Produce visual goals and metrics for various auditing projects at a level that is appropriate for individual auditors. Use Lean thinking to develop any project that can improve the tax audit process.
ABSTRACT

The Swedish Tax Office, Skatteverket, aims at providing a good service to its customers in order to favor compliance to taxes. The Tax Audit process of businesses plays a key role in this as Skatteverket and the taxpayer interact directly within this process.

The focus of this thesis is to apply Lean philosophy to improve the Tax Audit process. Eliminating non value-adding steps, developing visual management tools and implementing a continuous improvement mindset are the tools used to achieve it.

This Thesis states the observations of the current situation and develops three projects led by Lean. First one is a customer portal, an online platform which gathers all relevant information about the Audit. Second is the time reduction of an administrative process and last one consists in the improvement of the Pulse meeting.

Keywords: Lean in services, Tax Audit, Pulse meeting, visual tools.
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INTRODUCTION

This thesis is a continuation of the Master thesis done earlier by two students of KTH Bénédicte Beuneu and Robinson Leloup on lean approach to Tax Audit process applied at Swedish Tax Agency (Skatteverket) [1]. They looked at the whole tax audit procedure and developed a detailed plan to find wastes and proposed a system that could be ideal to Skatteverket according to the lean philosophy. They also proposed some improvement areas in terms of projects A, B, C, D that could be potentially useful to Skatteverket.

Skatteverket was interested in developing project C ‘Deployment of Visual Management tools’. The scope of the thesis was to ‘develop process efficiency with in Tax audit process focusing on Visual management and Goals’ for their tax offices 5,6 and 7 within the Stockholm region.

In line with the same the analysis of the current system started out in 2010 at Skatteverket for the scope by conducting interviews with the entire hierarchy of auditors right from department managers to the auditors to ascertain their perception about visual management and goals both local and global to Skatteverket with respect to internal and external customer.

During the course of this thesis, the external customer is regarded as the entity being audited and the internal customer being the entity conducting the audit.

After the Analysis, authors reached a conclusion to develop three projects to improve on the scope of the thesis assigned by Skatteverket.

They were:

Customer Portal- A visual interface between the internal and external customer

Diary Number Process- Proposal for eliminating wastes within the process by applying visual tools of lean namely process flows and Value stream Mapping.

Pulse Room- Proposal for implementing improvements in the pulse room already existing at office 7 as a specimen and implementation of the improvements.

Final discussion given in the conclusion will give results, limitations and perspectives for further work.
I. LITERATURE REVIEW

LEAN THINKING

Background about Lean thinking

The principles of Lean emerged in the early 1900’s, with the development of car mass-production. Henry Ford developed new ways of producing cars focusing on moving the products instead of the workers. With the diversification of the demand, Ford’s system started collapsing being unable to cater for the demand in variety and because of little attention paid to the human resources.

After World War II, a new manufacturing revolution arose in Japan. Indeed, manufacturers had to deal with a hard equation: how to produce with limited sources of raw materials, labor movements and limited capital availability?
A small car manufacturing company, Toyota, decided to tackle these challenges. Analyzing the positives and negatives of Henry Ford’s system, Taichii Ohno¹ built up a new production system named Toyota Production System (TPS). TPS is based on the principle of “maximizing customer value while minimizing waste” [2]. Many correlated principles and tools have been developed to support it such as Just-In-Time, continuous improvement (Kaizen), 5S, “5 Whys” analysis, Poka-Joke or Gemba.

Toyota grew up more and more and started to sell its cars out seas, competing with American giants like Ford and General Motors. In the mid-1980’s, these traditional car manufacturers faced hard times while Toyota kept growing. Many people started to look more carefully upon the reasons which have led to this success. Therefore many western companies started implementing these ideas in their production. In Sweden, the most well-known examples are Scania or AstraZeneca². However, it took a long time for western companies to understand the principles of Lean and to implement them in an appropriate way. Indeed, many managers were focusing more on the tools themselves rather than on the ideas and the philosophy behind it.

In the last 10 years, Lean implementation has been extended to other fields than manufacturing. Benefits have already been observed in sectors like logistics and distribution, services, retail, healthcare and even government. And its implementation will keep growing as lean specialists assess that “lean consciousness and methods are only beginning to take root among senior managers and leaders in all sectors today”. [2]

¹ Taichii Ohno: Toyota’s executive, father of the Toyota Production System TPS.
Lean in services

How to implement Lean in services?

In the last 20 years, many service businesses have implemented Lean inspiring from the philosophy developed in manufacturing companies such as Toyota or Scania. Different service areas have already benefited from Lean such as health care, higher education, call center services and other public and private professional services.

Adaptation of Lean from manufacturing to services is not straightforward and peculiarities of each sector should be considered. As Julia Hanna explains it in the Harvard Business Review, “Not all lean manufacturing ideas translate from factory floor to office cubicle. For example, tools such as the andon cord, a rope that manufacturing workers pull when they encounter a problem on the line, are not directly replicable [in service] as there is no line to stop.”[3]

However, many ideas can be taken from Lean. Ideas like reducing wastes, working according to standards, support continuous improvement, are applicable to service businesses.

It is overriding to underline here that a major part deals with changing the mindset and make people think lean. Tools are just here to support the philosophy. Thus, explaining the core ideas of Lean and training people to its implementation is a key point.

Success story

Many companies have implemented Lean with success. Here the authors decided to focus on an example taken from the Swedish service sector, to show that Lean can be adapted to a similar activity. Thus, the study is about Lean in Skåne’s hospital.

Even though services provided at Skåne’s hospital were high standards, patients were complaining about long waiting times to be operated, delays and other postponements. Some operations had to be delayed because of lack of resources or available materials and it was quite usual for doctors and medical-assistants to work extra hours.

Based on these observations, the managers of the hospital decided to find a new way of approaching these issues and thus decided to implement Lean.

In order to start, the ablation service was chosen as the testing department for Lean implementation. This was for two reasons: first because there was a long queue for it and second because the follow-up of these patients was easy to be done. The first steps consisted in gathering everyone and starting brainstorming about what causes delays and prevent the whole process to run smoothly. Indeed, according to Lean thinking, ideas of improvements should come from the bottom of the ladder and go up, not the other way around.
Ideas were made clear and written down. A “Lean house” [4] was built up to make this visible and spread it visually among the stakeholders. This “Lean house” is very much inspired from the Toyota House and put the respect of individual ‘in’ as centre of concern.

Fig.1. Lean House of Skåne’s hospital.

Other tools were used such as visual boards or value stream mapping to analyze the process. But more than tools, mindsets had to be changed and a commitment for continuous improvement had to be implemented and supported. The bosses slowly changed their roles from managers to teachers to the employees they were responsible of.

Fig. 2. Example of visual boards used in Skåne’s hospital

Even though Lean is a long term-thinking philosophy, results have already been observed since its implementation in 2007. In the case of ablations, their number has increased by about 50%. The number of patients treated in one day has increased by 20% without rise in stress [5]. The overtime working has decreased and other non-measurable benefits have been observed. All of it has been made possible against a true commitment and involvement of all the stakeholders. Skåne’s hospital is now a leader of Lean Healthcare in Europe and shows that Lean, smartly adapted to the peculiarities of the hospital environment, can be beneficial to another sector than manufacturing.
GOALS AND OBJECTIVES

**Goal**

"My goal is simple. It is complete understanding of the universe."
—Stephen Hawking

A **Goal** is a projected state of affairs that a person or a system plans or intends to achieve a personal or organizational desired end-point in some sort of assumed development. [6]

The goals for an organization can have a lot of influence on the way its employees develop and realize their competencies and contribution towards their personal and organizational growth.

The business dictionary defines goal as "**dream with a deadline**" a goal is an observable and measurable end result having one or more objectives to be achieved within a more or less fixed timeframe. [7]

To further elaborate it, a ‘Goal’ can generally be regarded as a statement of a desired future an organization wishes to achieve. It describes what the organization is trying to accomplish. Goals may be strategic (making broad statements of where the organization wishes to be at some future point) or tactical (defining specific short-term results for units within the organization). Goals serve as an internal source of motivation and commitment and provide a guide to action as well as a means of measuring performance [8].

Formulation of Goals is the start point. Defining them properly is very important. Goals should be relevant in terms of organization and its work. This can be achieved by defining organizational goals that help to conceptualize and articulate the future direction of the organization. In short setting the direction for an organization to develop a common understanding of the present state of organization and its direction in the future.

**Objectives**

**Objectives** are the specific measures one uses to determine whether or not one is successful in achieving the goal. These objectives provide an organized pathway that will make it possible to meet the goals set for an organization.

**Defining Measureable Objectives**

A key to achieving goals is to ascertain the objectives that can make that goal achievable. Organizations can try formulating these objectives by number of ways. They can start defining their objective by deliberating on defining measureable objectives keeping in line with the following details:
Who is Involved:

It is to identify people whose behaviors, knowledge, and/or skills are to be used, underlining the potential of each individual for whom the goal is set and objective is to be handed out.

Desired Outcomes:

The need to identify the desired outcomes that the organization intends to achieve by using the knowledge and skills of the participants for whom the goal is set. It is also based on the consideration whether these outcomes can be measured according to a certain scale.

Progress measured:

Setting parameters to measure the progress of an objective is very important. Therefore there should be a balanced measurement criteria set to monitor the progress of the objectives. This also calls for the progress to be visible for those monitoring the objectives by availing the necessary resources.

Proficiency level:

Identifying the criteria for success of each and every objective corresponding to the goal.

Outcome Occurrence:

Identifying an estimated time frame on when these objectives should be reached and assessed accordingly and how well have they contributed to the achievement of the goal.

Goals and Objectives

"The goal is where we want to be. The objectives are the steps needed to get there." [9]

It is important at this point to make a clear distinction between goals and objectives to further elaborate on how goals and objectives differ with each other.

Goals Vs Objectives:

Goals and objectives have a different meaning altogether so it is very important to differentiate between goals and objectives in a subjective manner.
Table 1. Comparison of goals and objectives

<table>
<thead>
<tr>
<th>Goals</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals are broad statements of purpose that conform to an organization’s vision</td>
<td>Objectives are narrow fine tuned ways to achieve those guidelines</td>
</tr>
<tr>
<td>Goals can be regarded as general intentions of what has to be done</td>
<td>Objectives are the precisely well established principles that have to be followed for the fulfillment of those general intentions.</td>
</tr>
<tr>
<td>Goals are intangible and have to remain the way they are set until the scope of the work or scope of the organization takes a drastic shift</td>
<td>Objectives are tangible and their tangibility fluctuates according to their application and realization.</td>
</tr>
<tr>
<td>Goals are an abstract form of depicting what the organization stands for and what does it intends to be</td>
<td>Objectives are concrete steps to achieve something in a certain measure; it can be time, effort or any other measure.</td>
</tr>
</tbody>
</table>

Relationship:

Goals and objectives are quite different yet there is a strong relationship between them and this relationship help the companies to follow the right directions for their future progress and sustainability. This relationship between goals and objectives can provide a form of control since they create a feedback opportunity regarding how well or how poorly the organization executes its strategy. Goals and objectives also are a basis for reward systems and can align interests and accountability within and across business units. This can further be explained on how organizations can classify their goals and objections according to their mission and vision statements.

Organizational Goal and Objectives

An organizational goal-management solution ensures that individual employee goals and objectives align with the vision and strategic goals of the entire organization. Goal-management provides organizations with a mechanism to effectively communicate corporate goals and strategic objectives to each person across the entire organization. The key consists of having it all emanate from a pivotal source and providing each person with a clear, consistent organizational-goal message. With goal-management, every employee understands how their efforts contribute to an enterprise’s success.
(S.M.A.R.T.) technique for goal setting at an organizational level is one of the best examples to set goals in a simple and transparent way but to make these set goals be visualized, understood and measured is a challenge most organizations want to overcome.

**Goal Setting the S.M.A.R.T Way**

“Goal setting is one of the basic tools used by organizations to assist in setting a direction and achieving it. Successful organizations often set long- and short-term goals for service development, improving quality, reducing errors, becoming more customer-focused, and building better internal and public relations.” – Jeffrey Davis, Managing and Achieving Organizational Goals. [10]

**Setting Goals**

How goals are set is as important as the goal itself. Thus it is important that goals meet specific criteria that can be used to easily assess them. One way of doing this is to use the acronym “S.M.A.R.T.” as a way of evaluating the goal. S.M.A.R.T. goals provide a great framework to improve your goal setting and help you create more effective goals, thus S.M.A.R.T. goals can be best described as **Specific**, **Measurable**, **Attainable**, **Relevant** and **Time-bound**. The description on how can S.M.A.R.T. goals be initiated and developed is underlined below.

**Specific**

A goal is specific when it provides a description of what is to be accomplished. A specific goal is a focused goal. It will state exactly what the organization intends to accomplish. While the description needs to be specific and focused, it also needs to be easily understood by those involved in its achievement. It should be written so that it can be easily and clearly communicated. A specific goal will make it easier for those writing objectives and action plans to address the following questions: Who is to be involved? What is to be accomplished? Where is it to be done? When is it to be done?

**Measurable**

A goal is measurable if it is quantifiable. Measurement is accomplished by first obtaining or establishing base-line data. It will also have a target toward which progress can be measured, as well as benchmarks to measure progress along the way. A measurable goal will answer questions such as: How much? How many? How will you know when it is accomplished?
**Attainable**

There should be a realistic chance that a goal can be accomplished. This does not mean or imply that goals should be easy. On the contrary, a goal should be challenging. It should be set by or in concert with the person responsible for its achievement. The organization's leadership, and where appropriate its stakeholders, should agree that the goal is important and that appropriate time and resources will be focused on its accomplishment. An attainable goal should also allow for flexibility. A goal that can no longer be achieved should be altered or abandoned.

**Relevant**

Goals should be appropriate to and consistent with the mission and vision of the organization. Each goal adopted by the organization should be one that moves the organization toward the achievement of its vision. Relevant goals will not conflict with other organizational goals. As noted earlier, goals are set by or in concert with the person responsible for achievement. It is important that all short-term goals be relevant (e.g., consistent) with the longer-term and broader goals of the organization.

**Time-bound**

Finally a goal must be bound by time. That is, it must have a starting and ending point. It should also have some intermediate points at which progress can be assessed. Limiting the time in which a goal must be accomplished helps to focus effort toward its achievement.
II. INVESTIGATION

REPORT ON INTERVIEWS

Introduction

To continue with the study at Skatteverket the Swedish Tax Agency, it was decided to conduct across the board interviews with the personnel generally assigned the task of auditing that includes Audit Office 5, (SK 5), Audit Office 6 (SK 6), Audit Office 7 (SK 7) and Audit Office for International Businesses (Utlands). The distribution of interviewees is summed up in the following table.

<table>
<thead>
<tr>
<th></th>
<th>SK 5</th>
<th>SK6</th>
<th>SK7</th>
<th>Utlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditor</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Audit Leader</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Section Manager</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

The purpose of these interviews was to chalk out and obtain hands on information on Skatteverket’s functioning. It was also to judge the contribution to the audit process by the people at different levels in the hierarchy. This included the Auditors, Audit leaders and Section Managers.

Areas selected for Interviews

In continuing with the same three major areas were marked for the interview. These were Perception of Goals, Visual Management Adaptability, and Standardization of work Practices, during the course of an audit assignment. The selection of these areas is based on the knowledge of authors and the topic of thesis assigned by Skatteverket. These areas provide the building blocks to assess the leanness existing in within an organization in general and a service organization in particular. These areas could give valuable insights on the perception of people working on audit assignments both directly or indirectly on the specific areas selected for the interviews.

The questionnaire can be found in Appendix 1.
Methodology

In line with the same, certain criteria were developed for conducting the interviews, the main highlights on way these interviews conducted can be counted as follows.

- The students assigned the task of the master thesis will conduct the interviews face to face with the person being interviewed.
- The person being interviewed will be called an interviewee and the person interviewing them would be regarded as interviewer.
- The form on the interview will be a questionnaire consisting of 19 composite questions.
- The questionnaire would be the same for each level of hierarchy being interviewed.
- All the material/information obtained after the interview would remain strictly confidential and none of the information of individual or name of the interviewee will be disclosed to any stakeholder except for the people involved in conducting the interview.
- All information obtained after the interview conducted would be compiled in a comprehensive report that will be used for the study.

The authors conducted interviews of 13 specimen interviewees, starting from the section manager down to the auditor.

Findings of the Interviews

The authors will now elaborate on the Information/material gathered from the interviews, the good points and the challenges related to Perception of Goals, Visual Management Adaptability, and Standardization of work Practices, during the course of an audit assignment.

Perception of Goals

Goals tend to be the basis on which you plan to work; these can be general or specific, long term or short term. The questions were centered on the perception of goals at each level of the hierarchy, their alignment to the general goals of Skatteverket [11] and the path they adopt to reach these goals.

During the course of the interviews the authors found out a high tendency of understanding on the concept of goals at the manager level, but as you go down to
the audit leader and auditor itself, the understanding of goals and ways to achieve it got lower and lower. They had their own way of defining their goals; most of them were concerned about the ‘Time Line’ goals [12] of 4 months and 10 months and perceived that as their primary goals to complete 50% of the audits in 4 months and 90% in 10 months. There seemed little understanding on the difference between goals and objectives and most of them had their own idea of setting goals and following them. The authors found a big gap in communication of goals general to Skatteverket and the goals individually set for them. Having said that most of them had an idea on the importance of goals and their achievement.

**Visual Management Adaptability**

When thinking in terms of lean, visualization of work practices plays a very important role in making people realize what is expected from them and planning of their work practices. It also plays an important role in communicating progress to most of the stakeholders if not all of them.

A part of the interviews also centered on visual management and its adaptability to Skatteverket. The focus was to find out, if any sort of visual management existed at SK 5, SK 6, SK 7 and Utland. If yes, in what form? And is it really helping to bring a change in the mindset of the employees utilizing it? The Authors found out, a majority of the interviewees were not very motivated about having such a system, but some of them also gave a positive feedback about it. The people at the top of the hierarchy were quite motivated to have such a system as they had probably heard about it before. Such a system can get them updates on progress and keep the employees working under them, plan and make their progress visible to them.

The authors found that a visual management system existed called the Pulse room\(^3\), at SK 7. Interviewees from this particular section were quite happy and motivated to work with such a system as it allowed them to plan their work in advance. This also gave them the opportunity to relay a feedback at the end of the week about their achievement according to the weekly plan. This system was in its early stages of implementation and it needed some more time to actually work properly. The authors also had the opportunity to actually see a pulse room meeting at this section and were quite satisfied with the proceedings still there was room for improvement and need to study this in detail with respect to the Audit Office work routines.

Another interesting thing that was that all the auditing offices or Skattekontors namely SK 5, SK 6 and SK 7 were using some sort of excel sheets to relay their performance about their particular audit assignments which is not bad at all although if such a system exists it has to be standardized and shared accordingly.

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\(^3\) Room where stands a visual board showing the progress of projects using very simple features like coloured magnets to give a general picture at a glance. “Pulse meetings” are short meetings which occur on a regular basis (daily, weekly) where employees shortly give updates of the progress of their ongoing projects.
Standardization of work Practices

Standardization plays a very important role in Lean, the purpose of standardized work is the "foundation for kaizen [13]."
If the work is not standardized and it is different each time there is "no basis for evaluation", meaning no reference point from which to compare. The concept of sustained improvement lays great emphasis on standardization of work practices both locally with a department and globally throughout the organizations as standardization helps to reduce variability and eliminate waste, things that do not add any value as discussed earlier.

In the course of interviews some questions were asked to lay stress on the purpose of standards and their importance to interviewees following them. The authors also laid stress on finding out the way standards can be used for continuous improvement i.e. opportunities available to the employees for refining or redefining a standard that they think can help them do their work more efficiently and effectively. The authors observed that a structured approach existed towards the general standards for auditing called the “Revisionsmodellen”.

They referred to it for general auditing practices but there was a high degree of variation in standards followed by the audit office itself called ‘Skattekontor’, within each department the standards differ from the other on work practices within that particular department. In this authors found out that, though the nature of the assignments for auditing except for International Businesses Auditing Office ‘Utlands’, was nearly the same yet each Skattekontor was following its own way of communication, documentation and other aspects of the audit. All of them used ‘SAFIR’⁴ for storing data for each audit assignment, but the relaying of information varied from one Skattekontor to the other, some were using the excel sheets to relay their progress some were using only verbal communication to find out the status some were trying to use both, some had software like ‘TRES’⁵ and ‘Mats Persson’⁶, and yet one Skattekontor was using a Pulse Room to monitor the progress. This gave an impression that although records were being maintained and a lot of data was being stored and being put to good use yet it was in a distributed manner and ideally not as structured and standardized and following a particular guideline. Now if an employee of SK 6 has to work for an assignment in SK 7, then he/she will have to get acquainted to the working of SK 7 first before he/she starts to work on his new assignment though the nature of auditing is almost the same or vary to a little extent.

Bringing an improvement in standards was also discussed and a basic system existed in this regard. It was not working exactly in a structured manner, though the competence was there and it was good to know a channel existed for this purpose to propose a change or have standard reviewed but it relies in some way on a particular personality and not the system by which it can be improved. In addition to this, through discussions another important point was noted. It was the lack of support on certain ideas being floated but getting little or no response or a feedback. There was an impression that their ideas will not be put to good use.

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⁴ SAFIR is the name of the software used internally in Skatteverket to document an Audit.
⁵ Internal software to report the work being done by auditors
⁶ Name of an internal spreadsheet recording the type and focus of each working hour
General Part

The general part of the questionnaire consisted of questions that mainly related to the knowledge of Lean, problems and motivation to achieve desired results.

In this part the authors observed that majority of the interviewees had a rough knowledge of Lean. The problems were addressed in general. The feedback obtained was mostly related to the Administration Department called the ‘V.E.’ and the procedure to allot a diary number when the audit is initiated though the process of V.E. takes little more than one day in general but the procedure is a bit complex and stressful as viewed by majority of the interviewees. They also informed about the delays within the process due to lack of prompt feedback on part of the firms being audited. Another question was about the rewards or benefits that could motivate them to achieve goals set for them, most of interviewees replied in affirmative to this extent regardless of the personal benefits they were more inclined to their performance being noticed and commended by their bosses, even a gesture from their boss that the interviewee had done a good job was more than enough for them.

Conclusions

In short the exercise of conducting these interviews has provided some very interesting details on general work perceptions with areas under consideration in these interviews. In line with the same the authors found that interviewees generally were quite motivated to achieve their goals according to their own perception. The work environment was quite good and everyone had the liberty and freedom to express their thoughts. The authors noticed to a great extent they were applying tools and methods that matched with the lean philosophy moreover trying to develop the environment in which Lean could be accommodated was quite appreciable. The authors also noted that the attitude to promote the culture of improvements is there that is quite good, and it shall keep Skatteverket on the path of continuous improvement.

Further to this the authors shall also try to include some areas that can be considered for further study, simplification and improvement.

An impression existed that the general goals of Skatteverket and their importance were mitigated to the actual staff that work on audit projects to a very little amount. Visual Management can be improved to a certain extent with having consideration of the way SK 7 (which is using the Pulse room) works and this process can be further simplified and improved. This process is quite good as it also promotes the idea of continuous improvement. It was also noted that a common standardized way of working should exist within all the auditing offices with best practices being highlighted and lastly there should exist a system that gives strong support to continuous improvement so that ideas and motivation of the employees can be enhanced continuously.
III. PROJECTS

Based on these observations, the authors came up with suggestions of improvements by developing three main projects:

- 1\textsuperscript{st} Project: Customer Portal
- 2\textsuperscript{nd} Project: Administrative process for obtaining a diary number
- 3\textsuperscript{rd} Project: Improvement of Pulse Room

PROJECT 1: CUSTOMER PORTAL

\textit{Introduction}

Satisfying the customer is the main goal of each service organization. Making Customer and Auditor being closer to each other and participate mutually in an auditing function can serve the general goals of Skatteverket and also make the auditors realize how to focus on their long term goals while making their short term goals meaningful and optimizing them.

These ideas can be summarized with a system that effectively deals with the auditor and customer interaction.

\textit{Lean’s Focus}

Lean approach supports visual management. Display the instructions, the progress of the process in a very simple and concise way is a root idea of Lean. This helps to have a clear picture of what is happening, cutting out the unnecessary information. In addition, it helps bringing possible problems to the surface and the possibility to act in a quicker way to solve them also like other business management practices lean’s ultimate focus is to mould the thinking of the organization the way customer wants it. Reaching out to the customer as a part of the whole auditing exercise can make it feel part of the process itself. Having a viable system that can make the customer visualize the progress of the audit process can greatly increase the interest of its responsibilities towards Skatteverket. Lean also implies having a mechanism by which the customer can give valuable inputs, the way it perceives its audit was carried out. In short having a credible customer perspective after the audit has been completed. The best way to achieve this is to have a mechanism of feedback from the customer after the audit has been completed. This makes room for continuous improvement.
**Compliance with Skatteverket’s Goals**

In the past few years, Skatteverket has focused its action on being a customer oriented service, putting the taxpayer in the centre of its interest. Implementing such a tool meets this requirement. Indeed, customer has a direct access to the progress of the audit, easily reachable online i.e. from anywhere, anytime. This will make him more involved in the audit process and smooth up the possibility to give feedback and keep more updated about the audit.

In addition, this complies with the strategy of being an open and collaborative eGovernement, providing the opportunity to people to directly interact online with Skatteverket. It would make Skatteverket move towards being the best in O.E.C.D. (Organization for Economic Co-operation and Development)

**O.E.C.D., Skatteverket and Customer Portal**

One of the goals of Skatteverket is to be the best in O.E.C.D. For Skatteverket to achieve this, it has to have the customer focus the way O.E.C.D. lays out for it. O.E.C.D. lays great emphasis on the creation of a system that makes the customer and auditor enter in to a relationship. It marks certain practices like educating the taxpayer, having a clear communication strategy with the taxpayer, giving some levels of details by having a public domain on interaction with the customer, Improving peoples general knowledge about tax issues can only take place by having a system that translates these goals in to meaningful usage. A system that is online and is somehow catering to the above demands can greatly increase the confidence of the taxpayer actually being audited. Furthermore goals like having increased support for complaint taxpayers and having an increased compliance among taxpayers that are having trouble with their tax obligations can also be catered for.

**Observations**

During the course of the author’s interactions with various functionaries at Skatteverket, a viewpoint on certain issues was established. There are no hard and fast rules how they could be addressed to a certain extent. The details of these issues and their relation to customer portal is explained below.

**Contribution from businesses:**

While performing interviews to auditors, many of them underlined that the delay caused by an audit is very often due to the fact that audited businesses take longer time to reply to questionnaires.
A legal time before force actions can be taken is defined by law but a spread habit is to let more time to the audited business to reply to it. This is good as Skatteverket has to be helpful towards its customers but at the same time there is room for improvement here. Indeed, in some cases it became like a habit to extend this period even if it is not completely justified.

As a result, an idea is to send an automatic reminder to the audited business when this deadline approaches. Indeed, auditors don’t always have time or send manually such a reminder on time so it will ease their work.

Let’s say it has two weeks two reply. After 10 days, an automatic reminder can be sent stating what has to be done and reminding about the possible force actions which can be taken in case they don’t meet the deadline.

Contact:

Keeping up with the details of those who perform audits and those who are being audited is tricky. During the course of interviews, the project group found out that some customers want to participate fully but feel hesitant to update Skatteverket on their activities and the most probable reason for this is the lack of interaction or willingness of the customer to communicate with the auditor directly or whom does the customer interact with if there are some confusions about the queries sent out to it by Skatteverket. The idea here is to have a direct medium where the customer can see the auditors email addresses and phone numbers, this is a confidence building measure where customer has easy access to the contact details of the people auditing it. This will boost the confidence of the customer and make him interact with the personnel on that particular audit and to curtail the hesitation of customer towards Customer-Auditor interaction that can mutually benefit both the customer and auditor.

In short there should be a platform that can convey the contact of the auditor, i.e. his mail and phone number. Now these information are already provided to the audited business, the idea here is to make it easily accessible, whenever, wherever.

Progress:

The audited business will check the progress of the audit at the same time and his duties, making the whole process more visible.

Feedback:

It was noticed that during the course of the audit, the audited business has hardly a chance to give feedback about the way the audit is performed in a structured way. Of course, feedback can be directly reported to the auditor but it is seldom brought higher up. Even in case of economic crimes when people consciously do not pay their taxes, feedback is fruitful and relevant to understand better the way Skatteverket and the audit is perceived.
This follows the Lean philosophy in the sense that feedback is the ground of continuous improvement: identifying the areas of improvement is the first step to actually do it better.

**The Proposed system**

This proposed system aims at providing to the customer an online platform where he can have access to the information connected to his ongoing audit. The progress of the audit will be roughly shown, as well as contact information of the auditor and other ways to interact directly with Skatteverket.

The idea behind it is to put in place different tools helping to achieve Skatteverket’s goals, making it simpler for the audited businesses to do right themselves [14].

The salient features of this system would be the following:

**User Authentication:**

A customer being audited should have a specific authenticated user Identification and password on this online system.

**Basic Introduction of Audit:**

Basic Introduction about the audit, what is the purpose of the audit, what is expected of the customer during the course of the audit and some expected time when the audit is going to be completed.

**Contact Details:**

Contact details of the auditors, emails and phone numbers available for the customer to know who the auditors are and how can he reach them in case he needs some clarifications or Information.

**Visible Progress:**

Progress of the audit can be viewed. Some basic steps in the audit related to the customer only. A mechanism that shows that Skatteverket is still working on his audit. It can be Collection of Information, Investigation, Decision.

**Mutual Correspondences:**

This system can make the customer being audited view the series of correspondences or Request for Information sent out by Skatteverket. It can also
show him the replies received and deadlines to reply. Additionally from this system the customer can get automatic mail reminders on the deadlines for replying to the queries of Skatteverket.

**Feedback Mechanism:**

Finally this system should allow the customer to give a feedback when the audit is finally completed.

A draft of how this customer portal could like is given by Figure 3. The authors did not focus on the IT part of it (i.e. how the coding is done) but rather on the services it can propose and the visual appearance of it. The layout of Skatteverket website was taken as a template.
Five main services are provided on this portal:
- Correspondence
- Progress of the audit
- Contact details
- General information about the audit
- Frequently Asked Questions

The details about how to reach the customer portal and thorough description of each service is given in Appendix 2.
PROJECT 2: ADMINISTRATIVE PROCESS FOR OBTAINING DIARY NUMBER

Introduction

An issue concerning majority of the interviewees was the process by which they obtain a diary number from the administration department V. E., to initiate the audit process. According to the interviewees it was the sheer stress of getting the diary number that made them feel lack of motivation to continue from the start.

This project consists of:
- Investigation the complete process
- Propose improvements based on Lean approach
- Use Value Stream Mapping (V.S.M.) as a tool

Investigation

Further to the above discussion it was decided to investigate in detail how Lean can help resolve this issue. The strategy was simple in this to understand the system better creation of a detailed process flow diagram of the procedure to obtain a diary number from the V.E. right from the start when the go ahead is given to proceed with the audit by sending the decision ‘Beslut Om Revision ’ to the customer. After knowing thoroughly the way the current procedure worked the Value Stream Mapping (V.S.M.) was used. [15].

Value Stream Mapping:

In the case of the improvement strategy, it is quite important to make the readers realize the basics of Value Stream Mapping and Value Stream perspective, that says working on the big picture, not just individual processes, and improving the process as a whole, not just optimizing the parts. Concentrating on Value Addition, things that add value and removing wastes, things that do not add value.

The basics of Value Stream Mapping is a pencil and paper tool that helps you to see and understand the flow of material and information as a product makes its way through the value stream. The meaning is simple: Follow the V.E. process from the perspective of Audit office for obtaining a diary number till the decision is sent to the customer, and carefully draw a visual representation of every process in the material and information flow. Then ask a set of key questions and draw a "future state" map of how value should flow.
This process in case of Skatteverket it is to physically map the "current state" while also focusing on where it want to be, or "future state" blueprint, which can serve as the foundation for other Lean improvement processes within the processes efficiency and goal formulation and bringing a cohesion of visualizing goals right from the start through these little improvements.

In line with the same, one process flow chart and one V.S. M. for the current state and similarly two versions of the future states process flow charts and V.S.M. Namely Improvement Version 1 and Improvement Version 2 were developed. The description of these is given below along with the references to the actual processes flows and Value Stream Maps for current and future states.

**Current Process Flow diagram (see Fig.4)**

Before proceeding further, let’s define three key players in this process:
- **V.E.**: This is the name given to the administrative department which provides the diary number to start an audit
- **Document 6187**: Administrative form filled in by the auditor to the administrative department. This is the kick-off of the process
- **Document “Beslut om revision”**: Literally “Decision of Audit”. This is the document delivered by the administrative department V.E.

The authors distributed the process according to the process owners, three types of roles are actually involved in this V.E. process of obtaining the diary number i.e. the Auditor, the Manager and V.E. Personnel, the Manager and the Auditor being from the same department.

The process starts off with the Auditor filling in the details of the audit plan in an administrative form called “Document 6187”. After filling in the necessary details he takes these documents with the Manager for review and signature. Now the manager after reviewing the said documents would take a decision to sign the documents if the documents details are correct and without visible irregularities, he/she would sign it and return it back to the auditor if otherwise the documents will be returned to the auditor again. The auditor will take these forms to the mailbox of the V.E. and drop them there for their processing. V.E. returns with the decision document called ‘Beslut Om Revision’, and drops it back to the Managers Mailbox this document contains the diary number that was originally requested. The manager signs two copies, one copy goes to the audit file and the other one is mailed to the customer that brings this process to an end.
General Description: Obtaining a Diary Number for Auditing

Actors: Auditor, Section Manager, V.E.

Fig. 4. Current State Process Flow
Views

As you see from the explanation and the figure, there are certain areas within this process that are not very encouraging. In most of the process flow the mode to transfer the documents is by hand. Manager gets involved in the beginning and towards the end of the process nearly for the same task of signing and reviewing; in this case from the perspective of the auditor he/she always has to wait for the availability of the manager. Then he/she has to run down two floors to actually drop documents at the mailbox of the V.E. and then the auditor has to wait for manager’s next availability when V.E. drops the decision document (‘Beslut Om Revision’) in his/her mailbox to which he/she has to physically walk, collect, sign and hand it over to the auditor who mails this letter to the customer.

There exists quite a lot of physical movement and posting of documents, the auditor is at the availability of the Manager. When initial review has to be carried out some times the manager might not be available other times he/she can be busy in some other work and might not have time to review. The second issue is the physical transfer of documents from audit office to V.E. and from V.E. back to the audit office itself. All these they cause delays which seem quite less if you see the total time for the audit to be completed but this alone has enough stress on the auditor specifically.

The motivation to achieve goals set out by the management is affected from the start of his assignment. In order to further elaborate it, the authors went for a complete Value Stream Mapping of the current state. This was necessarily done to depict the occurrence of wastes and the value added time for each process. It is important to mention here the timings are supposed both in current and future state maps and based on rough estimates while personally interacting with auditor and audit leaders during the course of the interviews and afterwards. There can be anomalies in time allocation for future state maps especially when checking on availability of the manager to receive and sign certain documents. They can be adjusted at a later stage in the process of their final implementation.

Current State Value Stream Map (see Fig. 5)

Considering the Current State Map, one can see that the supplier that initiates the process is generally the audit leader. Audit leader’s duty is to review the cases handed out by the manager and go for the audit. She/he guides or directs the auditor to start of the process of getting the diary number. And the process ends at sending the Audit Decision to the customer who in this case is the entity being audited. There are two basic measures with time, a cycle time or value added time as explained earlier and the waiting time. Keeping in view of the estimates and the information gotten from the basic process flow, the authors came up with 5 basic process areas. These are

1. Filling details: In this the auditor fills in the details in form 6187 that acts as a formal request to V.E. for getting a diary number and from V.E. This also includes filling in the details of the audit plan and it takes about 1 hour
Fig. 5. Current State Value Stream Map

Legend:
- Push
- Time Line
- Internal Entity
- External Entity
- Process & Cycle Time
- T.C.T. = Total Cycle Time
- T.W.T. = Total Waiting Time

T.C.T. = 1+2+6+0.1+0.2 = 9.3 Hrs
T.W.T. = 8+2+2+0.2 = 12.2 Hrs
2. Manager Review and Sign: Manager reviews the audit plan and form 6187, after going through all the details the manager has to sign the audit plan as well as the form 6187. It takes about 2 hours.

3. V.E. Process: This is the process outside the audit department. The input to this process is the signed form 6187, and the output is ‘Beslut Om Revision’ (Audit Decision). It takes about 6 hours for the V.E. to finish this process.

4. Manager Sign: Manager signs two copies of ‘Beslut Om Revision’ (Audit Decision). This takes Approximately 0.1 hours.

5. Auditor Distributes: The Auditor files one copy originally signed by the manager and the other is sent out to the Customer. This takes about 0.2 hours.

This makes the Total Cycle Time (T.C.T.) of the processes to be approximately 9.5 hours.

In this current state there are basic waiting times as well. This is the time where one process has to wait till the required information has been received to start the next process.

1. The time auditor is waiting to submit form 6187 and audit plan to the manager to submit and sign both these forms. Normally it depends on the availability of the manager and this time varies but the authors have put an estimated time of 8 hours for this waiting. This is not the exact time but in most cases it is 8 hours as per out findings. As the manager might be away in most cases on a meeting, a conference, official work concerning other areas of the department.

2. Time when the auditor has to physically take the document 6187 from the manager’s desk and drop it to the mail box of the V.E. two floors down. This takes about 0.2 hours at the most but this is an area of concern as it keeps the auditor waiting first from the managers end as to when is she/he getting the signed forms and the other is to physically walk down and drop the forms in the V.E. mailbox.

3. Time when V.E. drops the copies of ‘Beslut Om Revision’ back to the manager’s mail box before he signs them. This is of particular concern as again the signature of manager depends on his availability and for the auditor that is anxiously waiting to concentrate on his assigned goals since he needs to send the Audit decision to the customer. It is estimated to be 2 hours as the authors think the manager is a bit aware of it as he is already signed the audit plan and wants’ his auditor to start work as soon as he can.

4. The time when Manager signs the audit decision and wants to hand over the signed documents. The project group estimated this time to be approximately
0.2 hours, again this time can vary but the average case is taken into account here.

This makes the Total Waiting Time (T.W.T.) of the processes to be approximately 12.2 hours.

**Proposed Improvements**

In order to improve the process to obtain a diary number, the authors have come up with two versions of future states. Similarly, the current state was drawn first and then, a general process flow diagram was made to check the flow of information and key processes and then to make a Value Stream Mapping or a Future State Map. The basic theme of improvement being the following criterion.

- Make One Move One.
- Elimination of Wastes (Waiting Time)
- Focus on Value adding processes.
- Improve quality within the processes and eliminate quality control outside the processes.

*Improvement Version1:*

**Future State Process Flow version 1 (see Appendix 3)**

The start of the process is the same by which the auditor fills in the details of document 6187 and Audit Plan. The auditor then mails the V.E. putting the Manager in the CC. The V.E. receives this attached mailed document and goes about its normal routine to prepare for ‘Beslut Om Revision’ the audit decision which the Manager applies a digital signature and forwards it to the Auditor for distribution. In this process flow initially the role of the manager was to know that an audit is going to be conducted and second was that he checks for anomalies within the filling of the document. As both these functions are done with the mutual consent of the audit leader who is experienced enough to make the auditor do it correct the first time. So that quality check is reduced with in this process second is the information so being in the CC of the mail to V.E. will give him automatically the knowledge that this event has taken place and he has to be ready to sign the Beslut Om Revision or audit decision in some time so accordingly he can make himself available in some point of time. The other part is the two and for posting of documents from V.E.’s mailbox back to managers mailbox can be avoided and the waiting time can be reduced manifold. A clear representation of processes can be seen in the Appendix 3.
Future State Value Stream Mapping version 1 (see Fig. 6)

In this future state V.S.M, there are four basic processes that add value. They are Fill Details, V.E. process, Review & Sign and distribute. Most of the waiting times have been eliminated by introducing the emails instead of physical posting of documents and digital signatures from the side of the manager. The authors have also tried to improve the processes from within and eliminated a quality process that made the manager to review and sign the documents 6187 and audit plan before it is sent to V.E. for allotment of diary number and instead made the audit leader responsible for checking the documents side by side with the auditor when he is filling in the documents if he/she is new. Once the auditor does the same process two or three times he will not require direct supervision from the audit leader to check the details filled.

From Figure 6, The Future State Map clearly shows the Total Cycle Time (T.C.T) to be approximately 7.5 hours from 9.3 hours and Total Waiting Time (T.W.T.) to be 0.4 hours from 12.2 hours.

Improvement Version 2:

Future State Process Flow version 2 (see Appendix 4)

The second proposed improvement is based on the procedure changeover the improvement version 1 was to transform the system to a future state without changing the basic structure of the process flow. It was an attempt to improve the current system by keeping the same structure of reporting. In the improvement version 2, the authors start off with the auditor directly emailing the Administration Department V.E. requesting for a diary number.

Once this email is sent in which the manager is in CC, the next step is to fill the audit plan till the time the auditor receives the diary number from V.E. Once the Diary Number is received the auditor can directly fill in the ‘Beslut Om Revision’ Audit decision, the next step is to hand over the audit plan and Audit decision to the Manager get his/her signatures and finally distribute the copies. Now this can be done in two ways either email the manager these documents or take them by hand. In the latter case the Manager can just use his digital signature to put initials and signature on the audit decision and approval of the audit plan and then send these documents to the auditor by email, so that the auditor just prints out these documents and distributes them as required.

The second option is that the auditor prints out two copies of the audit decision with the audit plan, leave it at the desk of the manager, gets the signatures and then distributes them as required. The authors believe that the first option is a lot better and they have worked on this with the V.S.M. as well. The design of this process flow can be viewed in Appendix 4.
Fig. 6. Value Stream Mapping Future State Improvement Version 1

Legend:
- **Push**
- **Time Line**
- **External Entity**
- **Waiting Time to Receive Information**
- **Process & Cycle Time**
- **Electronic Data Interchange**

Legend:
- T.C.T. = Total Cycle Time
- T.W.T. = Total Waiting Time
Future State Value Stream Mapping version 2 (see Fig. 7)

In the future state map of improvement version 2, 5 basic processes have been taken. They are: “Sending a Request” for obtaining a diary number from V.E. till the time this request is being processed “Auditor Fills” in the required forms. “Preparing the Audit Decision” or ‘Beslut Om Revision’. Manager’s “Review and Sign” on the copies of Audit Plan, and ‘Beslut Om Revision’ and then finally the auditor distributing these forms to the concerned. Making use of emails and digital signatures within the processes. Considering the V.S.M. and time estimates, this Future State Map (Figure 7) clearly shows the Total Cycle Time (T.C.T) to be approximately 6 hours from 9.3 hours and Total Waiting Time (T.W.T.) to be 1.5 hours from 12.2 hours.

Conclusion

Improvements suggestions are summarized in the following table.

<table>
<thead>
<tr>
<th>Table 3. Benefits of improvements in the diary process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT STATE</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
</tbody>
</table>
| Changes | NA | - Digital signature  
- Remove quality check |
| Total Waiting Time | ≈ 13 Hrs | ≈ 2 Hrs | ≈ 2 Hrs |
| Total Cycle Time | ≈ 10 Hrs | ≈ 8 Hrs | ≈ 6 Hrs |

By introducing small improvements using basic lean philosophy one can achieve a lot of efficiency considering the reduction of waiting times called wastes, focus on value added times within the processes and elimination of quality checks as separate processes, bringing quality within the processes itself. Furthermore the authors have tried to bring the control of the auditor within this process, taking lead in all the procedure rather than his work being on the availability of stakeholders who are not directly part of the process. The authors also underlined the fact that small improvements within the system can be a lot better than making major changes.

This is a concrete and direct application of Lean thinking. Indeed, some auditors are skeptical towards Lean approach, considering that this thinking is imported from manufacturing and can’t be applied to their work. By showing a direct benefit, it will make easier the assimilation of Lean philosophy, hopefully leading to further improvements.

In addition, this kind of project can be carried out on other processes of the audit as well, initiating continuous improvement.
Fig. 7. Value Stream Mapping Future State Improvement Version 2

Legend:
- **Push**
- **Time Line**
- **Internal Entity**
- **External Entity**
- **Process & Cycle Time**
- **T.C.T.** = Total Cycle Time
- **T.W.T.** = Total Waiting Time
- **Electronic Data Interchange**
- **R** Waiting Time to Receive Information

Requirements Diary No. C.T. = 2 Hr
Fill Details C.T. = 1 Hr
Generate B.O.R. C.T. = 0.5 Hr
Review & Sign C.T. = 2 Hr
Distribute C.T. = 0.2 Hr

2 Hr 0.1 Hr 1 Hr 1 Hr 0.5 Hr 0.5 Hr 2 Hr 0.2 Hr 0.2 Hr
PROJECT 3: IMPROVEMENT OF PULSE ROOM

Introduction

Examining the Pulse Room was another area that was offering a challenge. During the interviews with the Auditors of Audit Office 7 “Skattekontor 7”, the authors found some mixed reaction on having a Pulse Room. This sounded interesting as previously the authors had studied about such a system existing within the manufacturing industry to streamline the status and reporting of activities making use of a visual interface.

The proposed improvements are divided into two categories:
- **Material factors**: factors which depend on people
- **Personal factors**: factors which depend on tools

The authors summarized their findings which are explained as under.

Pulse Room Description

A Pulse room (Fig. 8) consists of a normal meeting room with a board used to "pulse" or check the progress of certain projects.

In this case, the Pulse meeting gathers people involved in the same kind of audit projects, and they give a quick update of their work by marking it with a colored dot. Three colors are available: red, yellow and green. Auditors assign to each audit they are responsible of one of these colors according to the planning of their work they have done the previous week. For example, if auditor X had planned to work 10 hours on audit A and he actually did it, audit A turns to green. If he spent a bit more time than planned but no critical problem has been found, it turned yellow and if a major problem is faced, then it turns red.

These meetings happen every Friday morning and last for about one hour. They are held by the Section Manager. Four teams of about 5 auditors come ones after the others to update the Pulse board.
Figure 9 gives a better idea of how the Pulse board looks like. Letters in rows correspond to the different audits and columns to the different teams. On the bottom of the board, the personal wellness of each auditor is also assessed but it will be disregarded in this study.
Positives

- The ‘Pulse’ provides the Auditors with a great opportunity to plan for weekly upcoming activities and goes a long way in making goals visible both individually and collectively.

- It makes the status of various ongoing audits visible to all stakeholders within the department. So there is a sense of sharing knowledge and an opportunity to learn from experiences on issues that can be common for different audit assignments.

- The section manager has an overall picture of the working of the department and gets and relates valuable feedback on different issues that can be potentially non value adding.

- A very important factor that was realized, the teams could identify problems that can be there in advance and since the manager is present he is also in the loop on taking necessary precautions on upcoming potential risks or challenges.

- The exercise on pulsing is carried out in teams of 5 within the dispensation of audit leader and auditors so it gives the opportunity of being together in a team and it also brings them socially in touch with each other, which is quite good for a healthy office environment.

Challenges

There were a lot of good aspects about the Pulse Room, having said that the authors also observed some things that can pose as challenges. The Authors divided the challenges into two types’ namely personal factors, focusing on the attributes concerning the attendees of the pulse meeting and material factors that depict the implementation of the visual indices available within the Pulse Room focusing on the color schematics and their implementation. The Authors incorporated all this information in a table that gives an idea of proposed improvements with each factor under consideration. The authors believe this can act as a standard for current and future ‘Pulse’ Users.
Material Factors

Here are the analysis and the proposed improvements on factors which depend on the tools of the “Pulse” meetings.

Color definition

Criteria for assessing a green, yellow or red dot are not clear enough, leading to a variation of judgments among people. These colors are sometimes perceived as a way to judge the performance of the auditors, which creates reluctance to the very idea of using Pulse. In addition, in the case of a red dot, no real further action is taken most of the times, inhibiting the possibility of improvement.

In the following table, guidelines for the assessment of colors are suggested. The authors also would like to put the stress on the fact that red dots should be supported as a great chance to make an improvement.

When having a red dot, a discussion between the attendees of the meetings should be opened and an action plan of solving the situation should be set. If the problem can’t be solved right away, the manager (leader of the meeting) should take notice of it and come back to the problem with the concerned persons after the meeting.

Pulsing dimensions

It is important to know exactly what auditors should pulse on. At the moment, auditors are supposed to only assess if they have fulfilled the planning they have done for the week. However, the authors noticed that in reality, participants of Pulse meetings are a bit confused and include also the overall progress of the audit itself. This generates again some variation of judgment and a feeling of disorder when having these Pulse meetings.

A possible improvement is to clearly pulse on these two separate dimensions: fulfillment of the planned weekly schedule on the one hand and overall progress of the audit on the other hand. The former will be done with usual color dots the auditors are already familiar with.

The status of previous week shall be deleted as it is not being used and to simplify things the latter will be assessed by a counter measuring how many times the audit plan is revised. This counter can be used as follows: anytime the deadline of an audit is extended, +1 is added to the counter. Thus, the higher number the counter displays, the more urgent the audit is. This will help prioritization of the work.
**Personal Factors**

Here are the analysis and the proposed improvements on factors which depend on people themselves.

**Time**

Often pulse meetings have to be really precise and to the point so maximum amount of communication can take place in minimum possible time. Generally pulse meetings range from 10 to 15 minutes. This time bar makes the participants to say only what is necessary and avoid details, just to give an overview and this time relates to color definition as well. The authors observed that it took a bit longer than 10 to 15 minutes in some cases the meeting lasted for more than 45 minutes.

**Attendance**

This issue can be addressed by the participation of the team fully. As was observed that some members were not always there for the attendance, this can be a challenge but the issue has to be addressed and full participation of team members should be there.

**Proposed Improvements**

After attending many of these Pulse meetings and discussing with their different stakeholders the authors came up with some ideas to improve them, focusing on the value-adding parts and what really makes sense.

In line with Lean’s philosophy [16], author’s suggestions are rather easy to implement and build up on the foundations of what have been already developed. This ensures a better acceptance of the changes and introduces the continuous improvement state of mind within the team.

Solutions are gathered in the following Table 3.
Table 3. Proposed improvements for Pulse meetings

<table>
<thead>
<tr>
<th>Challenges with room for improvement</th>
<th>Description of current situation</th>
<th>Suggested improvement</th>
</tr>
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<tbody>
<tr>
<td><strong>Material Factors</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Color definition:</strong></td>
<td>• Guidelines for defining colors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Action taken if red dot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Red dots mean for improvement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Time spent on green dots</td>
<td></td>
</tr>
<tr>
<td><strong>Pulsing dimensions</strong></td>
<td>• Pulsing on planning, progress</td>
<td>• Counter for progress starting from +1 if audit plan</td>
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<tr>
<td></td>
<td>• both</td>
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<tr>
<td></td>
<td>• Features I.B. not used anymore</td>
<td></td>
</tr>
<tr>
<td><strong>Green:</strong></td>
<td>• No delay at all or exactly</td>
<td>• Pulsing on color</td>
</tr>
<tr>
<td></td>
<td>according to plan.</td>
<td>strictly for planning</td>
</tr>
<tr>
<td></td>
<td><strong>Yellow :</strong></td>
<td>only.</td>
</tr>
<tr>
<td></td>
<td>• At least half of the Plan has</td>
<td>• Removal of last</td>
</tr>
<tr>
<td></td>
<td>been executed.</td>
<td>week status and</td>
</tr>
<tr>
<td></td>
<td><strong>Red :</strong></td>
<td>replacing it with</td>
</tr>
<tr>
<td></td>
<td>• Less than half of the plan has</td>
<td>the counter.</td>
</tr>
<tr>
<td></td>
<td>been completed.</td>
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</tr>
<tr>
<td></td>
<td>• Should lead to further</td>
<td></td>
</tr>
<tr>
<td></td>
<td>discussion and action.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Red dot a chance to improve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>rather than</td>
<td></td>
</tr>
<tr>
<td></td>
<td>assessment of performance.</td>
<td></td>
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<tr>
<td><strong>Personal Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>• Meeting 15 to 40 minutes per</td>
<td>• Concise meeting</td>
</tr>
<tr>
<td></td>
<td>team</td>
<td>within 15 minutes at</td>
</tr>
<tr>
<td></td>
<td>• Time frame</td>
<td>maximum.</td>
</tr>
<tr>
<td></td>
<td>• Set a clear Time frame for each</td>
<td></td>
</tr>
<tr>
<td></td>
<td>group to present and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>finish within allotted time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If green dots no further</td>
<td></td>
</tr>
<tr>
<td></td>
<td>discussion.</td>
<td></td>
</tr>
<tr>
<td><strong>Attendance</strong></td>
<td>• Team attendance</td>
<td>• Attendance for all</td>
</tr>
<tr>
<td></td>
<td>• Grouping of Teams</td>
<td>should be mandatory.</td>
</tr>
<tr>
<td></td>
<td>• Making the total meetings to</td>
<td>• At least two teams</td>
</tr>
<tr>
<td></td>
<td>two sessions instead of</td>
<td>should attend at the</td>
</tr>
<tr>
<td></td>
<td>four per day.</td>
<td>same time.</td>
</tr>
<tr>
<td></td>
<td>• Problems and Improvements</td>
<td>• Making the total</td>
</tr>
<tr>
<td></td>
<td>should be shared.</td>
<td>meetings to two</td>
</tr>
<tr>
<td></td>
<td>• Switching of timing for</td>
<td>sessions instead of</td>
</tr>
<tr>
<td></td>
<td>different team after some</td>
<td>four per day.</td>
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<tr>
<td></td>
<td>interval of time.</td>
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Implementation Plan for Improvements in Pulse Room:

Approach

As Lean is a continuous improvement technique, every improvement in a system will have the same routine of tasks to be carried out to create a lean environment. The project deployment is inspired by problem-solving tools such as the Plan-Do-Check-Act (PDCA) cycle of improvement or the Define-Measure-Analyse-Improve-Control (DMAIC) method from the 6-sigma methodology [17].

The PDCA execution model (Fig. 8) steps are

**Plan:**

Plan a change and its test to determine if a process modification is beneficial.

**Do:**

Implement the change and its test on a small scale.

**Check or study:**

Assess the test results to determine what was learned. Describe what went right, what went wrong, and how well the change worked.

**Act:**

Determine whether to adopt the change, abandon the change, or repeat the Plan-Do-Check-Act cycle. A termination decision is appropriate when no significant value is anticipated through the execution of additional Plan-Do-Check-Act cycles. It can be appropriate to either abort or repeat the Plan-Do-Check-Act cycle when the evaluated change would create adherence issues or no/minimal improvements were observed. A repeat of the Plan-Do-Check-Act cycle would be appropriate when the amount of improvement was not as much as desired but additional change enhancements opportunities have been identified. When objectives are met, the process needs to be standardized.

The power of Plan-Do-Check-Act is in its apparent simplicity and inductive logic utilization. While being relatively easy to understand, it can be difficult to accomplish on a on-going basis due to the analytical difficulty in judging tested hypotheses on the basis of measured result.
Implementation

The implementation of the improvement plan for Pulse can be carried out in two phases keeping in view the material and personal factors stated and documented with reference to “Table 3 Proposed Improvements for Pulse Meetings”. The plan has been devised to be in two phases. Phase one will have an introduction seminar and phase two will use Plan-Do-Check-Act technique to improve.

Introduction Seminar

The introduction seminar will be for all the participants who are attending the pulse meeting, where the manager will present the findings in “Table 3 Proposed Improvements for Pulse Meetings”. A discussion and general agreement should be achieved if the things highlighted are actually the weak points that need to be improved or there are some other things as well that demand attention and need to be changed. A detailed account of both material and personal factors should be communicated and their importance to achieving improvement understood. An information session should be held on what does Plan-Do-Check-Act cycle mean and how will it be implemented with respect to the Pulse room improvement phase.
Application with Plan-Do-Check-Act

First Plan-Do-Check-Act cycle

- The first Plan-Do-Check-Act cycle should include two changes one from material factors and one form personal factors.
- The Manager and Team Leaders will act as mentors for these two factors.
- In first phase they will take **Color Definition** and **Attendance**.
- Apply the Plan-Do-Check-Act cycle and let it continue for enough weeks so that the participants are fully aware of the changes made and comfortable in adopting them.
- At the end if most of the participants agree to the changes and the system runs smooth make the changes permanent.

Second Plan-Do-Check-Act cycle:

- The second Plan-Do-Check-Act cycle should include two more changes one from material factors and one form personal factors.
- The Manager and Team Leaders will act as mentors for these two factors.
- In second phase they will take **Pulsing Dimensions** and **Time Management**.
- Apply the Plan-Do-Check-Act cycle and let it continue for enough weeks so that the participants are fully aware of the changes made and comfortable in adopting them.
- At the end if most of the participants agree to the changes and the system runs smooth make the changes permanent.
CONCLUSION

Lean Implementation, in a governmental company, a philosophy coming from car industry is a real challenge. The Authors would like hereby to give notice of their optimism regarding this task. Indeed, they found good grounds and foundations for it to succeed.

Most of employees were enthusiastic, interested or at least curious about the thesis work. This shows open-mindedness which is essential for implementing changes. On top of that, many of them already had ideas of improvements or were already carrying out their own projects, but at a small scale.

The core of the work consisted in gathering these good ideas, add expertise to it and convert them into concrete projects that are easy to handle and which show direct benefits for both the customer and Skatteverket’s employees. The approach was led by Lean philosophy, trying to reduce waste, focusing on value-adding steps and implementing tools supporting continuous improvement.

The mission specified to develop “visual goals and metrics for various auditing projects”.

The first project, the customer portal, is a user-friendly platform gathering all relevant information and showing progress of the on-going audits, both to the customer and the Skatteverket’s auditors.

Then, by analyzing a concrete sub-process using Lean tools, the authors proved how Lean philosophy can help to streamline and smooth up non-industrial processes.

Finally, in project three, the authors focused on the Pulse meetings and simplified it, concentrating on relevant information. As a result, the long term-goals appeared more connected with everyday working issues of employees.

The success of theses projects’ implementation greatly depends on the support they will get in Skatteverket. Moreover, their goals have to be clearly explained so that everyone can assume ownership of it. Indeed, moving towards a Lean environment takes very long time and meets reluctance and interrogations. Even in Lean world class companies, it takes decades to reach a satisfactory maturity level.

In the authors opinion one of the main benefits of this work is to make people question themselves about their work: “Why am I doing it this way? Is this step really adding value to the process?” It is believed that they are experts of auditing and are in the best position to find improvements to their work.

Being not familiar with Tax Office environment could be seen as a disadvantage but it was considered it as strength. Of course, the knowledge was limited about audit processes and it took quite some time to get acquainted with the vocabulary, the people and the process.
But at the same time, it was a wonderful asset as the authors could give a brand new vision on their work. Belonging to other countries and cultures really helped to approach the challenges from a different angle. As Skatteverket’s customers are really diverse too, thinking this melting-pot was beneficial to the work.

A limitation of this work is the timeframe the authors had for their Thesis. Indeed, the projects developed are suggestions of Lean tools to improve Skatteverket Tax Audit process. However, five months is too short to proceed to the next step, the implementation. But the authors tried to give all the information on-hands so that this could be done by other parties.

In addition, scope of studies was a little bit too wide at the beginning and the authors had to reduce it a bit during the course of the thesis in order to focus on the most benefiting parts for Skatteverket’s customer and employees. As a result, the projects can directly and concretely be implemented.

As a new multi-annual plan has to be defined by Skatteverket after 2012, the authors feel it is a very good opportunity to continue and develop further projects connected to Lean.

A special attention should be given to explaining the benefits of Lean, its philosophy and what it can lead too. Indeed, much reluctance was faced because of a lack of pedagogy, presenting the concept before implementing it. Help from Lean experts consultants could be generalized to a lower level, so that everyone can feel involved in this process.

Lastly, being the first Tax Agency using Lean approach to improve its Tax Audit Process, Skatteverket ensures being a state-of-the-art service organization. Thus, it stacks the odds in its favour to be the leading Tax Agency in O.E.C.D.
REFERENCES


APPENDICES

Appendix 1 – Questionnaire for interviews

This document is private and confidential and none of the personal data or identity of the interviewees will be disclosed.

1) What is your position in Skatteverket?

2) What is your work description?

3) Is there something specific you think about besides the routine steps when you start an Audit?

4) What is your goal when you start an Audit Assignment?

5) Do you feel it matches with general goals of Skatteverket (see alternatives)? Which of the following you feel is the most applicable to your Audit goals/the least applicable?
   - A society where everyone wants to do right themselves
     - Being offensive/proactive (offensiva)
     - Being reliable (pålitliga)
     - Being helpful (hjälpsamma)
   - Citizens and businesses have confidence in Tax
   - Citizens and businesses believe our response is good

6) At what point in the audit process do your goals become relevant to your work?
   - Beginning
   - Middle
   - End

7) Who defines your objectives?

8) How do you keep a track on the progress of your Objectives corresponding to your goal?

9) Do you use any visual aids in viewing the progress of the above? (Gantt Chart, visual board, some specific software).
   - Gantt Chart
   - Visual board
   - Specific software
   - Other

10) To whom is your Audit process visible at Skatteverket?
    - Manager
    - Audit leader
    - Auditors
    - Other
11) Do you feel visually mapping your progress will help you?

12) Do you have any suggestions for making the progress more visible?

13) Are you comfortable with the Audit standards laid out by Skatteverket?

14) Do you have the opportunity to refine or redefine an idea that can improve the Standard?

15) Is there a forum to post your idea for improvements?

16) What problems do you face during the course of auditing?

17) Any rewards or benefits that may help you achieve your goal?

18) Do you have any experience with lean approach?

19) Do you think your work can benefit from lean approach?
Appendix 2 – Customer Portal

All original files available on request.

Start page of www.skatteverket.se

This is the public webpage of Skatteverket.
Choose Revision in the drop-down menu

E-services already exist on the website. A new section, “Revision” (audit in English), is created and is easily reachable from the drop-down menu.
Log in and quick presentation of the customer portal

The logging part is already available on the website for other e-services. Businesses can log in through their bank identification number.

The structure of this page is similar to all other logging page of e-services.

After this page, comes the identification process, through the bank system.
On this welcome page, the customer has a quick overview of what is happening: reminder of what he has to do, bar of progress and overview of the 5 services provided.

5 services provided:
- Correspondence
- Progress of the audit
- Contact details
- General information about the audit
- Frequently Asked Questions

By clicking in one of the links given under these 5 services sections, he can have access at the following webpages.
Service 1 – Correspondence

On this platform, the audited business can have access to all the communication he has with Skatteverket.

A reminder about the things he can contribute to for the audit is shown. More information about possible force actions which can be taken in case of non-cooperation are reminded here in order to push him to do his part of the work, cutting possible delays in the audit.

A feedback platform is here as well. The idea is to get it on an anonymous and structured platform. Indeed, getting feedback from the audited business will be a first step to identify what can be done better in the course of the audit, leading to continuous improvement. The design of the feedback platform is not shown here as it can be adapted to both the needs of the audited business and Skatteverket.
A rough progress of the audit is shown here. The idea is to keep the audited business aware that something is happening and things are going on. This feedback is a guarantee to build a real relationship between the auditor and the business being audited.

The authors decided not to show the status of the audit more thoroughly. Indeed, after discussing with auditors themselves, it appeared that it is better not to reveal too much information about the exact progress as it could interfere with the good completion of the audit.
Here are the contact information of the assigned auditors.

So far, the contact information are already given orally. The idea is to display it here on a single platform and make it accessible whenever, wherever.
More detailed information about the audit itself. This saves time for the auditor to explain what is going to happen.

The second file is about the practical conditions of payment and consequences of the audit on a company. Many questions are usually asked about it to the auditors who on not always know exactly about it and have to search for this information for a long time.
Frequently Asked Questions

Why am I audited?

Auditing is part of the activities of Skatteverket. Every year, many businesses or individual people are being audited. Auditing consists of a control of the tax declarations and all information related to taxes. Thus, any business can potentially be audited, and the way of doing it is ruled by law, which implies that you, as a business has rights and duties towards Skatteverket.

What will happen?

A tax auditor from Skatteverket will carry out the audit in cooperation with his auditor team. He/she will be your contact person throughout the audit process. In case of any questions or queries, feel free to contact him/her. The contact details can be found on this web portal. The auditor will go thoroughly through all the files connected to taxes and check that the fair part of taxes is being paid in the right way.

What are my rights/duties towards Skatteverket?

Some of your rights:
- You have access to the documents used during the course of your audits
- Skatteverket will try to return the handed over documents as soon as possible

Some of your duties:
- To promptly provide information and documents needed for the audit
- To make your workplace accessible to the auditor and cooperate closely during your meetings

In case these duties are not achieved, force actions can be taken according to the law.

More about my rights/duties

How long will the audit take?

It is really hard to state exactly how long an audit will take. Indeed, many parameters influence it such as: type of business, complexity of the audit, willingness to cooperate with Skatteverket... But to give a rough idea, an audit takes in most cases from 3 to 10 months from the beginning to the end.

Skatteverket puts everything in place to limit the disturbances for the audited company. A full cooperation with Skatteverket will help to reduce this time.

How can I contribute to the audit?

Throughout the audit, you will be requested to provide information about your business and your taxes. Replying to questionnaires and cooperating with the auditor is a key factor for the audit to go fast and smoothly. In case of non-cooperation, force actions can be taken. More about force actions

What shall I do once the final decision is taken?

The practical information about how to whom to pay the amount of taxes stated by the final decision is given in the document "Conditions of payment after the audit", under the section "General information about the audit".

Some frequently asked questions. They have been chosen according to the experience of the auditors.
The questions/answers can of course be adapted to Skatteverket’s needs.
Appendix 3 – Futures State Process Flow Improvement version 1

General Description: Obtaining a Diary Number for Auditing

Actors: Auditor, Section Manager, V.E.

Auditor
- Audit Plan
  - Filling in the details
  - Send Email to V.E. CC to Section Manager
  - Distribute Copies to Concerned
  - END

Section Manager
- Section Manager Signs & Emails

V.E.
- Receives E-Mail from Auditor
  - Reviews
    - Yes
    - Assign Diary Number
    - Email Beslut Om Revision
    - Doc Beslut Om Revision

END
Appendix 4 – Futures State Process Flow Improvement version 2

General Description: Obtaining a Diary Number for Auditing

Actors: Auditor, Section Manager, V.E.

Auditor
- Send Email Request Diary Number CCD to Manager
- Filling in the details
- Receive Diary Number By Email
- Fill Revision Om Beslut
- Distribute Copies to Concerned
- END

Section Manager
- Section Manager Reviews & Signs Nec. Documents

V.E.
- Receives E-Mail from Auditor
- Sends Diary Number by E-Mail