the Lean School. The questionnaires have closed ended questions that are followed by open ended questions. It also has pure open ended questions which make the questionnaire to be regarded as semi-structured. A negative aspect with interviews is the risk of making allusion errors. One example is if you ask one company about one thing, they perceive the objective word differently than the interviewer or other companies. The answer will thus not show the information needed

In order to avoid this a semi-structured questionnaire was constructed to ensure the possibility to ask follow up questions if for example the respondent does not fully answer the question, or do not grasp the meaning of the question. By asking follow up question we could ensure to get make the question understood and get out the information needed. The negative aspects of a semi-structured questionnaire are that the answers can be very long and not in the field of the wanted subject, there is also a possibility that the follow up questions can twist the answers received. The questions in the questionnaires (see appendix 3 & 4) were looked over by the contact person at the host company, and also by the thesis supervisor.

The interviews were conducted face to face, with one respondent at a time. Present at the occasion were two interviewers, one actively interviewing while the other was passively listening and taking notes. If both were active it might have caused the interviewee to feel outnumbered or stressed. If one of the interviewers stay passive it gives that person the time to digest the answers and write down follow up questions for clarification, which can be asked at the end of each interview. The advantage of having two interviewers is that it increases the amount of information that can be perceived at each occasion. It is also good because people perceive information differently, and in this way one has two perceptions of what took place. Furthermore, it gives a more objective material to the analysis. To catch as much as possible of what was said, a tape recorder was used. Afterwards the interviews were written down word-by-word, and then rearranged to be easier to read and follow by the reader. The duration of the interview was kept to approximately one hour. This because it seamed like an acceptable amount of time to be required from the company's part and also to help the interviewers to stay focused on the subject.

2.4 Reliability and Validity

When doing half structured qualitative interviews, as in this thesis, issues regarding reliability and validity are common and important to address (Saunders et al., 2003). To ensure a high reliability, a standardization of the interviews is required (Easterby-Smith, Thorpe & Lowe, 2002). The interviews here have been highly standardized by using the same questionnaire for all companies. The positive aspects of standardized interviews, is that it allows making comparisons between the answers received in the interviews. Another positive aspect is that is time efficient. The negative aspect is that the same questions can be understood differently by the respondents since they operate in different businesses, in different positions and has different works.

In this thesis two of the authors together conducted the interviews, where they each interviewed one respondent. It is important to make sure that the answers of the respondents convey the same information despite different interviewers. In order to get truthful answers, the interviewer should avoid showing individual views and comments that might colour the respondents' answers (Easterby-Smith et al. 2002). This was managed partly by using standardised questions, and it also helped that it was two interviewers so one could correct if the other posed a question subjectively. The questions in the interviews were constructed to receive information on specific issues which were tied to the purpose and theory. In this way relevant and comprehensive empirical data was obtained.

According to Walford (2001, p. 90), "*Interviewees will only give what they are prepared to reveal about their subjective perceptions of events and opinions.*" Sikes (2000) goes even further and claims that respondents have little to gain from telling secrets and might also lie. The interviewees in this thesis were given anonymity in order to ensure better trust between the interviewee and the interviewer. Since the companies are small, everybody knows who have participated in the interview at their company. This gives the risk that they were not completely candour about negative aspects.

Reliability, the extent of consistency in the findings, is enhanced by describing how the study was conducted and how the findings were derived from the data (Merriam, 1998). How the study constituted by interviews was conducted is described above in the method chapter. To get a more realistic view of the actual changes we visited the production area of each company. Findings in this thesis will be the derived from the comparison of the theoretical framework and empirical results. This is done in the analysis in Chapter 6.

Internal validity, the extent to which research findings are matching the reality (Merriam, 1998), has been assured through the interviews with non Lean School participants (NL) to see their interpretation of what has been done, and if they support what the lean school participants say. Moreover the interviews with the non Lean Participants were conducted to make sure that managers do not overestimate the changes made. To increase the external validity we did the interviews on three small companies that had started to implement the lean concept. Furthermore the research questions were the same to all companies and two interviewers were always attendant on the interviews to decrease the subjective interpretations. If another study were to be conducted in the same environment, companies of same size in the same lean phase, most certain same result is to be expected.

The questions have been posed in Swedish because the companies are Swedish. For the thesis the interview results have been translated into English so there is a possibility of ambiguity or information lost in the translation process. However, the results of the interview have been sent to the interviewed companies for approval to exclude the possibility of using wrong information. The questionnaires used for the interviews are presented in both Swedish and English in the appendix.

3 Implementation and Translation in Theory

3.1 Implementation of Efficiency Methods

Hansson (2003) has done an extensive study of the implementation of Total Quality Management, TQM, in small organisations. Hansson (2003) has looked at how a group of small organisations have worked with implementation, of another technique for achieving efficient production, TQM.

3.1.1 The Importance of Core Values

TQM is a technique for achieving a more effective production by aiming at eliminating product errors, similar to Toyota-ism mentioned previously.

Hansson (2003) has chosen to base his research on the interpretation of TQM by Hellsten & Klefsjö (2000, as cited in Hansson, 2003). Hellsten & Klefsjö (2000, as cited in Hansson, 2003) implies that TQM can be regarded as consisting of the three units: core values, tools and techniques. The goal with TQM is to "increase customer satisfaction with a reduced amount of resources".

Looking over the different interpretations, values are generally brought up as important. Many regard the values as being fundamental and therefore denote them as core values. The number of values differ between the interpretations and range from 5-11 principles. Six factors that are commonly mentioned are:

- Customer focus and satisfaction
- Employee training
- Leadership and top management commitment.
- Team work
- Employee involvement
- Continuous improvement and innovation

These core values are presented more closely in Appendix 1.

The three core values leadership, everybody's commitment and customer orientation were found to permeate all organisations that had implemented TQM successfully, which according to Hansson (2003) would imply their importance for success. Hansson (2003) distinguished three phases identified in the change process. In the process the phases interact and affect each other, and constitute a gradual transference from working with one core value to the next.

3.1.2 Common Problems

All organisations that were in the multiple case studies stressed the availability of education as being vital. It is also proposed by researchers that in preparing for TQM an implementation, education and training is of major importance (Newall & Dale 1991, Reed et al 2000; as cited in Hansson, 2003). A suggestion is to work in cross-functional teams, which affects the understanding of TQM in the organisations positively. It was also a common experience that people in the organisation actually have a good preunderstanding of some of the core values already from the beginning.

Studies have shown that organisational and human issues constituted the real barriers for the implementation (Gilmore 1998; as cited in Hansson, 2003). Change is often met with resistance within an organisation. The solution presented is to use team work, increasing employee involvement and foster a change-friendly organisational culture, which will help to create a willingness to change (Samson & Terziovski 1999; as cited in Hansson, 2003). The importance of putting attention to intangible assets is once again stressed as being vital for success (Oakland et al 1989, Reed et al. 2000; as cited in Hansson, 2003).

It is said by Kotter (2006; as cited in Hansson, 2003) that the larger the difference of the new and old system is, the larger will the resistance be. These problems of resistance could be an effect of managers misjudging the effect of the gap on their relation with subordinates. The willingness and ability for managers to change is equally important as the issue of the organisational resistance. The willingness to change will set the outcomes of the implementation. The lack of management commitment therefore is a major factor for successful implementation of TQM.

Another implication from Hansson's studies (2003) was that work towards a process orientation was a significant problem area. There are also other obstacles mentioned for TQM in itself, such as it being time consuming, formalistic, bureaucratic, rigid and impersonal. It should also be mentioned that a company that is already successful, has a deep-seated culture, has had a great deal of change already, the changes lacks legitimacy, education and communication risks facing an even higher resistance. (Allen & Kilmann 2001, Bayo-Moriones & Ceiro 2001; as cited in Hansson, 2003).

Hansson (2003) has gathered his results from his studies in a figure with guidance for increasing the odds for a successful implementation of efficiency strategies. (See Figure 4)

Figure 3 Important categories in managing commitment according to the discussed literature review. (Hansson, 2003)

In short his results showed that a committed management should focus on activities within the important categories: leadership and support, strategic planning, training and education, monitoring and evaluation, buying-in and empowerment, and information and communication. This would promote employee commitment, which is essential for a successful implementation (Hansson, 2003).

3.1.3 Challenges and Advantages of Being a Small Company

Small organisations have an advantage at leadership commitment because the commitment of leaders becomes more apparent in a small organisation. Fewer leaders also mean that coordination and communication can be done better (Ghobadian & Gallear, 1996; as cited in Hansson, 2003). Another advantage for small organisations is their closeness to the customers, which makes it easier to identify the needs and expectations of the customers (Haksever, 1996; as cited in Hansson, 2003). One can also see that employees in general are closer to the customer, creating a feeling of responsibility (Ghoadian & Gallear, 1996; as cited in Hansson, 2003). To summarize, small organisations have a great advantage in having a more flexible organisational structure, a strong innovation ability, lack of hierarchical positions and a strong organisational culture (Welsh & White, 1981; Haksever, 1996; as cited in Hansson, 2003).

One negative point for small organisations is the lack of possibility to collect and process all the data and info about customers (Haksever, 1996; as cited in Hansson, 2003). When it comes to decision-making small organisations usually don't have precise knowledge and technical expertise to gather or store sophisticated statistical information or analysis to base the decisions on (Haksvever, 1996; Ghobadian & Gallear, 1996; as cited in Hansson, 2003). It has also been found that small organisations in general are slow in their adaptation of TQM, possibly due to a lack of resources (Lee & Oaks, 1995; as cited in Hansson, 2003).

Gunasekaran et al. (1999) makes the following statements about Small and Medium sized Enterprises (SME's) in general:

- Duties that are closely linked to production, in SME's, most often involve a high degree of human decision making and implementation.
- Employee's relationships are very important in SME's.
- There is a great inbuilt innovative potential in SME's.
- SME's have an inherent capability to react fast which enables them to keep up with fast changing market conditions.
- Lean administration in SME's allows energetic and entrepreneurial managers to quickly react to new opportunities and benefit from them even when having to accept risks.
- Decision ways are short due to efficient and informal communication in SME's.
- SME's respond quickly to internal problem solving which enables them to reorganize fast when needed.

By SME's Gunasekaran et al. (1999) refers to companies not having more than 500 employees or net fixed assets more than a third of its resources held by a large company.

3.2 Translation of Efficiency Methods

The focus of Quist (2003) has been to increase the understanding of the translation that takes place when a model for customer oriented organisational development meets practise/reality. In this discussion he uses the terms translator and organisational platform, which are explained to start with to make it easier to follow.

Translator: that or those individuals who learn about a new method and are responsible for influencing others to accept and work with the model.

Organisational platform: the base created in an organisation that gives legitimacy to the work with changes.

3.2.1 Organisational Platform and Legitimacy

In TQM and other models the leadership is emphasized and given a decisive role for the success of an implementation. Behind this lies the experience of organisational power and possibilities to make an impact. A leader has the resources to influence others' work in a wished direction, and also controls how time and money should be used. Quist (2003) expresses thoughts on what a limiting effect such a ”truth” might have. According to Quist (2003), studies have shown that it is of large significance that there is a solid ground to stand on in order to be able to work successfully with an implementation. In order for the idea (the model) to influence the action pattern of many individuals the legitimacy of the *translator* is important. Probably it makes things easier if the leader is the translator, since that person already has the hierarchical position that gives the necessary legitimacy. This solid ground is by Quist (2003) called the *organisational platform*.

Quist (2003) brings up two examples from his studies where many of the central actors on the “right” positions, despite a positive attitude did not succeed in generating action. One reason for this was a lack of translators. Situations where committed leaders have acted translator have not automatically led to success. In the latter case it appeared that the commitment can lead to restricted reflection, and result in the leader running ahead of the organisation. These examples prove that a committed leadership not always has to mean success. Quist (2003) brings up a situation where a change of CEO takes place, and the translator looses his legitimacy for continued work since the new CEO is critical to the changes. According to previous theories the work with the implementation would seize without a committed leader, but Quist (2003) insists that the model itself has continued to affect the development of things within the organisation. He explains this by saying that the concept organisational platform is developed through the distinction between being assigned or created. Quist (2003) argues, thus, that translators never have reason to excuse their passive attitude with the lack of engaged and committed leaders.

There are large possibilities to affect the organisational platform. An individual or group of individuals can by using rhetorical and political abilities contribute to create an organisational platform from which the work with the model can be conducted. This can be done even if the leadership does not show a positive attitude towards the work with the model. Quist (2003) summarises that the leadership possibly have been assigned too much significance in previous research on TQM. Leaders have an important role when it comes to the presumptions for the translation process, but a less decisive role when it comes to the realisation of the translation process and long-term results of the implementation.

3.2.2 The Reflective Practice

The translation process contains elements of mediation and a will to self-learning. In the beginning of his study Quist (2003) believed that it was the mediation that was of most importance, but realised that it rather was the learning process. In the view of the complexity of the model, the ability to let oneself be influenced of the own and others' actions is important in this context. A will and ability to learn and reflect over one's knowledge seems to be of great importance for the successful translator.

Weick (1995; as cited in Quist, 2003) stresses the action as central for understanding meaning creation, and talks of the organisation as a verb rather than a noun. Quist (2003) regards the work of the translator as a handicraft. The translator departs from uncertain presumptions and will through actions create something new. Practical knowledge traditions are described as an antipole to our western science tradition. Schön (1983; as cited in Quist, 2003) describes how technical rationality controls the view of practical knowledge. Practical knowledge is limited to solving ready formulated problems. Attention and learning are emphasised as important abilities for a reflective practitioner, and the creation happens in interaction with the situation in question. This means to realize what one does while it doing it. The more experienced the better the practitioner learns (Molander 1996; as cited in Quist, 2003). Quist (2003) finds this a perfect description of a translator's role. This kind of reflective work is a step aside from the dictated approach for how you should work with the model, a phase where the organisation leaves the "model-addiction" to use an own approach where correction of the operation is more central than individual questions of original criteria material. It is natural that is caught in the model translator during the first time, which demands all attention.

The learning is thus an important part of the translation process. It is reasonable to assume that the translator who works within the frame of an immature organisation is limited in the own meaning-creation around the model. There are no shortcuts when working with a model. Every translation-process needs to go through phases of failure to achieve the context-dependant learning that is necessary for the following step (Quist, 2003).

The knowledge concerning the model is developed in time with the realisation of the translation process. Since every new level of knowledge in action is created in interaction with others, the whole organisation is affected by the knowledge shift of the translator. Quist (2003) does though find cases where the creation of new insights comes off rhythm with the rest of the organisation, and wonders if this indicates if knowledge in some cases can be of disadvantage.

3.2.3 The Matter of Timing

The ability of the translator to be able to see and understand a pattern of interactions in when the model meets practise seems to be very decisive. Quist (2003) draws parallels to the sports world and the ability to "read the game". The example of a football player's ability to read the game and a translator's ability to see and understand a pattern of interactions is summarised with the term *timing*. In Quist's (2003) studies it is obvious that time plays an important role when the model meets the real world. The meeting is not an isolated event, but happens parallelly with several other processes. Another important ability is included in timing, and it is to predict future behaviour patterns for co-players as well as opponents.

3.2.4 Problems in the Process of Learning

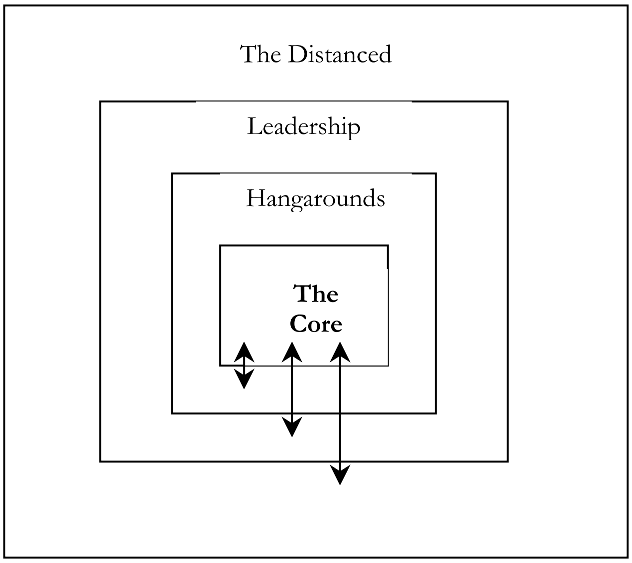

Figure 4 Four different collectives that creates meaning around the model

The Core – The group of translators that runs the work with the model.

Hangarounds – Largely shares the perception of the Core about the work with the model. Can be both leaders and co-workers.

Leadership – The formal part of the leadership.

The Distanced – They stay in the outskirts and are not really involved.

The point with the figure is to clarify that the degree of collective meaning creation within different groups seems to decrease with increasing distance to the core. Quist (2003) makes the assumption that average actors who belong to the distanced have less common perception with the core than do other actors. If you see these four collectives over time, one can see that the degree of learning is substantially higher the more central you are in Figure 5. Empirical results show that there is a risk that the group with the most learning underestimates the problematic that Figure 5 indicates. They simply underestimate the own learning process. The translator takes good time to himself developing a deep understanding for the model, while others do not get the same possibilities. The translators understanding of their own learning in interface with the organisational course of events is suggested to be an important ingredient for a successful translation process. Not least it is important in order to master the tension relations in the organisation between the centre and periphery (Quist, 2003).

3.2.5 The Translation Process

Quist (2003) separates the translation process into several types, and has drawn a model which is wide and deep in describing the process. The model's contained complexity is represented by its contents dimension. Also, the first level concerning the content is close to the theories by Rövik (2007/2008) about translation and also the purpose of this study, so focus will be put on the blue area in figure 6. The activity of translating the ideas is divided into an *instrumental* and *challenge* part. The *instrumental* translation process emphasizes the classical instrumental view of the organisation. The content is learned acontextually, and functions as the base for the whole translation process. Then the learner will go on to the part of the process called *challenge* where the knowledge meets the context i.e. reality. This includes a questioning of the relatively firm imagination in the current practice.

There is a form of mutual dependence relationship between the different processes which increases the complexity. The largest interaction happens in the *content* process. Again and again one is forced to deepen the meaning creation around the model as a result of resistance or questions raised, and the challenging process. A new and deepened acontextual understanding of the contents of the model through instrumental translation can in its turn lead to continued challenging translation.

It is first when a relatively deep understanding of the idea content has developed that the translator, and later on the rest of the organisation, can break out of the prescribed approach method and initiates a meaning creative translation process. It is reasonable that the contextual translation process around intention to work with the model departs from a relatively deep understanding of its contents dimensions.

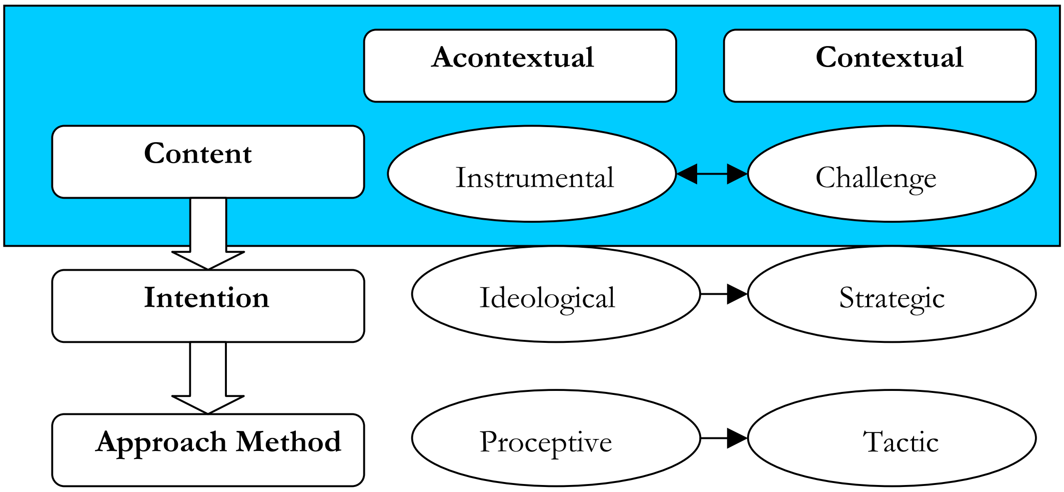

Figure 5 Modification of a Classification of the six types of translation processes by Quist (2003)

3.3 Reception and Transferral of Organisational Ideas

Rövik (2007/2008) has the goal to critically view the content of streams of ideas that most strongly impacts the design of the organisations of our time. Theoretically the ambition is to develop the French Scandinavian theories from 1980-1990's saying that the transmission of ideas and knowledge is a form of translation.

Ideas or recipes on how organisations should be designed, ruled and runned have six common features:

- They are many
- They are present everywhere
- They often has an unclear history
- They are impossible to avoid

- They leave traces in organisations
- They have ambiguous effects

3.3.1 Critical Phases When Transferring Organisational Knowledge

The research by Rövik (2007/2008) is about supply, demand, reception and implementation of organisational ideas and is divided in four parts where the fourth has a focus on transmission, reception, implementation and applications of organisational ideas. When it comes to the phenomena ”transmission of organisational knowledge” it is separated in two main types:

Decontextualisation – ’packaging’. This means picking out something from a context, for example when an organisation has developed an effective efficiency method and takes the practice out of its context, e.g. a certain industry, with the intention to transmit and introduce this into another context. According to Rövik (2007/2008) decontextualisation must be separated into two forms, separation and packaging. Separation is to give a successful practise within a certain business a representation in the form of an idea with the intention of transmitting it to another business. Packaging can be described as to give this idea a more common form in order to make it easier to transmit to other organisations. In this phase there is always a risk of that essential contextual prerequisites are lost during the work to describe and spread the ’recipe’ which has previously been locally successful.

Contextualisation – ’unpacking’. This phase includes the demand from organisations, reception, implementation and application of ideas and popular recipes. Here the purpose is to materialise the recipe into activities, routines and structures. Rövik (2007/2008) questions what happens when one tries to take in general organisational ideas into a specific business. Will it quickly be thrown out again, or will the reform better fit the local context? How long time does it usually take from that an organisational idea is picked up until they are materialised?

By separating these two main types an analytical conceptualisation of the whole transmission chain appears, and this gives a possibility to identify critical phases in the knowledge-transmission process.

3.3.2 The Translator’s Role

Rövik (2007/2008) makes three statements about the translator’s competence in regard to good or bad translations of organizational ideas where one is that the translator competence determines if the idea transaction is going to be successful. Furthermore, the importance of this competence has not been seen as this important for long and therefore has not been taken care of. Due to the last statement translator competence in organizations is scarce and are not enough acknowledged by actors involved in the transmission processes of ideas and knowledge.

The translator needs to be aware that all essential presumptions for in what way the practice or model in question are exercised and functioning, are not always outspoken. This emphasizes that the translator needs to be able to speak out the unspoken. The competent translator has to see and grasp the unspoken to do this. Furthermore, Rövik (2007/2008) underlines that the competent translator must have knowledge about the context that the practice or model originates from but also about the context that the practice are translated into. If the original practice or model originates from a context with unclear history and linkage to the receptor context it is going in to, a possible strategy is to deal with this by attempting to re-contextualize the practice. This can be done by looking closer at how other organizations, more alike the own organization, have applied the model and learn from them.

The translator's position is also of importance since it can be described as a "viewpoint" from where some aspects can be clearly seen while other aspects end up out of the translator's sight (Rövik, 1998, as cited in Rövik, 2007/2008). This means that a person in a leader position can have a good overlook of the situation but might lack knowledge of details in some areas while someone one the "floor" might have good knowledge of details but are missing the overall picture. Research shows that the most common formal position of translators is a leader position of the organization or unit where the implemented method is localized and performed (Rövik, 2007/2008).

3.4 Combination of Theories

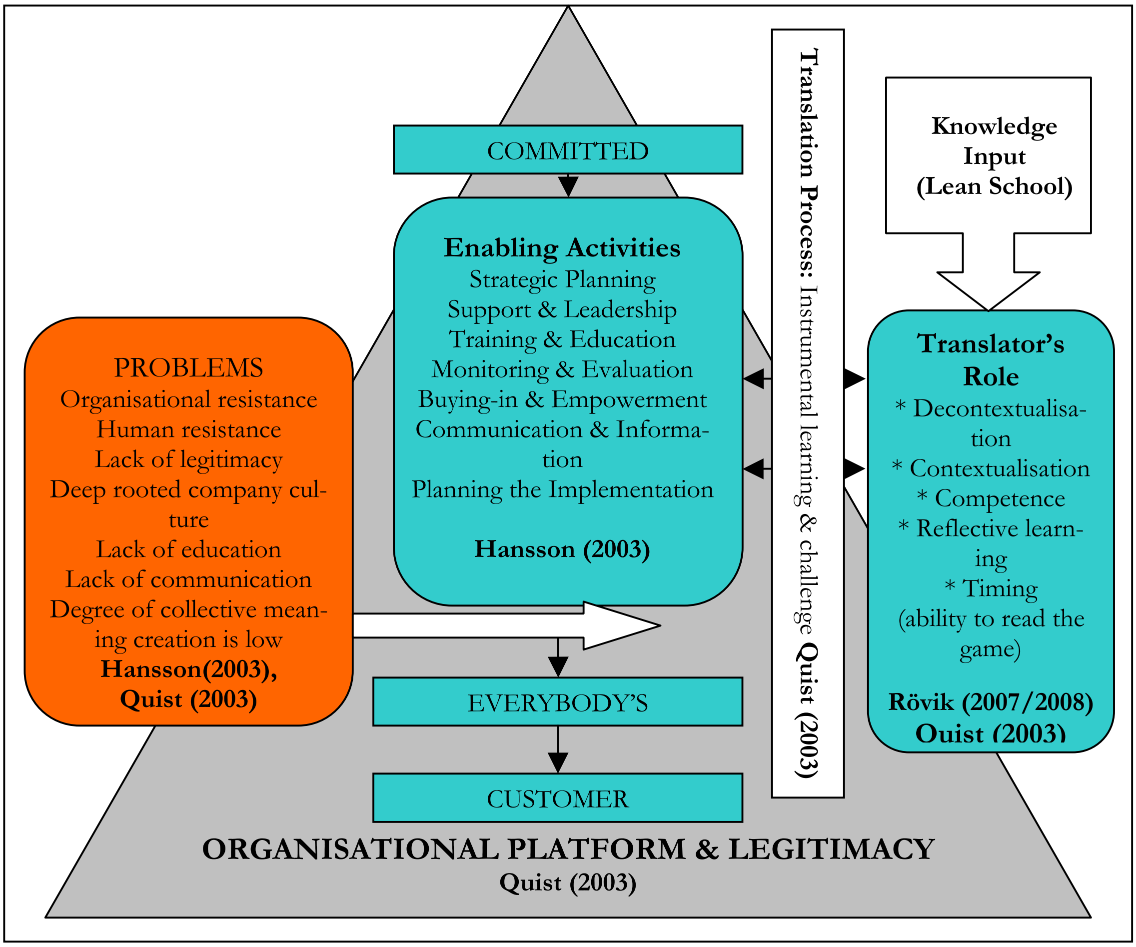

Figure 6 Combined model for translation & implementation of efficiency methods

To summarize the theories discussed previously, a combination model has been outlined which presents the points that were most relevant for this study (figure 6). In the centre of the model is the idea by Hansson (2003) about the three most important core values, that he had found permeated all organisational that were exceptionally successful in implementing the efficiency method TQM. Among the enabling activities we can find planning, support, education and communication among others. The leader commitment is the most important factor in order to enable employees and achieve everybody's commitment and customer orientation. These activities are directly connected to the translator's role presented by Quist (2003) and Rövik (2007/2008).

The translator is the person given the responsibility for the implementation, and therefore needs to learn about the new ideas. With Knowledge Input is meant what the translator has learned in the Lean School given by HC. The knowledge given in the Lean School presented more closely in chapter 4. In this process Quist (2003) points out that reflective learning, i.e. going back and forth between the knowledge source and the reality context in order to gradually develop a more suitable implementation plan. This is also referred to as the movement between *instrumental learning* and *challenge*. Rövik (2007/2008) emphasizes the importance of the translator's competence in regard to whether a translation of an organisational idea is going to be successful or not. By competence Rövik (2007/2008) means knowledge of where the method originates from but also of the context that the practice is translated into and that all essential presumptions for how the practice or method is working is not always outspoken. This means that the translator needs to be able to both see and seize the unspoken in order to speak it out. The formal position of the translator can affect the outcome of the implementation, if seen as the view point from where the translator has an overview of the organisation. A translator with a leader position might have a good view of the organisation as a whole but lack in detail knowledge, or it can be vice versa. A formal position can thus be enabling and limiting at the same time (Rövik, 2007/2008).

In a separate alert-orange area the common problems with implementation brought up by the three researchers are presented. Resistance in both active and passive form can occur and has its origins in different things. Lack of, or too weak, activities in the three areas enabling activities, organisational platform & legitimacy and translator's role will lead to some of the problems presented here. For example if the enabling activity communication & information is not performed appropriately it will lead to a low degree of collective meaning creation since not every one has understood what is going on. Problems such as cultural resistance or personal resistance originate from the organisation itself. Employees or the leadership are happy with the present situation, and do not wish a change, or see the necessity to do so. They might understand that change would make things better, but see the effort as such a barrier that they choose to remain where they are.

The points above: the commitment of leaders and employees, the existence of and activities by the translator, and a firm organisational platform (that is given legitimacy) to depart from when implementing, they all have strong interconnections and functions interdependently. If the research results from Hansson (2003), Quist (2003) and Rövik (2007/2008) with their different angles of the implementation are combined it gives a model such as Figure 6 with more dimensions that all are needed in order to succeed with an implementation.

The triangle in the background of the model represents the company's organisational platform and the legitimacy to perform changes described by Quist (2003).

4 Lean School for Small Companies

4.1 The Host Company

At the host company several methods or tools for efficiency are used such as Toyota-ism, SMED (Single Minute Exchange of Die), 5S, Kaizen, Total Productive Maintenance (TPM) and Total Quality Management (TQM) (see appendix 2 - Wordlist of methods for efficiency improvements, for explanations of these concepts). In the academic world some of these are defined as methods, or merely as tools or parcelled out pieces of whole theories. The host company has fused a number of these concepts into something they simply call 'production efficiency', which is taught out to clients (material from HC).

The book *The Toyota Way* is the basic theory on which HC have built their Lean School (CEO at HC, personal communication, 2008-10-13). This book is the result of twenty years of studying Toyota and its processes, and describes the fourteen principles behind Toyotas way of manufacturing cars (Liker, 2004). The motivation for why the Toyota concept as been chosen as the theoretical back bone of the Lean School is that it is the world's most successful concept within efficient production. The concept has been translated into Swedish, and has been adjusted to fit Swedish and European business culture (CEO of HC, personal communication, 2008-10-13).

The Lean School should be seen as a process concerning the individual, and related to the participant's reality and experiences. An analysis of the current situation in the organisation's production is made as a part of the learning process, and an action plan for change is designed and followed up. Furthermore, the participants get to tie their reflections to theories and generalizations. In order to help the individual to grow, the Lean School uses tools such as exercises and role plays and feedback. The ability to deal with conflicts, communication, values and self image are regarded as important factors. The pedagogical approach is "learning by experience", which means that the participants share experiences with each other, and discuss theories on their experienced causes and effects. This will make the participant conscious of which abilities they need to improve in order to reach their objectives (CEO of HC, personal communication, 2008-10-13).

4.2 The Lean School for Small Companies

In this section, a diary from each of the three meetings is presented. The facilitator of the meetings is referred to as FA in the diary.

4.2.1 Lean School - Meeting 1, 2008-10-14

The first meeting, or the course start takes place at HC's office a Tuesday afternoon at 1pm. The meeting is planned to end at 8pm which seems like a long time but the program of the first day is extensive so it is necessary. FA welcomes us and starts out by telling us about the program. During the afternoon FA will introduce the LEAN concept to us and the participants of the course will get to play a game called the production game five times.

FA gives a lecture on efficient production and the LEAN concept. She emphasizes the importance of team work and brings up the advantages of being a smaller organization when making organizational changes like for example a "tight communication" and shorter decision paths. There is also less competition among different teams in a small compared to a large organization.

The keyword here is to adapt the tools for efficiency work to the organizational culture of each company. There is no right way to go except for always keep on working with improvements because there is always something to be done. Unless of course the company can say yes to the following questions: “Are our customer always satisfied?”, “Is the world around us standing still?”, “Are our competitors doing a bad job compared to us?”, “Do we make more money than we need?”, “Are we satisfied with the work climate?”.

The production game is played five times during the first day and between each round FA holds a discussion with the group where the group can improve their strategies before the next round. The goal is to make the game-company profitable, and the result is improving with every round.

The participants are asked to consider the following before starting the next round:

1. Vision/objective – Are employees familiar with vision statement and objectives of the company?

2. Production flow – Large scale manufacturing. Are there in between storage and what is the time frame like?

3. Operation of workstation – Is workstation messy or organized?

4. Layout – Are all material in the right spot? Unnecessary transfers?

5. Extent of waste – Waste of resources?

The game is played over and over and already after round 2 there are significant improvements in the financial result of the company. The participants seem to enjoy playing the game. They cooperate together in their different roles to achieve the best result possible. The challenge is to make the game-company as LEAN or as efficient as possible by reorganizing the production line and taking strategic decisions about machines, equipment and work stations.

In between the game sessions FA is telling the group about working with tools like 5S (a way of organizing and cleaning workstations as well as other areas like offices). FA also talks about the hindrances that might occur during the work with organizational changes such as:

1. Not enough time

2. Not enough competence

3. Not enough patience

4. Not enough courage

The idea of playing this game is for the participants to get a “hands on” perspective on LEAN and efficiency work. This seems to have been accomplished after the last round. The participants seem inspired. The seven hour meeting went quickly by and it gave an overview of what challenges the production industry faces and how the different tools of LEAN can be of help.

4.2.2 Lean School - Meeting 2, 2008-11-11

The second meeting is held in a manufacturing company located in Småland region. The first part of the meeting is held by the production manager of the company. He starts by introducing the company, and then presents the company's work with lean. The point that LEAN and efficiency work is a different process for different companies is emphasized. This particular company has worked a lot on its vision and strategies. The production manager gives all of us a small book similar to "The Toyota Way" book that HC uses in their Lean school. This is a "company bible" that all employees and customers of this company get where vision, principles, ethics and much more about the organization is presented.

Then we get a tour through the manufacturing factory where we get to see the practical efficiency work the company has done. They have made a great deal of changes in their production line to make it more efficient, even if they are far from where they want to be in the process. The production manager tells us both about the challenges they have met during the implementation but also of positive effects they are experiencing already.

After the visit the FA takes us to a conference room in another facility where the participants are divided into smaller groups. The first task is to discuss the impressions from the visit, what parallel participants can draw from their own companies and possible strategies for their own implementation. They are also asked to think of what visions they have in their businesses which starts an interesting discussion.

The second task is to discuss the 14 principles of Toyota Production System. What advantages/disadvantages? Is your company using any of the principles already? Do you see any of the principles as more challenging than the others?

Other aspects like customer value and waste are brought up for discussion. In the discussion the importance of vision, leadership, employees and firm principles are emphasized.

Before finishing it is decided that the 5th and the 7th meeting will be held at two of the participating companies. In meeting 5 FA will help the host company to start their work with 5S and in meeting 7 FA will perform a SMED test and practically show the method in the other host company.

4.2.3 Lean School - Meeting 3, 2008-12-05

The third meeting is held in the locales of HC and is lead by a psychologist and engineering lector (PE). The meeting is an eight hour long lecture on leadership where the participants are mostly expected to listen but also to interact by asking questions and doing exercises in groups.

PE starts the lecture by informing us about the main subject of the lecture, which will be leadership and motivation. How do we get employees to do what we want them to do and why do they feel like they do? The importance of how to reach goals is emphasized and PE points out how work performance is closely tied to individuals' wellbeing. "Clear goals are not enough; one has to carefully follow what happens along the way." "In order to work with Lean; one has to take interest in people actions" (Personal communication, PE, 2008-12-05).

Furthermore, there are different levels of work performance, bad, acceptable, good and excellent according to PE where the desired level is between acceptable and good. This is to make sure that the final product outcome is excellent since the largest quantity of employees will always be somewhere between acceptable and good and thereby most of them will be able to do their job. If the aim is to reach excellent work performance only the few in this category will follow and the final product outcome will not be excellent due to that the many in other categories will not be able to perform on this level. This leads to waste of resources. The leader should rather hold back the "excellent people" to a performance on good-level. "Lower the work performance to improve totality" (Personal communication, PE, 2008-12-05). Work performance should not be confused with the product outcome which of course always should be excellent according to the final customer.

PE argues that creativity is not what Swedish working life needs, but rather focusing, delimitations and concentration. People are according to PE always creative but the need for change or of finding new solutions should always be indicated by the customer. If the customer does not want change it is a waste of resources to work on change.

Reward systems may need to change when implementing Lean to better suit. This is to ensure that the work performance levels acceptable to good are rewarded.

The leader needs to have a perspective of himself/herself as servant of employees and make sure that employees have everything they need to solve their job assignment. To achieve this, the leader needs to practice active listening and daily communication with employees. Efficient operation needs an open and free discussion of hindrances occurring during work.

Moreover, organizations can not change employees' valuation but they can demand for certain behaviour.

Finally, PE concludes that in order to create motivation, the leader can vary the degree of challenge by placing requirements, and this is what Lean is about.

5 Implementation and Translation in Reality

5.1 Interviews with Lean School Participants

All the information past on below is the result of interviews with one to three people from three companies that has participated in the Lean School. The information is presented as objectively as possible, and the ideas and opinions are thus not that of the authors but of the respondents. The respondents will be given an individual denomination in order to make it possible for the reader to follow in who says what. The results from the interviews are divided under the four headings *Introduction*, *Why?, How?* and *Objective*. These headings are the same as used in the questionnaires and is an attempt to make it easier for the reader to follow the results.

The person who has participated in the Lean School will be called L, and the person not participating will be called NL. An extra letter will be added (e.g. L-A, NL-A) to show what company (A, B or C) the interviewee belong to. In company B two Lean School participants were present at the interview and they will be separated by being called L1-B and L2-B.

At the end of this chapter there is a summary of interview results, which are of use to the analysis model presented at the end of chapter 3.

5.1.1 Company A

In this interview L-A is production manager and NL-A is a production worker.

Background

The company is a manufacturing company located in Småland County. The company's turnover is approximately 20 million SEK and it has 14 employees.

Interview with L-A

Introduction

I have worked here for about five and a half years now, and am the production manager.

We want to be ahead when it comes to quality if one can see that as a core value. We are a small company that has grown a lot the last couple of years. The CEO started the company, and then it has grown, but he wants to keep the spirit of a small company. We do not want to grow too much, with the effect of the company getting divided in groups. We want to keep everyone on the same level so it does not become divided. Every individual are given responsibility, and everyone take responsibility and thereby feel participative in the company. We think it is important that everyone feel participative and get information about what is happening in the company. Maybe everyone does not need to know everything, but rather have information about the present general situation of the company.

The CEO has been told to write down a vision and goals, but have not done so yet. I believe that he has a vision in his mind, but not written down. He has his goals and vision, and then of course we have financial budgets etc. but it is not written down unfortunately. We are not so large, so still we all pretty much know in which direction to go.

We have had a somewhat structured work with efficiency work. We started out with 5S and worked with area by area. We started at the assembling area, where we have sorted out things we do not need and standardized the procedures. We standardized what material we use and threw away material that was out of date. We also planned where to get refill, and make sure there is always more in storage. A lot of work has been put into making it work, and it has got better than we expected. Then it is the after work to keep up the order, and to continue sorting out. Take pictures of how it is supposed to look like at the stations, and put up manuals for procedures. This was done very soon after we finished Lean School, because it was so terrible at the stations with problems finding tools you need.

We have worked with Lean before Lean School, but haven't had the tips and tools to do it. It is very much common sense that you need order and cleanliness to work well. We also got advice on what order to do things, because otherwise it is easy just to rush on with things. We got the advice to start with a small area first. In the beginning we saw many things we wanted to change, but calmed down and started with one area and how to make it work. We are going to go around and work with all other areas. We have done two more stations at the large CNC machines, putting up tool boards so you have tools within reach. Put up manuals so everyone knows who to contact if there are problems with a machine, or if tools are missing or broken. It has all been in somebody's head before. So this has become much better.

Why?

We have participated in some educations before Lean School which were about motivation. In the course we talked a little about Lean.

It has been naturally mainly me and the CEO who have pulled this forward. It has not been expressed that now you have the responsibility for this. I do not really know why the CEO decided to ask me to participate in Lean School. The decision to participate in Lean School was taken by the CEO so one day he came up to me and said: hey, we are going to go to Lean School. We gathered everyone when we were going to go through the assembling area and tell about our ideas, then we selected two employees to be responsible for keeping order at the piece of ironwork section, and only they have legitimacy to make orders. Then they got the mission to make things happen, which was followed up by me and the CEO together with these employees. It worked out well, so we gathered everyone again and went through the new procedures. We have two responsible employees at each station, and now and then we make controls to make sure things are still working out. It is has to work in their context since they are the once working with it. They should decide how they want it, and then we can come with tips and advice about how to do it. We cannot just come and say that they should do like this or this, but they have to come with ideas too and we work out a solution together.

We have definitely seen results. Before we could look for a specific screw or tool for an hour, but now it is easy to find. I think everyone have noticed that it is more efficient now. Before you could get so frustrated when you are in a hurry and then cannot find a tool, and you run around the whole factory to find it and finally take one from another station. Then the person at that station who needs his tool, which is now missing, gets frustrated too. Now it is much less frustration.

Of course the CEO must have seen a need because he decided that we were going to go the Lean School. I had worked in the production before, so I also had seen some need for changes. I mean every company working with production want to become more efficient.

How?

From the beginning we informed that we were going to participate in Lean School, but we did not say anything about what we were going to change. Instead we wanted to go to Lean School to see if it was something for us and feel what we could use, because you cannot copy something directly but adapt it to your own situation. You have to put it forward to the employees so everyone understands what the thought of it is, and not feels that it is just another thing to do. We have monthly meetings so it was during one of those that we presented our ideas, and asked people what they wanted to do. It is important that everyone gets involved, and that the project is not just a top-down governed project.

We have not had any education, but tried to transfer the ideas and what Lean is about. To transfer what we have learned in shorter sessions like information meetings or coffee breaks.

The changes to be done were decided together. What can we do, and do employees have any ideas? I think it is important that everyone is involved. I myself would not want someone just telling me to do in a certain way; it is easy to think that the old way works for me and ignore instructions. One should together come to a decision on what to do.

We felt that 5S was something that everyone could understand and tag along on.

The CEO practically decided where to start. We did a major sorting out, but then worked with one station at a time. So we have not a written a plan for a long time. We have limited resources, so we do not have the time to let someone work with it half time. Maybe the present low conjuncture can release time so we can work more with the implementation.

It is frightening to some people if you just say that now we are going to work with Lean. They wonder what it is. You have to make sure it does not become something burdensome or heavy. You have to point out that if we do this you can do more things in less time and with less effort. Things flow better and stuff. So it was not difficult to plant this within everyone, since so many had been frustrated with the disorder and the searching and stress. Implementing over a longer period and taking one area at a time also helps to convince.

We did the CNC machines now after the summer vacations. But it has been the most chaotic autumn ever, so we have had to focus on just output this semester. Assembly area was the largest area; and we saw it as most important to put the first effort here. Everything passes through the CNC machines so it is logical to start here. The other areas are also important, but in this first stage we did not want to prioritize those. What we have done is to divide the factory in different cleaning areas with one responsible employee for each area. Every Friday at 12 we have clean up-time and everyone have to clean up their area and put back things in order and clear passages.

It was a bit difficult with the CNC machines, because they are a bottle neck for us. It was not easy to set aside two people at these machines to work with changes instead of production. So I have had to go in myself to help getting things started.

Otherwise we have not gone so much in depth yet. We have also talked about starting with Lean administration in the office too. But we have two new people on finance and purchase, so we have not proceeded there yet. This makes it even more important to have clear manuals and standardizations to make it easier for new employees to come in and know what to do and how.

We had a time plan when to start with what, buy the things needed and when we want to be finished. Then we sat down to see how far we had got, and what could be adjusted. Then we decided on a new time limit and a check again, this will continue until the task is fulfilled.

We always need more space, and it has gotten better after sorting out unnecessary things but we would anyway need to expand.

The information from Lean School was so much so it has been impossible to keep everything in mind. Instead I have to go back to the material sometimes. During the school I also always related to my own company and context to see what can be done.

I have always been interested in production and production methods, so I wanted to improve the production and deepen my knowledge in the area. I felt that it was a lot of theory on the course, and it is good of course, but you have to go back to the material and read about it again. What I remember most is the visit to other companies, when we heard about their experiences and how they had done. I compared with our company, and saw that wow, have they got that much result with such a small change? You learn a lot even if the company we visited is in a different business. If something should change, I wish that there were more chances to see more physical examples. It is easier to take in the ideas then.

Even if you inform about why you do changes and what the results will be the changes will probably still be tough do go through with, but when you have done it you have changed so much. Everyone has more or less heard about it at previous workplaces, and we had talked about it a little before we decided to do it so it was not really something new. It has got a new, Lean, and then you have an identity for it. So I cannot say that we have met any resistance really.

Objective

My insight has been that I realized how much resource that gets lost when you are inefficient. Making visits to other companies made it easier to understand the ideas. So I think we have the knowledge to precede with for example SMED.

Customers have to be in focus for us. How we face or meet them, and what they want. Before with all the stress and disorder things could get wrong, and we had to redo orders. And you could have done something else in that time we redid an order. It felt like sometimes we redid almost every order. It was so frustrating to get back something you had done. It creates a bad atmosphere; you have to work overtime and it is frustrating in all aspects. So we have worked very much now with doing things right from the beginning. One customer said that: “before you made almost everything right, and now you make everything wrong”. It was not fun to hear. We had to put in a lot of effort here. One customer said: “Before you were our best supplier and now you are number 5” which was not fun to hear either. But it is all better now. We plan things better, when to do what and make sure that all material needed is available.

Yes, I think that the enthusiasm and commitment among employees have increased. They say: how could we go around looking for things before? The working tempo is lower, and stress levels are lower. Employees can focus on what they are going to do, and all things needed are available. It improves and makes things easier. We need to lift this with Lean again since it has been dormant for a few months, and to get started again now if people feel they have less to do. The CEO also wants to move things forward now when we have set aside time and money, to make sure that we are doing something with it and not wasting it. We might see that time is lost and people feeling irritated and stressed, while maybe the CEO sees it all in numbers and how much is wasted of resources.

We have a guy who is supposed to check the quality before delivery. But I mean, even if he finds the fault before send off we still have to redo it, even if it has not done any damage to the customer of course. Now we have introduced a system that the person check the quality at their station so we can trace where the problem occur. It is not to hang someone, but to find where the problem because it might depend on that we have got the wrong material or something.

The results have been a reduction of stress and a better working environment, easier to find things and so on.

We have a bonus system connected to profit, and of course that is directly connected to what we do with use of resources etc. There is also a more general system where we do some sort of activity like go cart or bowling. This is connected to resource usage and waste, to keep costs down, try to measure it every month and if the results are good we do something fun together. It is important for creating a team spirit and sense of belonging. The incitements make people be more careful for example when they order material so they order the right things.

Interview with NL-A

Introduction

I am a production worker, working with everything in production, productions steering and flow and production planning.

I have worked here for two and a half years now.

The changes have affected my work; I mean there is a totally different flow now in the production. What I can see much has changed, but it has been a bit chaotic after the summer vacations. We have different departments and work groups, but now it is to structure some stations better because some are right now chaotic. The once we have gone trough are much better. There is still much to do.

Because we are so small, I believe we all have a large responsibility and automatically involved. Even if only two have been on the course, everyone else has had the chance to say what we feel and think. Then it becomes that everyone is responsible I think. There is no one here who wants to stand above everyone and rule, but rather we do things together.

I have not perceived any particular goal, but rather that the flow should become better and better structure.

Why?

In this case such a change could not have come from below. It is so hectic here, so if one comes with an idea they say that we take it later. But if the leader decides it you just have to do it.

When it was actual we all sat down and discussed it, and everyone gave ideas on what could be done where. Then the responsibilities to do the changes were delegated.

The changes started quite early, right after the first course meeting. And it was not a soft start, but they started in a good speed directly.

How?

I do not think we have had time to resist the changes.

It was good that they were two, because the CEO has a lot to do so the production manager has been more active in moving the project forward.

Before we started the implementation the ideas were presented to us, and we were asked to start think about things we believed could be done.

Almost always the day after the course the participants shared what they learned or saw with everyone at for example the coffee break or lunch. L-A was very enthusiastic after the course meetings, and I think this enthusiasm affected everyone else to become enthusiastic too and things got rolling. I think that transferral worked very well for us.

Before you do a change you might think it is going to be very difficult or heavy, but the process goes so much faster than you think. When you do the changes you also have a lot of fun while doing it.

I think we feel more enthusiastic now, and that everyone feels like a part of it. It becomes so much more fun because you help each other.

The CEO has had to become more enthusiastic since there is a pressure from beneath concerning the changes.

When the flow is better, and you have better check on things you can answer questions from the customers better.

There are some of the elder employees who always find it more difficult with change. They keep themselves in their corner, but we try to help out. I think that it is the older people that are more resistant, because it has always worked so they don't see why changes should be done. They might not be negative, but find it difficult in following; it is not easy to get them to move along with you.

It has been said a lot that "I don't have time". But we don't have it as stressful that you cannot go back and put the hammer back in its position.

Objective

5S has given the most effective. You should have seen how it looked a year ago, and you would not say that it looked so spacious. We all helped out to sort out and through away things, and we had a great time.

5.1.2 Company B

L in this interview is two people so we will call the production manager L1-B and the local manager L2-B. NL-B is a production worker.

Background

The company has 9 employees and 20 hired employees from Samhall. It was owned by Samhall but changed owners in January 2007.

Interview with L1-B and L2-B

Introduction

The new owners have had Lean since 2005 in their organisation, so it is something that they think that our company should do too.

L1-B has worked here since 1993, and is a local manager, responsible for customer contact.

L2-B is production manager who has been with the company since 2007 and is responsible for making the production as effective as possible.

L2-B: We do not implement Lean as such, so if you ask anyone on the floor they will probably not know what it is. It is more that we have got an education or tips on what and how we can do, but we do not follow for example 5S. I keep them in mind, however, even if we cannot name the 5S.

L1-B: we did some major changes that are close to Lean. We sorted out the hall, redone the floor and painted the walls, and reorganised the machines to be more Lean. But it was done before we went to Lean School.

L2-B: The reason for us two going was that we have the positions we have.

L1-B: We have not done that tree or what it is you are supposed to do. But now two more people are going to Lean School so we will se what happens after that. We also had a study day where the employees got to learn about Lean from HC. We have cleaned and sorted out, but we have not talked about it as Lean with the employees. We have not yet accepted Lean as such, but rather said that now we are going to do things this way.

L1-B: In the beginning we had large batches, but when I started I reduced them gradually. But then there was some gruff about why there should be more frequent re-settings of machines.

L1-B: We only have an old action plan, but will make a new soon.

L1-B: When the other two comes back from Lean School we will sit down and discuss further on how to proceed. The two going now are part of the leader group, so we want everyone to think the same way. One is purchaser and one is technician and quality leader.

L1-B: Customer focus is the most important core value. Everything is about the customer and they should be put in focus.

Why?

L1-B: Our concern CEO sat at the board for HC, so he had a large influence on us going to Lean School and starting with Lean.

L1-B: We had a need for change. Before when we were Samhall the production was not so important, only a means of development for people. So the employees were our customers. Production was only a means for developing people.

L2-B: Now our production is more important than other things, and customer focus.

L2-B: There was a need before the implementation, but not a crisis.

L1-B: The conversation was started already before Lean School. The first thing we started with was order and structure. We have so little space so we have to clean up and keep it tidy.

How?

L2-B: We take ideas from what we learned and used it as we think it suits best. I think the course in general was good.

L1-B: Most of the employees want to have it tidy and clean, but I doubt if the commitment has increased. Many people views the changes we have done positively.

L2-B: I might have gone back to the material some times, but not studied it deeper.

L1-B: Looking back at the last two years it becomes evident that many changes have been made since the change of ownership. In a small company like this decisions are made quickly and things happen in a short time.

L1-B: It is easier now because I am closer to my boss. So I am more motivated now.

L1-B: It is such a small unit here, so everybody notice what we do. The concerned are of course asked for opinions because they have the knowledge about it.

L1-B: We are currently implementing a quality system which will improve quality. We had earlier implemented ISO 9000 for some of our machines but when those machines were removed so was the quality system.

L2-B: Of course there are resistance, it always is. However, it is nothing remarkable. There was some resistance when we changed the batch sizes.

L1-B: If employees are for example asked to fill out a note it is common that they question it by asking why they should do so and within a week they ignore the instruction by quitting doing so.

L2-B: But we have not seen any resistance outside normal behaviour of human beings. All of us are more or less creatures of habit.

L1-B: It is easier for some of us to change our habits, some people does not want to and believes that if things have been like this for a hundred years, why not let them continue like this.

L1-B: We do not have a time frame for the implementation. We will, as said earlier, bring it up for discussion again when the other two have taken the course as well. We have discussed the temple (Lean Production Temple) they talked about in the Lean School and if we should develop one for our company. It might be easier to do now when more of us have taken the course and the knowledge is fresh.

Objectives

L1-B: We do not know if the changes have affected customer satisfaction. There is no obvious difference in quality. But I think we are more careful in the production now than before.

L1-B: I do not think we had any expectations. I am so old you know so I do not expect anything anymore. This was good you know, because I have participated in so many courses before that has been meaningless.

L2-B: I have seen Lean before at my previous workplace, so for me it was more like getting tips and advice about how to do.

L2-B: I think it was great to learn these tools, but found it difficult to share with other employees.

L1-B: My goal is that there should be order and structure, that every thing has its place. Previously people have been looking for things that are not where they are supposed to be. Things have to be put back in place so you can find it. It is so much working time wasted on searching. We have flowing storage places now, it is not working so good. Now we are going to install a computer at the storage that can do that directly when something is moved. Otherwise people think they will do it later when they go into the office, but forget to do that.

L1-B: We have come some way, but we still have a lot to do.

L2-B: To get everyone with us is on of the things we have not succeeded with.

L1-B: Yes, we have not managed to do that. Some people are with us in it, but there is still much to do.

L1-B: I have got an insight how important it is that it is order and structure, and to have a functioning system

L2-B: Something I have noticed is that we have a more even production now. It is a lot that affects this, but overall it is more even.

L2-B: We have not come as far as working with the resetting time. You are not allowed according to Lean that we are special. But we are that to the extent that we cannot and should not stress everyone out there. We have contracts saying that we do not have to gain maximum from every employee contra their wages. I have a wage and an expectation to live up to a certain performance, but the employees from Samhall do not have that pressure.

L1-B: People from Samhall might have pain in the neck, and cannot work in such a tempo that they could if they were healthy.

L2-B: The goal of course is that everyone should become more effective, but we have to see it in the context.

L1-B: The setting time of machines is catastrophically because we only have one person that can do it, and he only works 50%. So when he is not here we have a problem.

L2-B: But we are planning to educate more people to do the machine settings.

L1-B: No particular system for incitements, but we for example bought cake for everyone when we had a turnover record last spring. We want to do things like that sometimes to encourage them.

Interview with NL-B

Introduction

I work in the production as fitter and have worked here for almost two years.

I believe that the changes have affected my work. We have done some changes. We have done pallet places on the floor, new working tables etc. and a little bit more order and structure. It is easier to find what you need now.

We have discussed a lot together how the changes will look like. The leaders have discussed it with us in the production too.

The idea is that it should become more effective, and the flow is to be improved. That think exists, but we have only just begun so there is still much to do.

Why?

There were needs for change and much to do when I started here.

We had a working group when we remade the local out here. We emptied the hall, painted the walls, and discussed how to place the machines in a better way than before.

How?

We have a meeting every Monday, but it is more about what we will do this week. Then we have every third Tuesday where we get information about how the company is doing and what changes that might be planned.

There has not been any direct information about it. But we talk much about it, what they have been doing and so on, so I know. It might depend on how interested you are if you know a lot or not.

We have changes all the time, and things to be done.

We have clean up every Friday where everyone in the production helps.

The leaders are always listening if one has ideas, then not everyone have ideas. We are not so many here, so ideas are discussed easily. It is not necessary to book a meeting, but you go directly to the person you need to talk to.

The commitment among employees I believe has remained constant before and after the changes. The leaders also have the same commitment. They have told us about things one usually does not think about. They tell about examples they have heard about at the course that are very illustrating.

I think the way of thinking has changed from before when the owners were Samhall. Maybe we put the customer in focus more now.

People who don't want change exist everywhere. I think some people don't want change. Maybe they in some way feel a sense of security in having things the way they are. In the beginning when it was talked about efficiency that people perceived it as they were supposed to work harder and faster. But that is not what happens if you do it the right way. The attitude has changed afterwards when they have seen the positive effects.

Objective

The part with keeping order I believe takes some time to work in.

We try to make sure that everything you take out is also brought back to its place. I don't think we have found any good solution yet on the problems with pallet places in the storage and also we have quite little space.

We have meetings on Monday, and when orders come in we try to plan things better, so I think the flow is improving. The improvements have happened gradually over the two years I have worked here.

The goal with the implementation has been to become better in production, and also the quality.

The biggest gain is that most of things with order and cleanliness have improved.

We do not have incitements, but sometimes there are encouragements. I am not sure that incitements would stimulate the commitment. It would rather create problems like bad atmosphere. If an incitement system would be introduced I think that those ideas that the employees are expected to work harder and more efficient would come back.

5.1.3 Company C

In this interview L is production manager, and NL is a production employee.

Background

This manufacturing company has a turnover of approximately 50 million SEK and 25 employees. The company is located in Småland County.

Interview with L-C

Introduction

I started in the production in October 1998, and became Production Manager about one and a half years ago. My work is to do the planning and structures, and to take care of outdeliveries and make sure that the right things are in the right product. I spend approximately 2 hours per day out in the production to follow up on what is happening.

Me and the CEO are together responsible for the implementation. The CEO has the main responsibility that Lean precedes. And I also have nearly as much responsibility to make this a continuous process.

We participated in Lean School last year, with the last meeting in May I think. It was I and the CEO that participated in Lean School. Person X also participated a little in the beginning, but mainly it was the CEO and me. We participated because I was responsible for the production, and the CEO wanted to be there partly to be able to influence the efficiency work, and also because he wanted to feel participative in the project. Another reason was to support me. We discuss things together, think about this and share ideas. He (CEO) too wants to feel a big responsibility in this. His philosophy is that it is as important that the leaders are in it, or maybe it is the most important thing about implementing Lean that the leadership is participative. If the leadership is not participating when the changes are done, it will become difficult because it is a continuous project. Lean should affect a whole company also on the office and all the way out to the final link. It is a lot of mentality in it (Lean).

Besides Lean School we have taken in help from an outside source which can be regarded as a complement. He used to be developer at this company, but now he has his own business. He therefore knows our products and what the needs are, and helps us to develop work aids, material wagons etc. Together we look at how large changes can be made out in the work area to facilitate all from storage to delivery. He is literally an idea man.

In the company we have values such as accuracy, to show a good face towards customers, a large customer responsibility, customer treatment, well-being for the employees and that it works all right in the groups and that they have harmony.

Why?

It started with me participating in some course with HC about leadership. Then it kind of went on through that. They (HC) came here and introduced themselves and their concept.

The reasons for efficiency work are several. First there was a large need towards the market, because the more order and structure you have, the better are the things you deliver. I thought about his before with the mess and beech around it, that we hit a little here and do a little like that. Now it is more like: it should be like this and that, and here is the final product. We also needed more meat on the bones i.e. to find out what it (Lean) means, get education concerning it and see how it works. We went on study visits, which is always interesting, to see how other companies do and how it have worked before and after for them. Then we also had a big need production-wise to get out of our chaos. We have worked up the production on a totally different way today then what we did before. We have made ourselves more effective and produce more products compared to before I would say. The production times have been shortened.

The CEO and one more leader (person X) took the decision to participate in Lean School. They also chose the people who where to go.

We started the changes during Lean School and by sorting out garbage. By garbage is meant things that were no longer used at the work stations, but lay there because it had always been there. After that we introduced weekly and daily clean up. We started with those things, and then it has built on. We felt that 5S was the easiest thing to start with because it is really common sense. Therefore we chose to start with it quite early when we went to Lean School. It is important to get the people with you in the 5S and if you manage to do that it does a lot to working conditions. You can see that is pretty simple and makes a difference, and it becomes so much better working environments.

I am going through station by station to see what we can change there. For example what tools we should have there to get a better order. It is more like you talk about things with the people who work at the station, so we do not have a group or anything. It is more like me trying to structure things up a little. Then it of course goes up and down. Sometimes it is more, sometimes less. It has a lot to do with how much pressure we are under in the production. It is so much that affects the ongoing work with Lean, and getting to an end point.

How?

The CEO has spoken about this for the whole company. We usually have a monthly meeting for all employees, and at such occasions the CEO brought up things like Lean. We have bought in a new business system that also is a part of this. We have not had any education, but rather I have broadly told them that we are going to do this, or it is going to be like that. It has mostly been information because it feels like it has been the easiest way. Since we are such a small company everybody gets involved in one way or another anyway.

We have mainly worked with the production. We can say that we have worked mostly with 5S, which is good keeping order and cleanliness, and also a way to know where you have your things. It makes a lot of difference.

We have not made any action plan, and instead been spontaneous. Maybe the best thing is to have a plan that you try to follow in order to get to the end of things, and here the responsibility lies on me. I simply have not come to the bulkhead with it. Things have rolled on anyway, but I need to check that over and make an action plan. It can otherwise become a bit like you go one step upward and then forward, but then stand there for a while, and then fall back again. Then you feel like you have to start all over again. If you have an action plan on the wall, everyone can see that now we are here, but we have not come as far as planned so there is more work to do, and it becomes possible to grasp.

It is more like you carry the knowledge with you all the time. How you use the knowledge I think depends on the size of the company, how much you have to do, how large the department going under change is etc. We can go out and look later; it is not such a large area we work with. I discuss with the employees and ask hem what they think about an idea, if it makes sense. Either it gets an: ok we let's go and test it! Or it get an: eeh…Then you have to listen to what they have to say or add. So you discuss back and forth, or they come with ideas themselves which is always welcome. As we often say. "Just up with your ideas and let's see what we can do about them".

It is mostly own experiences and notes that I have brought with me from the course. I believe 5S was the easiest part to understand and use. I think it would be good with a course like this that you place the eight course meetings at the different companies participating in

Lean School. Then you get to see the reality more. I think it was missing a little. Sometimes it felt like it become too much theory that I did not have time to take in. I feel that we spoke so much about this, but you did not really have a picture in front of you because one had not experienced it or done study visits. I was new at the subject so it is difficult to take in everything and convert it into the own context. Then there were people that had gone the course before but felt they had got stuck a little, and then they took the course once more to be able to kick start again.

Because I work with production my aha-experience are how much more efficient it has become from having order and cleanliness, and having a good structure at the work stations. I am surprised about how much better it is now than before. These aha-experiences have encouraged me, and also the personnel I believe. They have got better working aids, and I believe it is meaningful that they now feel that they are doing something valuable for the company.

Now everyone knows that on Fridays before we go home we have common clean up everywhere. The storage is to be swept, and the whole factory and things like that. Furthermore we are now putting up tool boards at every station. This kind of a rolling process is still going on.

I have been of the philosophy that if one sees a possibility I think one should try it. If it does not work we will just have to look at it again and make adjustments or changes.

I think that the commitment among employees has increased. When we started this up they could see for themselves that it helped and made things better, this made the enthusiasm grow. You come up with a new idea and go and talk with them (employees) about it and then it is more like: yes, we can try that. Otherwise it is quite easy when you make a change at a workplace that has looked the same for five years that it gets a bit of resistance. You could feel that a little in the beginning but now I think it is another attitude. The leaders have been committed all along, and the CEO has urged this on all the way.

The most difficult part was to get rid of tools that where not needed anymore. You are so used to having that thing which has been there for ten years, but maybe you have not used for over five years. But you want it to be there anyway. We have done 2-3 sort outs or separations. One person might save this much, then another person comes to the station and realise that there are more things not needed. That is what is so good with rotation among the stations, that it is easier to sort out.

I do not think I feel so much resistance to changes today. What is a little hard is maybe when we go and look into the work of another person and questions why he/she does things in a certain way and not in another. It can really cause some trouble if one goes in and pokes on peoples' work like that. Now we are still only on the surface, but we will get down on the deep too and then it is always more sensitive. It is easy to blame things on having too much to do; I say that very often too. I think that you have too structure up your own day too, and plan when to do what. What do I do? What chores do I have? What am I supposed to do? This is in order to get the same effectiveness in me as the work leader, as I expect from the production. Sometimes you feel that you never come to an end. Why do I never come to an end? Because I do not give it the time it needs. It is something you, as a manager, has to work at with yourself, and this is included as much in Lean as production is.

I think we do have customer focus, and that we always had. But maybe it has increased. We want to deliver products that work, and look nice and fresh. For the customer to be satisfied with what he has bought from us is important.

We have worked in intervals really, but it depends on how large the current project is. Lean is so individual when it comes to how fast one can proceed, what you do and the extension of it. Sometimes you have less, sometimes more energy to work with it. I think it is very individual from company to company how you go on with it.

Objective

I think I expected more practical information in Lean School, i.e. more information out on the companies. I was always excited when I came back from the course, and had a lot of ideas. I think that so far it has turned out approximately as I had expected. That it goes slowly but steadily forward. You have to be able to see and appreciate the mile poles. The CEO expected that the implementation would have gone faster than it has, and also that I would have managed to do more.

The goal was very much to decrease production times. I personally think that we had quite good quality before too, so not so much to increase quality. The changes were to save body and soul and those pieces, but also make it easier to work in the production and improve working environment. Now when we have got the new business system another goal is to decrease the storage volume.

We haven't been able to do any measurements of the efficiency, but it is clear that we are more effective now. Especially in the head assembly we see a large difference.

We do not have any incitement system connected to the efficiency work.

Interview with NL-C

Introduction

I work in the production, and have worked at most of the work stations. I have been employed here for about three years.

It is the production manager who has been in charge of the efficiency work. The efficiency changes have meant changes to new jigs, material wagons etc. It has become a bit better with the work so far, but there are still many things to do. It takes a long time because there are many things we cannot do, but what we can do we have done.

I think they have had some consultant before to work with efficiency, but I think that was before my time.

Why?

We were informed about the implementation. I think we needed the order and structure, and it is working very well now. We started the work with efficiency approximately when our production manager started at Lean School. I don't remember exactly when that was.

How?

I do not know if I have had any aha-moments at my own station. They will do more changes at my station soon though. But at the other stations where I have circulated I got an aha-moment when I saw the changes and how convenient it was. If I get an idea about the changes, of course I would tell him (a consultant working with improvements). And when he works with our jigs and ask me about the station of course I try to contribute. They (the leaders) are open to listen to my ideas.

I don't feel that I am more committed now than before. I think it is the same. But sometimes it feels like the leaders are more committed now than before.

We have a good customer focus. It has always been there, so I do not believe it has changed much.

We have not had any troubles with the efficiency work. There are of course people who do not like changes, but I like it. I think the opinions have changed when they see good results.

I have not thought so much about what particular change that was best. But we can see the production flow better now, that it goes on a specific route. I think that I can manage more in a day now than before. It has not become more stressful because of the efficiency work, or pressure to produce more.

Objectives

We have not had any particular objectives.

We do not have any system for incitements or bonuses.

5.2 Summary

This summary includes the parts of the interviews that are of interest when using the combined model for analysis (see figure 7) and to the fulfilment of the purpose of this thesis.

5.2.1 Implementation

Committed Leadership

NL-A says that the CEO has become more enthusiastic. And after every course meeting the production manager and CEO showed enthusiasm over the new ideas they had got and shared them to other employees (NL-A).

L1-B expresses that the reason for two more members of the leader group now participating in Lean School is to ensure a united view on the efficiency work. The same person says that he feels more committed and motivated now when being closer to his boss. NL-B feel there is no difference in leader commitment.

L-C expresses that the leader of the company wanted to participate in Lean School to be able to influence the efficiency work. The CEO has the philosophy that if the leader is not participative it will halt the process or project (L-C). L-C also says that the leadership has been committed to the project all the way. NL-C has experienced increased commitment from leadership.

Enabling Activities

Strategic planning/Planning the implementation

Company A does not have a strategic plan, and not either any written down business plan. The CEO has been asked to write it down but still seem to keep the ideas in his mind instead (L-A). The work with efficiency has however been somewhat structured, doing one thing at a time and choosing to work with areas or things that are most acute (L-A).

Company B only have an old action plan, but will make a new one soon (L1-B). However, the thought is to develop a strategy when the other two in the leader group has finished Lean School (L1-B). NL-B talks about having a lot of discussions with the leaders on how the changes will look like.

L-C says that they have not formulated any strategic plan, but rather worked spontaneously. L-C believes that it might be better to have a plan in order for everyone to see what is supposed to be done until when cause then you can also see how far you have come.

Support & leadership

The CEO participated for one reason; to be able to support L-C in the work with the implementation (L-C).

Training & education

Company A has not had any education for the employees, but rather has trusted in the transferral of ideas and thoughts through information (L-A).

Before the Lean School, HC visited company B for a day informing employees about what Lean means (L1-B).Company B is planning to educate more people to learn setting the machines (L2-B).

L-C says that company C has not provided any education in efficiency methods for their employees, but relied on communication and sharing of ideas instead.

Monitoring & evaluation

The change work was followed up by the CEO and production manager, and discussed with the responsible employees for the stations (L-A). Ideas are discussed on how to proceed or make new changes.

The results or changes have not been possible to measure more than what can be seen with the eyes, but the efficiency has definitely improved according to L-C.

Buying-in & empowerment

In company A each individual were given responsibility in order to feel participative, and it is emphasized by L-A. During the change process a trial was done where two people were given responsibility and legitimacy to realise the plans for their station. This worked well, so two responsible were selected for each of the stations (L-A).

Company C does not show signs of empowering the employees, but do a lot of buying-in by developing and getting new equipment in the production with the goal to make work environment better for employees as well as simplifying every day work (L-C).

Communication & information

Before the implementation at company A the employees were told that two people were going to go to Lean School, and the employees were asked to think about possible changes (NL-A, L-A). However, L-A say that the employees were not told what was going to change. Both NL-A and L-A say that after every course meeting the participants shared their experiences over coffee or lunch break with the other employees and thereby transmitted their enthusiasm. L-A says that more information about the changes was given at the monthly meetings. He stresses the importance of presenting ideas in a way that the employees understand the purpose of it.

L-A believe that information is important to make people feel participative. They do not need to know everything, but relevant things about what and how the company is doing (L-A). At the work stations one has clarified processes by putting up standardized instructions at e.g. machines, and other information about who to turn to for different matters is also put up (L-A).

NL-B mentions Monday meetings, but they are more about the weeks work. Every 3rd Tuesday a meeting with all employees is held were information is shared about how the company is doing and planned changes. He also finds the examples, which the translators have brought back with them from Lean School and shared with employees, are both interesting and illustrating, and acknowledges that these are things one usually does not think about. There has not been direct information about implementation but a lot of informal talk about it, and the ones who are interested listens.

At company C the plans for efficiency changes was introduced to the employees at on of the monthly meetings. L-C has also broadly informed the employees about what is going to happen. L-C believes that communication has been the easiest way to make people come along, and not education.

Everybody's Commitment

NL-A thinks that everyone feels more enthusiastic now due to the team work and everyone feeling participative in the changes. L-A agrees that the commitment among employees have increased. Today people question how they could live with how it was before. A reduction of stress levels, reduction of quality failures and frustration, less overtime and lower working tempo have improved working conditions and environment, and contributed to commitment.

L1-B and L2-B both say that they have failed in getting people with them. L1-B however feels that some people are with them, but still much is left to do. NL-B believes there has been no change of employee commitment. However he shows a lot of insight on change processes, and proves that he thinks about it. L1-B says that most employees wanted to have it tidy and clean, but doubts if the commitment has increased due to the changes.

L-C believes that the employees have become more enthusiastic and committed by seeing the positive results from the first changes. L-C also express that it is easy to get people with you in the changes. By starting with simple tools such as 5S, people can see that with simple measures large differences can be achieved. NL-C expresses that she saw needs for structure and order, and was positive to the efficiency changes. NL-C shows an understanding that things cannot happen overnight but has to be given time. Furthermore, NL-C, in contradiction to what L-C says, feels that her commitment has remained the same.

All the NL and L express an understanding that much has been done, but still a lot of things remain to do which shows their insight on the subject and commitment.

Customer Focus

NL-A and L-A does not think that the customer focus has changed but rather stayed the same.

NL-B believes that the way of thinking has changed when the company changed owners. The customer is put more in focus now. This is supported by L1-B who says that customer focus is the most important core value in the company today. L1-B on the other hand has not seen that customer satisfaction have increased, but that people are more careful in the production than before. L2-B says that company B is focused on both production and customers today compared to before when mostly employees was emphasized.

L-C believe that the customer focus has always been there, but might have increased somewhat.

5.2.2 Problems and Obstacles

Human resistance

NL-A mentions that there has been resistance, coming especially from employees of the older generation who did not want changes. It does not necessarily mean they were negative to the changes, but simply a bit slower in adaptation. There can be hesitance because people feel the change is heavy or difficult, but when you actually start it goes quickly and you have a lot of fun doing it (NL-A). Just to say the work effectivising might frighten some people, because they relate that to increasing work loads. The leader has to point out that the point is to be able to do more things in less time with less effort. Working over a longer time period, letting people be convinced by the results is good (L-A).

When changes are done there is always resistance, but for company B it has not been remarkable (L2-B). He continues to say that we are all creatures of habit, and find changes difficult. Changing is easier for some of us, but others wonder why things should change when they have worked all right for many years (L1-B). NL-B believes that some people do not want change because they feel secure in having things the way they have always been. He thinks that there might be a fear of efficiency work adding extra load on employees and that sometimes employees ignores instructions from managers because of this fear and resistance. The attitude has changed when people have seen the positive effects.

Both NL-C and L-C felt a little resistance in the beginning in a lack of will to change, but that the attitude has changed today to be positive. However, L-C also say that when you go deeper and comment on how people perform their tasks it becomes more sensitive and problems might occur.

Degree of Collective meaning creation

NL-A says that in company A no one wants to stand above and rule the others, but rather things are done together as a team. Before the start everyone sat down and discussed ideas on what to be done, and responsibility was delegated to all (NL-A). L-A agrees that a project like this cannot just be ruled from top-down, but it needs to involve everyone. The decisions concerning the project were taken together by all.

NL-B mentions how they have discussed a lot together about how to make changes, and he feels that the production workers have been involved in decisions. He also says that he recognised things that needed to be changed when he started at the company. And even tough things have been done, there is still much to do. There is collective clean up of the factory every Friday.

In company C the responsibility for changes is not delegated, but L-C talks about involving the employees at each production station to find solutions. If the employees have comments one has to listen, and discuss things with them. The employees are also encouraged to share ideas they might have concerning changes (L-C and NL-C). NL-C also says that if she gets any ideas she would not hesitate to share this with the production manager.

Organisational Resistance

L-C and NL-A talk about people blaming the lack of progress with changes on having too little time resources. L-C believes you can never blame things on that, but rather on how you rule and use your own time. NL-A also expresses that you never have that lack of time that you cannot put a tool back in its place. This claimed lack of time, can depend on organisational structures and division of time, which can cause resistance.

Legitimacy

The decision to participate in Lean School was taken by the CEO and he also chose who would go (L-A).

L2-B says that the reason for them going to Lean School was the positions they are in (local manager and production manager) and also mentions that he is responsible of making the production as efficient as possible. L1-B is responsible of customer contacts. He says that after two more members of the leadership group has gone through Lean School too, they will discuss together on how to proceed with the efficiency work. The CEO was the initiator of them going to Lean School (L1-B).

In company C NL-C points out L-C as the leader for the efficiency work, and L-C also describes herself as being responsible for the change work and regarded as such also by the CEO.

5.2.3 Translation

Knowledge input

Company A knew about Lean from before from some courses in motivation and also from university, so Lean School was a way to get tips and tools about how to do, and what order to do things. They wanted to go Lean School first and see if it was something for them and if it would fit their context. L-A points out that one cannot just copy and implement something in the organisation but need to adapt it to your situation (L-A). L-A feels that the material at Lean School was so much that it was impossible to keep in mind. At times he has had to go back to the material. L-A feels that it was too little practical learning with study visits in Lean School.

L1-B did not expect anything from Lean School due to previous courses that he had experienced as meaningless at other occasions. However he believes that this time it was interesting. L2-B has seen Lean before, so for him the course was more to get tips and advice about how to do it.

According to NL-C they have hired a consultant before to help them identify issues that can be improved in the production. L-C says that company C on a continuous basis receives help from a consultant in finding new solutions to improve efficiency and working conditions. This can all be regarded as one sort of knowledge input. However we will here focus on the knowledge provided by HC in Lean School. L-C found that the knowledge was to a large extent theoretical and wished that the course had included more real life visit to exemplify the theory.

Translator's Role

Reflective learning

L-A expresses that some parts like 5S seemed easier to understand and tag along on, and also to implement. He also understands that they have only worked on the surface yet, and that they will have to go more in-depth with the changes.

L1-B says that he has got insights during the process about how important structure and order is, and to have a functioning system. L2-B might have gone back and looked at the material during the implementation, but not studied it deeper.

L-C mentions coming back from the course meetings enthusiastic with a lot of ideas on what changes they could make in their own organisation. L-C also shows a lot of reflections on the contents and meaning of Lean, and its applicability in different situations. L-C says that the leader should think over how its own work is structured and performed, and question if it is not possible to make usage of time for example more efficient in your own life.

Timing

The implementation at company C was done in intervals and done one thing at a time. One have to realise that sometimes you have more, and sometimes less energy to work with the changes and that this is individual for every company (L-C).

Competence

The translators in Company A are production manger (L-A) and production worker.

The translators in Company B are local manager (L1-B) and production manager (L2-B).

The translators in company C are production manager (L-C) and CEO.

Translation Process

Instrumental learning and challenge

When looking at what changes can be done in the organisation, L-A though it was important to listen to what people say will work at the stations. After all they have the knowledge about their context, and one should listen to the ideas and tips they give. One cannot just come and say what they should do, but a solution should be worked out in together (L-A).

L2-B tells us that according to Lean no one can call themselves special, but in reality, company B is special due to the nature of their employees. One cannot put the same pressure or demand on Samhall staff as for example with a completely healthy employee, since the hired staff from Samhall has a disability or injury in some way. He also says that the different ideas from Lean School have been used as they have thought it to suit the company best. Lean has not been implemented as such, but it is rather kept in mind (L2-B).

L-C shows a strong will to learn both instrumentally, but also to meet the challenge of comparing with the own context and to actualise the ideas in company C's production.

Organisational Platform

In company A it was L-A and the CEO who pulled the project forward. L-A say however that he has not been formally been pointed out as the responsible (L-A). L-A say that one have heard about theories like Lean before, but by giving the efficiency work a name (Lean) it got an identity for everyone and was easier to grasp.

NL-A say that such a large change as efficiency work could never come as an idea from below. It needs the authority from above to gain legitimacy and be accepted within the organisation. L-A also say that it was good that they had two responsible for the changes, because if one has much to do the other one can take over and push things forward.

In company B the two people chosen to go Lean School were chosen because of their positions. And now the other two of the leader group are also going to Lean School. In company C a platform consisted of the CEO and production manager. Together the CEO and L-C made a team to develop the efficiency work.

5.2.4 Being a Small Company

The smallness does have the effect that everyone automatically is given responsibility and gets involved in the process (NL-A). L-A say that there are positive aspects with being a small company that they want to keep like the small-company-spirit and the flat organisation. In a small company groups, due to hierarchical levels or many people, are not formed as easily. When L-A talks about the lack of written down vision and goals, he adds that due to the smallness everyone pretty much knows in where direction to go anyway. L-A says that the resources are limited because they are small, and therefore they cannot put someone on working half-time only with this project. He hopes the down trend in economy might cool activities down and open up more time to spend on efficiency work. Since they are a small company with limited space, the sorting out was very good for them (L-A).

L1-B thinks that the smallness of the unit makes people know without formal information, which is agreed by NL-B. L1-B says that in a small organisation like theirs decisions are made quickly and things happen in a short time.

L-C thinks that the smallness of the company makes everybody get involved in projects despite the lack of education or the like. How you use the knowledge about efficiency changes is different depending on the size of a company (L-C). The size decides how things are done, how large changes are and what is done (L-C).

5.2.5 Incitements

Company A has two different systems according to L-A and NL-A. One is connected to the financial performance, and the other one to usage of resources and amount of waste production. The second system gives rewards like going go-carting or bowling together.

Company B does not have a system for incitement, but rather give occasional encouragements such as serving cake when the performance is outstanding (L1-B, L2-B & NL-B). NL-B thinks that incitement systems can create problems such as bad atmosphere, and also make the employees believe that they are expected to work harder. Company C does not have any system for incitement.

6 Implementation and Translation

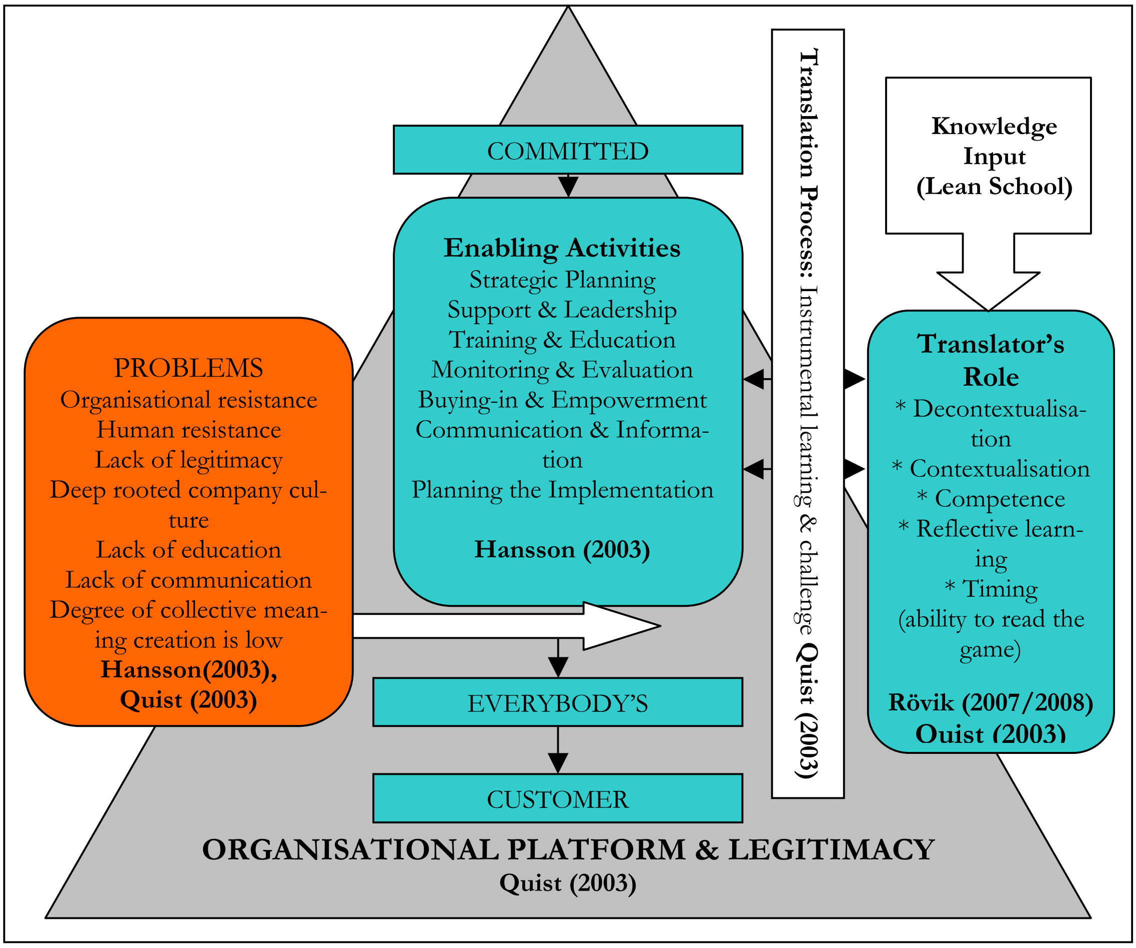

Figure 7 Combined model for translation & implementation of efficiency methods

To make it easier for the reader to follow, we have put the combined model for translation and implementation in this section where results from the multiple-case study are analyzed.

As mentioned in chapter 5 the person who has participated in the Lean School will be called L, and the person not participating will be called NL. An extra letter will be added (e.g. L-A, NL-A) to show what company (A, B, or C) the interviewee belong to. In company B two Lean School participants were present at the interview and they will be separated by being called L1-B and L2-B.

6.1 Implementation

6.1.1 Committed Leadership

When implementing an efficiency method Hansson (2003) believes that a committed leadership is the most important factor for success. This view is supported by L-C, who says that both she and the CEO believe that the leader must be participative in the change process. In Company C the leadership has been committed to the project all the way (L-C). Company C has managed to obtain a lot of changes, which can be related to the leaders being committed.

In Company A the leaders have become more enthusiastic after attending Lean School (NL-A), which has been transmitted to the other employees. L-C also says that she came back from the course meetings with ideas and energy. This enthusiasm can lead to an increased level of commitment, which drives changes forward.

One new idea presented by L1-B is that not only one leader or one translator should be responsible, but that the whole leader group should cooperate and together work out a plan for an implementation. L1-B also expresses feeling more committed and motivated now because of being able to work closer to his own boss. NL-B, however, feel there is no difference in leader commitment after the two previous members of the management team attended the Lean School.

In Meeting 3 of the Lean School, the whole day evolves around how to get committed employees. What the lecturer says is that a leader has to take responsibility for, and make sure that clear goals are set up and that the process is closely followed. The leader should have a perception of himself as a servant to the employees, making sure they have the tools or possibility to perform the tasks delegated to them. This includes giving clear instructions, enabling the performance, and also to follow up on how things went. These ideas lie close to Hansson's (2003) ideas on enabling activities. Committed leaders do the enabling activities and thus maintain committed employees. If we look at the companies participating in our study, it was perceived that the leaders took their role as the driver of change seriously.

6.1.2 Enabling Activities

The enabling activities proposed by Hansson (2003), see figure 3, are vital in order for committed leaders to enable and thereby create committed employee and to further have a customer orientation within the organisation. In the following text we will evaluate what enabling activities the companies in the case studies have done.

Strategic Planning & Planning the Implementation

Company A and C do not have a strategic plan for the implementation, but is structured in the sense that they have worked stepwise and evaluated between each step what is most acute and should be done next (L-A, L-C). The tactic seems to have worked well judging from the results of the implementation, and is maybe a better way to work for small organisations with little resources to put on planning (see further discussion in section 6.5) However L-C believes that it might have been easier if there had been a plan, because with a plan it is easier to follow up for everyone and see what is supposed to be done until when and also have far you have come.

Company B have an old plan, but is soon going to make a new when all leaders have been educated in Lean School (L1-B). NL-B says that there have been a lot of discussions between leaders and production workers about how the changes will look like.

We believe that having a strategy and a plan for the implementation is important and could have helped all three companies in the process. Having a plan and a strategy would have made it easier to make follow-ups and to see how far you have gone. All companies mentioned how resistance had become weaker once employees started to see and feel the results. We think that making everyone aware of positive outcomes would make people less resistant to changes and increase both motivation and employee commitment.

Perhaps the lack of strategies and plans in the three companies are due to lack of resources, a common problem in small companies, as mentioned by both Hansson (2003) Gunasekaran et al. (1999).

Support & Leadership

One reason for the CEO in company C to participate in Lean School was to be able to support L-C. We believe this has helped L-C in the work with the implementation, and also in a sense strengthened her legitimacy.

Training & education

Company A and C has not provided any education for their employees, but rather depended on knowledge transferral through information and communication (L-A, L-C). Company B on the other hand had one education day for the employees about Lean (L1-B). It is difficult to see how this difference might have affected the results, since all three have managed to achieve good results. One thing we felt during the visits and interview was that the communication and common meaning creation seemed to be higher at Company A and C. This indicates that personal communication and sharing of knowledge is a good way to increase togetherness in a company.

Monitoring & Evaluation

The implementation has been monitored in different ways by the companies. Company A showed a structured way of following up on results with the employees responsible for change (L-A, NL-A).

L-C says that they have not been possible to measure the results from the changes but with the eyes. All of the respondents tell us about what they think have been the biggest result of the changes, which vary somewhat. Many experience that there is a better flow in production after the changes. Other results mentioned by the respondents are for example lowered stress levels, less frustration, less overtime, better working conditions and environment. In the part further down in the text we will discuss further how the results can have affected employee commitment.

The steps taken during the implementation have not been monitored or evaluated in a structured way in any of the companies. The evaluation has instead been based on personal judgement.

Buying-in & Empowerment

In company A empowering the employees have been regarded as important in order to involve everyone in the process (L-A). This was tried out first, and worked out well, so they decided to delegate responsibility for changes in production to all production workers. Since we could se a strong sense of team work in company A, we believe that this way of working is a good way to increase employee commitment.

Company C on the other hand did not delegate responsibility to the same extent, but they put a lot of energy in developing new and better work aids that would make production work easier and more efficient (L-C). When talking to NL-C we can see that working conditions have got much better judging from her aha experiences when working at the stations that have undergone changes. Maybe this is another way of increasing employee commitment, because if the employees can see an actual result of the change that is beneficial for them they might become positive and get new ideas for further changes. It is also interesting to see that all three companies have tried to empower the employees by including them in the change process of their individual work station, and also in some cases given them responsibility to execute the changes.

Communication & Information

At all companies the employees were informed about the plans to attend Lean School, and the employees encouraged to think about what they would like to change (NL-A, L-A, L1-B, L-C). Further information about the implementation was been given on weekly or monthly meetings (L-A, NL-B, L-C) were ideas are discussed with the employees. Company A also showed a high degree of informal communication for example over coffee breaks or lunch (L-A, NL-A). L-A stresses the importance of communication, where one have to present ideas in a way that the purpose of the idea is understood by the employees. According to L-A the information makes employees feel more participative, since it gives them a better insight in and understanding of what is going on.

L1-B and L2-B found it difficult to share the information they got at Lean School. However, NL-B tells us that he appreciated the stories L1 and L2 told everyone at coffee breaks about what they learned from Lean School. Also NL-A appreciated the stories that L-A told the days after a course meeting. This indicates that informal sharing of experiences can contribute to create an interest for changes and also the employee commitment.

6.1.3 Everybody's Commitment

So to summarize to enabling activities above, did the companies manage to make everybody committed?

Companies A and C say that they experienced that the employee commitment has increased after the implementation (L-A, NL-A, L-C). L-A say that the employees have been affected to become more committed when they saw the positive results from the changes. L-C thinks that it is easier to get people on the train now when they have seen what can be achieved by small changes. It should however be pointed out that NL-C does not personally feel more committed. Something we can see from the answers by all NL is that they show an understanding of what has been done, why and that there is still much left to do. We believe that this shows an interest, or at least an awareness, that can be compared to commitment. The opposite would have been ignorance or unawareness.

At company B the situation is different, and L1-B and L2-B goes as far as saying that they have failed in making the employees committed. L1-B says that some people are with them in the changes, but there is still much to do. A possible explanation for the difficulties to get everyone committed is that company B has many hired personnel from Samhall (approximately 60% of the workforce). If there is a circulation of work force at a company it is logical that it is difficult to create a togetherness and steady commitment.

6.1.4 Customer Focus

Companies A believe that their customer focus has remained the same through the implementation (L-A, NL-A). For company C it has increased slightly (L-C). For company B the costumer focus has, together with production, become the new focus points after the change of owners a couple of years ago and is thus not a direct affect of the implementation. The results are vague when it comes to evaluating if the core value everybody's commitment has resulted in customer focus.

The difficulty to see a connection between everybody's commitment and customer focus out on the companies might depend on the fact that the companies have worked with the implementation for only one year. The companies have only just started, and can be regarded as still working in phase 1 with the enabling activities.

6.2 Problems or Obstacles for Implementation

Both Hansson (2003) and Quist (2003) bring up problems or obstacles that might occur during the process of implementation. The companies have discussed some of these problems during the Lean School in Meeting 1. In this part we will look closer at what problems the companies may have encountered during the implementation, what they have done about it, and how the situation has evolved.

6.2.1 Human Resistance

When the interviewees are asked if there had been any problems they all answer that there are always people who do not want change (L-A, NL-A, L1-B, L2-B, NL-B, L-C, NL-C). The explanation for this differs between the companies. NL-A says that resistance in their case mostly came from the older generation, but adds that rather than resistance the reason might be that they are slower on adaptation. Other reasons can be that the word effective frightens people, or that they associate change with increased workloads (NL-A, L-A).

But when the hesitant people see good results from the change, they become more positive to further change. NL-B thinks that some people just want to keep things they have always been because they find a feeling of safety in continuity. Even if things can get better, they want to keep it the way it is anyway. Company D agrees with the previous companies, and has also had some trouble with resistance to change. Company C does not express that they have had any problems with hesitance, but on the other hand that change has increased commitment among employees. The changes have had positive results, which are appreciated by the employees. This has made them more interested in further changes.

Is this resistance mentioned by three of the interviewed companies a result of failure in managing any of the enabling activities? One can imagine that if the training and education, or the communication & information part is not fulfilled, the employees do not know what is happening or expected of them which might cause hesitance. Another reason can be that the support & leadership does not function well. By leadership is meant that the leader has a stable position, and from that position can support the employees and gradually earn their trust. If we go back to what enabling activities the companies have performed, maybe we can draw some conclusion here.

We can see that companies giving educational opportunities as well as those trying to keep up the communication have had problems with human resistance. They have done some of the enabling activities that Hansson (2003) believes are needed to create committed employees but still meets hesitance. Can resistance be a natural part of implementation and not a hindrance? Maybe one can see it as a phase that always comes and has to be passed through, i.e. cannot be avoided. But even if it cannot be avoided but passed through, can it be that the activities proposed by Hansson (2003) are softening the hesitance, and without doing them it is not possible to overcome hesitance?

6.2.2 Degree of Collective Meaning Creation

When discussing the human resistance, we brought up the communication and education provided in each company. Company A has expressively strived to create a will for collective meaning creation, i.e. everybody taking part of the change process and feeling involved. The other two companies have also tried to involve their employees in the changes that concern the employees own working environment and thereby increase collective meaning creation. Company A and C says that their employees have the knowledge that is needed to understand what changes can be done in their own working area, and therefore it is important to incorporate them in the planning stage. Some of the interviewees also express how the resistance fades once people start seeing how much difference the changes, although sometimes very small changes, makes. This can also be seen as a way of creating collective meaning.

6.2.3 Organisational Resistance

By organisational resistance is here meant that the organisation of a company is set up in a way that hinders or put obstacles in the way of an implementation. L-C and NL-A say that people tend to blame not having enough time when they are failing to pull things through. L-C believes that you can never blame things on lack of time, but having that feeling is evidence of a failure to rule over and plan your own time.

We believe that time can in many cases be limiting, but agree with L-C that one can in some cases do something about it by starting to use the time available in a better and more efficient way. However, it is also possible that the time given for a project is simply not enough. Therefore an organisation that plans to implement changes has to consider what amount of time that is realistic to manage the implementation. Further, they need to be open for reconsidering the “time budget” given for the implementation if it appears that too little time has been given. If adjustments are not made there will be lack of time, and this will create an organisational hindrance or resistance for further implementation.

6.2.4 Legitimacy

As both Hansson (2003) and Quist (2003) say it is important that the leadership or the person responsible for the changes (the translator) has enough legitimacy. The decision to participate in Lean School was in all companies taken by the CEO (L-A, L-C, L1-B). The participants who can be seen as the translator in the implementation process are all production managers, and thus have a clear connection to the production processes.

It is possible that the position of the translator, i.e. as head of production, give them authority to perform changes in the production area. Employees are used to take orders from their managers, so if the manager introduces changes they are not questioned or ignored. This is, however, contradicted by L1-B who thinks that there is a tendency among employees to ignore instructions from a manager if they are resisting a change connected to the instruction.

6.3 Translation

6.3.1 Knowledge Input

The knowledge input for the translator in this case is the Lean School. Since the education is a one year programme with eight sessions, and our empirical material only reaches over the first three sessions it somewhat limits this part of the analysis.

In the first meeting as well as in the second, the companies are told about the differences in context for different companies, and the importance of keeping that in mind when planning for efficiency changes. They are made aware of the existence of different contexts, both where the efficiency ideas come from, but also how they as participants are different. An idea that works well in one company might not work in another due to the different contexts. The facilitator states that there is no clear route or 'right' way to go. The only thing that is the same for everyone is that the work with change is a continuous process. Rövik (2007/2008) talks about the importance of the knowledge about the differences in the contexts, and here the companies are taught that exact thing.

The practical production game might have given the participants an eye opening experience, when they realise how much can be done by small means, how efficiency work is a lot about strategy and the importance of getting everyone involved. Rövik (2007/2008) calls this decontextualisation (packaging) which is picking something out from one context and put it into another. Decontextualisation, we believe, is mostly relying on HC since they are the ones giving the method representation, which Rövik (2007/2008) calls the separation part, and so is the packaging, which means to give the method a common form to make it easier to transmit to other organisations. Both L-A and L-C expressed that more practical lessons would have made it easier for them to learn and this is also supported by Rövik (2007/2008) when he states that it is sometimes a good idea to look at other organisations, more like the own, when wanting to really understand how to use a method.

In this first meeting the knowledge about possible or usual problems are given, but it is not clear if any of the companies brought the knowledge home or worked out a strategy to avoid them. However, it is clear that none of them put a strategy down into writing. This is according to Rövik (2007/2008) a failure in contextualisation (unpacking) of the method they have learned, which includes materialising the method into activities, routines and structure. This is in our opinion something that is more influenced by the company's own abilities and will. However, it can be discussed if HC could offer consultant help in combination with Lean School for better results.

In the third session the companies are also made aware of the importance of a dedicated and committed leadership which Hansson (2003) agrees with. It is taught that the leader is ultimately responsible for how the changes proceed, and also that it is up to the leader to 'serve' the employees with tools so that they can go through with the changes.

It is also difficult to deduce from the interviews how much of the message actually has reached its audience. L-A and L2-B express that they had some previous knowledge about Lean, and therefore their expectations were more to get advice and tips on tools and how to manage an implementation of efficiency methods. L-C and L-A both thought that the education was a bit too theoretical and felt that it was difficult to take in everything. They appreciated the real life visits to other companies where they could see practical examples of implementation, and wished that the course had included more of that.

The translators seem to be practitioners rather than theoretical. They appreciate and respect the theories, but the real life examples are even more appreciated. Why is it like this? Can it be that many of the people working with production are more into action than talking?

Besides the knowledge input from Lean School, company C has hired a consultant to help making the production more efficient. This seems to have worked as a complement to Lean School, where focus is put on processes rather than details. The consultant has on the contrary helped with details such as the development of new work aids. The combination of these two sources we believe helped company C to reach the point in the implementation where they are today, along with the committed and enthusiastic leadership of the implementation.

6.3.2 Translator's Role

In all companies there have been two people who have participated in Lean School. They can both be regarded as translators, but we believe that one of them has been more responsible for the practical changes. These translators are all production managers.

Reflective learning

Quist (2003) points out that the ability to reflect on what you learn is important. In these cases the companies have reflected in different ways. Company A has gone back to the material to study more in depth, while Company C has not looked at it further. However, it is not only the studying of material from the course that should be counted as reflective, but to learn from one's actions, and constantly be prepared to revise the tactic if something goes wrong.

To clean and organize workstations and offices (5S) is one of the first tools that are taught in Lean School and an entire meeting out of the eight is dedicated to 5S when all participants and the facilitator visits one of the companies that volunteers. In this visit the facilitator helps the company to get started in their work with 5S and thereby gives a "hands on" experience for everyone. Rövik (2007/2008) emphasizes how the translator needs to see and grasp the unspoken in order to be aware of how a model or method is really working. This could be the explanation to why all three companies started their efficiency work with implementing 5S. Since they have heard and talked a lot about it, and then watched how to get started with it they all have what it takes to successfully translate the concept into their own organisation. Perhaps by really getting an in-depth view of a method as in this case the translator's competence is increased and this is why all translators in these cases have successfully implemented the same tools?

Timing

Quist (2003) emphasizes the importance of timing, and the ability to 'read the game', which is quite obvious that the translators have been able to in these four companies. During the interviews they talk much about the contexts, the people involved and problems in a way that shows that they are aware of things going on around them. This is probably a condition for reading a game. If you are not aware of what is happening around you, you cannot react.

It can be that the translators are not conscious about the term timing when it comes to doing changes. But when looking at the context of the companies and what they have done we think that they have adjusted the pace of implementation to the amount of work etc. So in that sense they do have a feeling for timing.

Competence

By having the position as production manager, the translator has a good knowledge about both the production areas and the production processes. We believe that a translator with that position will have the necessary competence to discuss ideas with employees and involve them in decisions. They also have the necessary overview of the production to follow in what is happening.

6.3.3 Translation process

Instrumental learning and challenge

Quist (2003) shows in a model (figure 5) how the translator is forced to deepen their meaning creation around the method when being met by resistance and being questioned. By going back and forth between knowledge input and reality (e.g. the method gets questioned by an employee which forces the translator to go back to material and search for answers), the translators will deepen their understanding of the method more each time this happens. This will according to Quist (2003) ultimately lead to the translator and the rest of the organisation breaking out of the "model addiction" and translate the content to fit the organisations own reality.

The case studies show that company A in particular show eagerness to listen to and involve the employees in the discussions and decisions (L-A). They say that after all it is the people at the stations who have the knowledge about how things work there, so one should value their knowledge. We think that the weekly or monthly meetings mentioned earlier can be seen as a great opportunity for the translator. It is a chance to hear opinions and questions from the employees. This information can be brought back and compared to what the translators have learned in Lean School, and achieve deeper meaning creation both for themselves and others.

The companies have shown that they reflect much on how to implement the methods in their organisation. They want to feel if the methods fit their organisation, and how ideas can be adjusted to fit better into a different context. We believe that the translator at all three companies show that they have critical thinking, and analyse before starting a process.

6.3.4 Organisational Platform

We cannot see from the interviews that the decision makers at the companies particularly have considered the organisational platform. The expression organisational platform is used much by Quist (2003), but is not so well known among our interviewees. However, when choosing the co-participants for the Lean School the leaders in all four cases chose to bring the production manager with them. The managers already have certain legitimacy due to their position, so nothing further is needed to point out their authority towards the other employees.

Further, the implementation was given a certain platform when Company C for example had a theme-day with education about the efficiency method. This gives the decision to precede with an implementation a strong legitimacy in the mind of the employees, and maybe most importantly gives it a name. This together with giving time during weekly meetings to discuss the implementation further gives legitimacy to the process.

NL-A expresses that such a large change as this efficiency method has to come from above, and have legitimate leaders, otherwise it would never be accepted or work out. What can be understood from this statement? Decisions are taken at management level, but the change process will eventually take place on employee level.

6.4 Being a Small Company

Hansson (2003) believes that small companies have an advantage in leadership commitment since the commitment of the leaders becomes more apparent in small organisations. Company B thinks that the leadership commitment has not changed, while company A and C believe it has increased. However it is possible to see by these statements whether Hansson is right in his statement above or not.

However, the results support Ghoadian & Gallear's (1996, as cited in Hansson, 2003) opinion that the smallness helps to create a feeling of responsibility. The involvement or commitment of employees differs for the three companies, and show that smallness does not necessarily create a feeling of responsibility. Gunasekaran et al. (1999) believe that small companies tend to value employee relationships to a larger extent than in large companies. We have seen from the interviews that especially company A tend to value relationships, and express that they want to keep the "small-company feeling". The other companies also show that they want to involve the employees in the implementation process.

Company A and C say that they believe that the smallness of the organisation have made the communication easier. We think it is possible that when the communication works well, the opinion among employees about the leaders' commitment will be higher. In Meeting 1 of the Lean School, it is also stated that the smallness is an advantage because it gives a tight communication and shorter decision paths, also supported by Gunasekaran et al. (1999). This is supported by company C and A who say that they believe the size of the company have made communication easier (L-C, L-A, NL-A). L1-B also thinks that they due to the smallness decisions are made quickly and that things happen fast. Gunasekaran et al. (1999) also say that in small companies the linkage to production is closer, and thereby small companies have a high degree of human decision making and implementation.

Hansson (2003) says that small organisations have an advantage in having a flexible organisational structure, lack of hierarchical positions and a strong organisational culture. Gunasekaran et al. (1999) supports the idea about being flexible. Since we do not have a parameter to tell us what is a short time or a long time for implementing a method like 5S it is hard to tell if this is true for the participating companies. We think that six months to a year does not seem like neither a short nor long time period for an implementation start up. If considering it a long time the explanation might be hindrances mentioned in Meeting 1 such as limited time resources or courage. If it should be regarded as a short time, maybe then the smallness did mean higher flexibility and ability to respond. One negative aspect of being small was that they tend to be slow in the adaptation due to lack of resources (Lee & Oaks 1995; as cited in Hansson, 2003). Company A indicates that the procedure not have gone as fast as they had hoped because of lack of resources, both financially and the time (NL-A).

During the company visits we perceived the environment and people to be rather homogeneous. This could indicate that there is a certain culture that creates an atmosphere within a company. We believe that a company culture can influence the way people act and behave. Since the culture of the companies where not specifically investigated we do not know if it has had any influence on the implementation or made things easier. However, the lack of strict planning for implementation procedures shows a flexibility that gives a company reactionary strength (they can react fast if things go wrong) and enables them to change tracks fast.

The hierarchical layers in the company can in all companies be divided into three layers: the owner or CEO, middle managers and employees, which is a rather flat organisation. This can also have been a reason for the simplicity to communicate in small companies that Company C expressed. Company A believes that having a flat structure makes it possible to delegate responsibility to employees and thereby increase the feeling of participation.

6.5 Incitements

Company B and C do not have any system for incitement (L-C, L1-B, L2-B, NL-B). However, company B gives occasional encouragements such as serving cake when the performance has been good (L1-B, L2-B, and NL-B). NL-B believes that incitement systems can create a bad atmosphere and thereby problems. Company A on the other hand has two systems for incitement: one connected to financial performance, and one connected to production waste and resource usage. In the second system the bonus consists of activities such as everyone going bowling.

Personally we think that incitements can be a good way to make people more committed and enthusiastic. But like NL-B say, if the system is designed in the wrong way it might instead lead to rivalry or bad atmosphere. From studying company A we realised that connecting the incitement to the production performance was important. Everyone should be able to see how their performance of their tasks can contribute and increase the bonus. The system should also mirror the reality, so if the performance is bad there is no bonus and the other way around. If the incitement is given on a regular basis, without an expectation for a level of performance, there is a risk that what once was a bonus starts to be considered a right instead.

7 Conclusions

The aim of this thesis was to describe the *implementation* and *translation* of one efficiency method in three *small manufacturing companies*, and look into the *translator*'s role in the implementation process.

7.1 Implementation

The leader commitment is important when implementing an efficiency method. Committed leaders will do enabling activities that lead to committed employees (everybody's commitment).Committed leaders seem to be more enthusiastic and inspire employees to commit themselves to changes.

The enabling activities that have had most positive impact on employee commitment are communication and empowerment. Both informal and formal communication is important. As seen in our multiple-case study informal communication in some cases has had a larger effect than training and education. Several of the employees appreciated the informal stories told at coffee and lunch breaks, and saw this as a source of inspiration. This was supported by employees from two out of three companies.

Buying-in and empowerment as an enabling activity was emphasized by two of the companies but in different ways. One company focused on involving everyone in the process by empowering everyone with responsibility for one part of the implementation. The other company focused on developing and buying-in better work aids and tools for the employees in order to improve the working environment but also the efficiency. Both companies felt an increased an employee commitment due to this.

Monitoring and evaluation was not done by the participating companies. Instead the employees had to see for themselves the results of the changes. This is good in the sense that the employees can experience the improvements and due to this become more positive to further change. We believe that structured monitoring and evaluation can help the implementation forward by seeing how far they have come both individually and as a team. The company can use the information when planning for further changes and to measure results. One of the companies expressed that they wished they had done more evaluations in order to get a grasp of the progress of the implementation e.g. to see how far they had come. This indicates monitoring and evaluation to be a valuable activity in the implementation process.

The companies did not manage to make everybody committed, but two of the companies experienced an increase in employee commitment. This was connected directly to the employees having seen the positive results of the changes. We believe this indicates the importance of starting with simple efficiency tools like 5S, in order for employees to experience fast and positive results already at the beginning of the implementation to increase motivation. This was experienced by all three companies.

Two of the companies experienced they had achieved increased customer focus, but only one of them can be regarded as having done this through their enabling activities.

7.2 Problems or Obstacles for Implementation

The most common problem and obstacle in the implementation process was human resistance. It was experienced by all of the interviewees. We have found that human resistance is a natural part of change rather than an obstacle that can be avoided. The enabling activities both modify resistance and help the company pass through the stage of human resistance more quickly.

If a company does not manage to involve everyone in a collective meaning creation, the whole process of implementation will take longer time due to distanced employees lagging behind. The degree of collective meaning creation can be increased by including the employees in discussions and decision making.

The most common organisational resistance experienced by the companies was lack of resources in form of time and money. This emphasizes the importance of efficiency work since this is a way to increase revenues.

Legitimacy has not been a problem for any of the companies since they have chosen translators who are already in leader positions. One of the companies, however, said that employees tend to ignore instructions when resisting a change despite the translator's managerial position.

7.3 Translation

We can draw the conclusion that the decontextualisation (packaging) of the method was successful since all of the participants of Lean School felt inspired and perceived what the efficiency method was about. Some of the tools taught in Lean School were perceived as easier than others to put into practice. This emphasizes the importance to make the method as available as possible by teaching it in a context that is similar to the participants' reality.

The companies failed in contextualising (unpacking) some of the information e.g. importance of a written down strategy, due to limited resources like time and money.

We believe that it is good to complement the knowledge input from Lean School, perhaps from an external source, than can help with the details of implementing an efficiency method.

The translator is of importance to the implementation process. To understand the knowledge before translating it is vital. This is supported by all of the companies in our study. They have all been successful when implementing the tools they found more useful, understandable and easy to apply in their own organisation. The parts of the efficiency method that seemed too theoretical have not been implemented at all.

The competence of the translator should be appropriate in regard to the both the knowledge input and the own context.

The part of instrumental learning and challenge is especially important at the beginning of each step of the implementation. The translator's ability to understand that methods have to be adjusted to fit the own context decides the degree of success of the implementation.

The companies were not aware of the organisational platform, and thus did not include it in any planning. Legitimacy for both the translator and the method to be implemented is needed to create an organisational platform. Decision might be taken at management level but the process of change will eventually take place on employee level. Therefore there must be legitimacy for the translator and also for the efficiency method in order to create acceptance among the employees.

7.4 Being a Small Company

Advantages we have found of being a small company are tighter communication, shorter decision paths and ability to change fast when needed. If small companies have the advantage of being flexible could not be determined. The lack of hierarchical layers contributed in making the decision path shorter, improving communication and also to enable the delegation of responsibility.

One company supported one negative aspect of being a small company. They found that the implementation took longer time due to lack of resources.

7.5 Incitements

Incitements were not valued by two of the companies. There was hesitance towards its ability to increase commitment. One of the participants believed that incitement system might even create a bad atmosphere among employees.

The company that had got furthest in their implementation of the efficiency method disagreed with this and pointed out the importance of the incitement being connected to production performance. Their experience was that this boosted employee commitment, allowing everyone to see how their performance contributes to the whole.

We believe that we have fulfilled our purpose and answered the research questions by these conclusions.

8 Discussion

When we chose our subject in September we had no idea that it would develop into such a large scope as this thesis did. During the process of writing the thesis we have continuously had to make limitations and selections to keep within a suitable area. However, when we struggled with the empirical findings and analysis we realised that it would have been possible to make a whole thesis on just one little part of our theoretical model. Realising this we still think that this thesis, despite its rather large scope, gives a first overview of the theories on implementation and translation that is valuable for someone who wants know what implementation and translation of methods are about. The theories by Rövik (2007/2008), Quist (2003) and Hansson (2003) are all very interesting in their own aspect of implementation, and therefore we recommend readers who are interested in production efficiency and/or organisational theories, to study them further. We have tried our best to make it easier for the reader by making summaries of both the theoretical framework and the empirical findings.

One thing that we would have done differently if starting over is to respect the amount of work needed to put together a thesis. It was very challenging to find appropriate theories that both supported the purpose and could be combined to use in an analysis. We probably spent too much time on things like theoretical studies, methodology and preparation for interviews that we lost track of time and found ourselves in time stress.

Another thing that we believed could have been done better was the construction of the questionnaires. If we were to do it again we would have a trial interview with a company and make a pre-analysis of the result to see if the answers functioned well or went in the wrong direction. Then the questions could have been adjusted to better suit the analysis. Because we failed in testing the questions correctly we ended up with an enormous amount of empirical findings that took an eternity to analyse.

As students we really appreciated the chance to come out and visit different companies and see how organisations function in reality, not to mention the opportunity to learn about manufacturing industries which was new to some of us. It is easy to get shut-in the world of theories when going to university, so this was a chance to see how things one learn in school functions in reality and how theories can be applied.

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Appendix 1 - A Clarification of the Core Values

Top management commitment – Dale et al. 1997, Abraham et al. 1999, Reed et al.2000 (as cited in Hansson, 2003) stresses the importance of the total commitment of the management as advocates, leaders and teachers. It is important that they plan for the implementation and take an active part in work, also in the evaluation of results. The management should try to create a customer orientation and set clear quality values.

Focus on customers – All processes should have a focus on customers. To focus on customers stands for finding out the customers' needs through market analyses and trying to fulfil market expectations while developing and producing a product.

Base decisions on facts – All decisions should be based on facts that are well founded. This emphasizes the importance of knowledge of variation, and also the ability to handle and control variation. Most products that come out on the market fails, so this further stresses the importance of gathering knowledge to base decisions on.

Focus on processes – Hansson (2003) denotes result as being only a dependent variable, while the focus should be set on processes. A process is a repetitive sequence of activities that drives result.

Continuous improvement – It is important for a company to continuously improve the quality of its products and processes since the external environment is also in constant change.

Everybody's commitment – In order to be successful there is a need for everybody in the organisation to commit to the goals of satisfying the customer with an improved quality. This also includes suppliers. Education and training is necessary to mediate the vision, direction and strategy. Keywords for commitment are information, delegation and training. (Wruck & Jensen 1998, Bergman & Klefsjö 2003, as cited in Hansson 2003)

Appendix 2 – Wordlist of methods for effiency improvements

5S is a Japanese philosophy of organizing the workspace and with the intent to improve efficiency by eliminating waste and improving work flow. The 5 methods represent sorting, set in order, shining meaning systematic cleaning, standardizing and sustaining (Scotchmer, 2008).

Kaizen is a Japanese philosophy that focuses on continuous improvement throughout the entire organization. When applied in the company, Kaizen activities continually improve all functions of a business, from manufacturing to management and reaches from the CEO to the assembly line workers. By improving standardized activities and processes, Kaizen aims to eliminate waste (Imai, 1986).

Single Minute Exchange of Die (SMED) is one of several lean production methods for reducing waste in a manufacturing process. It provides a fast and efficient way of a manufacturing changeover process to produce the next batch of products. This rapid changeover is the key of reducing production lot sizes and thereby improving the flow, which increase the capital turnover rate. Furthermore SMED gives an increase in effective operating time caused by the faster change-over. SMED is very useful to increase manufacturing flexibility (Shigeo, 1985).

TPM or Total Productive Maintenance is a proactive approach that aims to prevent any kind of slack before occurrence. Its motto is zero error, zero work-related accident, and zero loss. In TPM the machine operator performs much, of the routine maintenance tasks themselves. This maintenance ensures appropriate and effective efforts since the machine is wholly the domain of one person or team.

TQM or Total Quality Management is an ideology that forms the specific organization. The aim is to make the company more effective through three common value assessments: customer orientation, process orientation and continuous improvements (Savolainen, 1997 as cited in Quist, 2003).

Appendix 3 – Questionnaire 1

For the Interview with the Lean School Participant

	1. Introduktion / Introduction
	Vad heter du och vad är dina ansvarsuppgifter i organisationen? What is your name and what are your responsibilities in the organization?
	Hur länge har du arbetat på företaget? How long have you worked at the company?
	Kan du beskriva din roll i effektiviseringsarbetet? (med roll menas din specifika roll i arbetsgruppen? Can you describe your role in the efficiency work? the role means your specific role in the working group?
	Har du någon informell position? Vilka av dina ansvarsuppgifter är kopplade till effektivitetsarbetet? Do you have any formal position? Which of your responsibilities are linked to the effeiciency work?
	Hur länge sedan var det som du deltog i lean skolan? How long ago was it that you participated in lean school?
	Hur många från ert företag deltog i utbildningen, och varför just dessa personer? How many from your company participated in the education, and why these people?
	Har man gett någon legitimitet åt er som deltog i utbildningen? (makt att genomföra förändringar, inför resten av de anställda) Have any legitimacy been given to those who participated in the education? (power to implement changes, towards the rest of the employees) Vilka har ansvarat för införandet av lean på ert företag? (tex de som deltagit i utbildningen) Who has been responsible for the introduction of lean in your company? (eg those involved in education) Har implementeringen presenterats som en del av företagets långsiktiga strategi? (och därmed getts legitimitet)? Has the implementation been presented as part of the companys long-term strategy? (and thus given legitimacy)?

	Arbetar företaget med någon annan effektiviseringsmetod än de metoder som lärs ut i lean skolan? Konkurrerar metoderna med varandra på något sätt? Does the company work with any other efficiency method than the methods taught in the lean school? Do the methods compete with each other in any way?
	Beskriv vilka grundläggande värderingar som ni arbetar utifrån i er verksamhet (core values)? Describe which basic values that you work from in your business (core values)?
	2. Varför? / Why?
	Beskriv hur ni (företaget) kom i kontakt med Lean skolan på Host company? Describe how you (the company) came in contact with Lean school at the Host Company?
	Ansåg ni (ledningen) då att företaget var i behov av effektivisering? Beskriv varför. (anticipative, reactive, crisis) Did you thought (management) the company was in need of streamlining? Describe why. (anticipative, reactive, crisis)
	Vem eller vilka på företaget tog beslutet att delta i Lean skolan? Who or whom at the company took the decision to participate in Lean school?
	Var det samma person/personer som beslutade vem som skulle delta i utbildningen? Was it the same person / persons who decided who would participate in the training?
	Vilket var det första steget som togs vid införandet av effektivitseringen(lean)? What was the first step taken in the introduction of the streamlining (lean)?
	Började ni med implementeringen under eller efter utbildningen? Varför? Did you start with implementation during or after training? Why?
	Beskriv när du upplevde att företaget systematiskt började arbeta med effektiviserings processen? Describe when you felt that the company systematically began working on streamlining its processes?
	3. Hur? / How?
	Har man informerat alla de berörda medarbetarna om det man tänkt göra? Hur? Varför på detta sätt? Have you informed all the employees on what it is proposed to happend? How? Why in this way?

	Har ni haft någon form av utbildning för berörda medarbetare? Hur? Varför på detta sätt? Have you had any form of training for the involved employees? How? Why in this way?
	Har ni utformat en specifik handlingsplan för implementeringen? Hur? Varför på detta sätt? Have you developed a specific action plan for the implementation? How? Why in this way?
	Vid förberedelse för implementering, har du fått gå tillbaka till det du lärt er i Lean skolan för att fördjupa din kunskap? Beskriv hur. At the preparation for implementation, have you had to go back to what you have learned in Lean school to deepen your knowledge? Describe how.
	Upplever du att du har kunnat göra de teoretiska kunskaperna till dina egna, och forma ett angreppssätt som fungerar för just ert företags verksamhet? Beskriv hur. Do you feel that you been able to make the theoretical knowledge to your own, and shape an approach that works for your business? Describe how.
	Upplever du att du har fått nya insikter under den praktiska delen av implementeringen? I så fall vad/vilka? Do you feel that you have received new insights during the practical part of the implementation? In that case, what / which?
	Under implementeringens gång, har ni haft kontinuerlig uppföljning (exempelvis veckomöten)? Hur? Varför på detta sätt? During the implementation time, have you had continuous follow-up (such as weekly meetings)? How? Why in this way?
	Har du/ni fått omformulera strategin för implementeringen? Ändra taktik? Hur? Varför på detta sätt? Have you had to reformulate the strategy for implementation? Change tactics? How? Why in this way?
	Upplever du att engagemanget i sina arbetsuppgifter har ökat bland medarbetarna jämfört med före lean skolan? I så fall hur? Vad tror du är anledningen till det? Do you feel that the commitment of their duties have increased among employees compared to before the lean school? If so, how? What do you think is the reason for that?
	Har medarbetarna varit delaktiga i beslut kring implementeringen? Hur? Beskriv varför/varför inte.

	Has the staff been involved in decisions about implementation? How? Describe why / why not.
	Upplever du att företagets ledarskap är mer engagerat än tidigare? I så fall hur? Vad tror du är anledningen? Do you feel that the company's leadership is more committed than before? If so, how? What do you think is the reason?
	Upplever du att man arbetar mer utifrån ett kundfokus i processerna? (att allt man gör ska tillföra något till kunden, annat är ”muda”) Isåfall beskriv hur. Do you perceive that the work is more customer focused in the processes? (that everything you do will bring something to the customer, any else is "muda") If so how.
	Har ni mött på något motstånd vid implementeringen av det ni lärt er i lean skolan, och i så fall var i organisationen och hur? Vad skulle kunna vara anledningen? Har motståndet förändrats med tiden, i så fall på vilket sätt? Vad har detta betytt för effektiviseringen? Om inget motstånd: varför tror du att införandet inte stött på något motstånd i er organisation? Have you met any resistance in the implementation of what you have learned at lean school, and if so, where in the organization and how? What could be the reason? Has resistance changed over time, if so, how? What has this meant for the streamlining? If no opposition, why do you think the introduction not encountered any resistance in your organization?
	Beskriv, ur ett tidsperspektiv, implementeringen av det ni lärt er på lean skolan? (lång/kort tid, process mm) Describe, from a time perspective, the implementation of what you learned at lean school? (long / short time, process, etc.)
	Var det någon effektiviseringsmetod som utmärkte sig på något sätt? Utveckla. (exempel lättare/svårare, bättre/sämre, inte passade in) Was there a more efficient method that stood out in any way? Explain. (eg easier / harder, better / worse, did not fit)
	4. Mål / Goal
	Vad är ditt intryck av lean production? What is your impression of lean production?
	Upplever du någon skillnad i tillfredsställelsen hos era kunder? Beskriv hur. Hur har ni observerat detta? Do you experience any difference in satisfaction of your customers? Describe how. How have you noticed this?
	Beskriv dina förväntningar på införandet av effektiviseringen. Upplever du att dina förväntningar på något sätt skiljde sej från ledningens förväntningar? Beskriv hur ser det ut idag.

	Describe your expectations for the introduction of the streamlining. Do you feel that your expectations in any way differ from management's expectations? Describe how it looks today.
	Beskriv era eventuella mål inför implementeringen. Uppnåddes målen? Beskriv hur? (kvalitet, resursåtgång, produktionstid, leveransaspekter, output, kostnads-reduceringar, waste) Describe your potential targets for implementation. Were the objectives achieved? Describe how? (quality, resource consumption, production, supply issues, output, cost reductions, waste)
	Hur har målen för implementeringen följts upp/mätts? Om inte: varför? How have the objectives of the implementation measureds? If not, why?
	Har medarbetarna varit insatta i målen och haft möjlighet att påverka dessa under implementeringen? Varför/varför inte? Beskriv hur. Has the staff been aware of the objectives and had the opportunity to influence them during the implementation process? Why / why not? Describe how.
	Vad är den största behållningen av implementeringen enligt dig? Utveckla. What is the greatest reward from the implementation according to you? Explain.
	Har förändringsarbetet haft ledningens stöd under hela implementerings processen? Hur? Has the change had the management's support throughout the implementation process? How?
	Har ni något belöningssystem? Varför/varför inte? Beskriv hur det ser ut. Do you have any reward system? Why / why not? Describe how it looks.

Appendix 4 – Questionnaire 2

Interview with a co-worker not participating in the Lean School

	1. Introduktion / Introduction
	Vad heter du och vad är dina ansvarsuppgifter i organisationen? What is your name and what are your responsibilities in the organization?
	Hur länge har du arbetat på företaget? How long have you worked at the company?
	Hur berör effektiviseringsarbetet dina arbetsuppgifter? How does the streamlining concern your work?
	Vem har varit ansvarig för implementeringen av effektiviseringen? Who has been responsible for the implementation of the streamlining?
	Har implementeringen presenterats som en del av företagets långsiktiga strategi? Has the implementation been presented as part of the companys long-term strategy?
	Arbetar företaget med någon annan effektiviseringsmetod än de metoder som lärs ut i lean skolan? Konkurrerar metoderna med varandra på något sätt? Does the company work with other streamlining methods than the methods taught in the lean school? Do the methods compete with each other in any way?
	2. Varför? / Why?
	Ansåg du då att företaget var i behov av effektivisering? Beskriv varför/varför inte. Did you felt the company was in need of streamlining? Describe why / why not.
	Beskriv när du upplevde att företaget systematiskt började arbeta med effektiviserings processen? Describe when you felt that the company systematically began working on streamlining its processes?
	3. Hur? / How?
	Har man informerat alla de berörda medarbetarna om det man tänkt göra? Hur? Varför på detta sätt? Has all the employees been informed on what is proposed to happened? How? Why in this way?

	Har du deltagit i någon form av utbildning i effektiv produktion? Have you participated in some form of training in the efficient production?
	Upplever du att du har fått nya insikter under/efter införandet av effektiviseringsmetoden? I så fall vad/vilka? Do you feel that you have received new insights during / after the introduction of the streamlining method? In that case, what / which?
	Under implementeringens gång, har ni haft kontinuerlig uppföljning (exempelvis veckomöten)? Hur? Varför på detta sätt? During the implementation time, have you had continuous follow-up (such as weekly meetings)? How? Why in this way?
	Känner du att du har kunnat påverka effektiviseringsarbetet? Varför, varför inte? Do you feel that you have been able to affect the enhancement work? Why, why not?
	Känner du dig mer engagerad i dina arbetsuppgifter jämfört med före implementeringen? I så fall hur? Vad kan vara anledningen? Do you feel more engaged in your work compared to before implementation? If so, how? What could be the reason?
	Upplever du att företagets ledarskap är mer engagerat än tidigare? I så fall hur? Vad tror du är anledningen? Do you feel that the company's leadership is more committed than before? If so, how? What do you think is the reason?
	Upplever du att man arbetar mer utifrån ett kundfokus i processerna? (att allt man gör ska tillföra något till kunden, annat är ”muda”) Om ja, i så fall hur? Do you perceive to work more from a customer focus in the processes? (that everything you do will bring something to the customer, anything else is "muda") If yes, how?
	Har ni mött på något motstånd vid implementeringen av det ni lärt er i lean skolan, och i så fall var i organisationen och hur? Vad skulle kunna vara anledningen? Har motståndet förändrats med tiden, i så fall på vilket sätt? Vad har detta betytt för effektiviseringen? Om inget motstånd: varför tror du att införandet inte stött på något motstånd i er organisation? Have you met any resistance in the implementation of what you been taught in lean school, and if so, where in the organization and how? What could be the reason? Has resistance changed over time, if so, how? What has this meant for the streamlining? If no opposition, why do you think the introduction not encountered any resistance in your organization?
	Var det något effektiviseringsmetod som utmärkte sig på något sätt? Utveckla. (exempel lättare/svårare, bättre/sämre)

	Was there a more efficient method that stood out in any way? Expain. (eg easier / harder, better / worse)
	4. **Mål / Goal**
	Vad är ditt intryck av lean production? What is your impression of lean production?
	Känner du dig mer effektiv i din arbetssituation än före implementeringen av effektiviseringsarbetet? Do you feel more effective in your work situation than before the implementation of the streamlining work?
	Beskriv eventuella mål inför implementeringen som du känner till. Uppnåddes målen? Beskriv hur? (kvalitet, resursåtgång, produktionstid, leveransaspekter, output, kostnadsreduceringar, waste) Please describe any objectives before the implementation that you know of. Were the objectives achieved? Describe how? (quality, resource consumption, production, supply issues, output, cost reductions, waste)
	Hur har målen för implementeringen följts upp/mätts? Om inte:varför? How have the objectives of the implementation monitored / measured? If not, why?
	Känner du att du har kunnat påverka målsättningarna? Do you feel that you have been able to influence the objectives?
	Vad tycker du är den största behållningen av implementeringen? What do you think is the greatest rewards from the implementation?
	Har ni något belöningssystem? Varför/varför inte? Beskriv hur det ser ut. Do you have any reward system? Why / why not? Describe how it looks.