Haaga-Helia
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# Using KAIZEN™ methodology to optimize process flows in an IT environment

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# Abstract

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We have all come across the results of inefficient processes. Unhappy customers, stressed colleagues, missed deadlines, and increased costs. These are just some of the problems that dysfunctional processes can create. These are issues why it's so important to improve processes continuously. Processes can be formal or just common ways of working. Formal processes (also known as procedures) are documented and have well-established steps. Informal processes are more likely to be ones that has been created by teams and organisations them self, and they may or not have been written down. Sometimes the processes are followed according to what is written and sometimes not. Often the process design does not meet the reality, or how things are conducted by people in real-life and process steps are executed as they are best seen to work. How can we improve the quality and productivity to be able to gain better value for the company?

This thesis will share insight into the KAIZEN™ methodology as one option of an standardized methodology to be used in improving overall performance of an organisation and by looking at processes and continuously developing them.

This thesis will focus on studying the process improvement activities in Company X to improve the End to End Service management lifecycle process with Company X own people and own process improvement methods. The aim of this thesis is to demonstrate how the KAIZEN™ methodology could be chosen as the one systematic way to ensure continuous improvement to improve performance part of daily operations and not as something additional or one-time effort.

Because of the study we can prove that there are areas of improvement for the Company x IT process department and commitment to the project related process improvement activities instead of having them embedded part of the daily operational tasks and as a mindset to the people working with the processes.

In conclusion the thesis will share high-level visibility into the KAIZEN™ Business system framework and some initial steps what needs to be considered when an organisation wants to consider starting to streamline, improve and standardize their way of working to improve the overall performance and quality by adapting the usage of KAIZEN™ methodology.

**Keywords**
KAIZEN™, Continuous improvement, Optimization, Process improvements, Lean, Methodology, Operational excellence

## Table of contents

# 1 Introduction

The world around is constantly changing, we need to do more with less. We need to invent more clever ways to execute different action, operations and activities and in many companies the amount of people to perform these tasks are getting less and less. People talk about automating things, about lean environments and making things more efficient. The usual pitfall of huge corporations and organizations is that they look at the financial data. Not on how to improve the overall performance and how to increase efficiency in the already existing environments or by investing in projects that would result in new way of working and improved efficiency without cutting in workforce. When changes are proposed by only looking at financial facts we end up in a treadmill. We release people to obtain quick impact on the OPEX targets, and the remaining workforce need to do more. Companies do not spend time nor money in improving the ways of working and expect that the remaining people will be able to take on additional assignments and additional work. This might result into further people leaving due to sick leaves or un-satisfaction. On the contrary the people will be able to do less, since no one can perform with high quality and top performance without readjusting or redefining the deliverables to something else than what were the expected deliverables.

There are many ways of improving the performance and to create a sustainable competitive advantage. This thesis focuses on sharing the practice of KAIZEN™ to demonstrate that there are ways to run continuous improvement activities to get the best return on capital employed without huge ongoing investments. The thesis focuses on studying the KAIZEN™ methodology and look at a specific case where KAIZEN™ was not used to improve the way of working in a certain process area. With this case study I investigated the work or effort invested in improvement activities that did not bring sustainable and long-term improvement nor the value expected even though vast number of working hours and effort was used to execute improvement work with an unstandardized process improvement method. As an outcome the thesis presents recommendations how KAIZEN™ could be taken into use in organizations or teams who want to start the journey of adapting a continuous improvement culture part of the organizations daily practices.

Each company and organization have their own ways of executing improvements. And usually these are built with time by collecting lessons learned and sharing best practices. There are many different methodologies such as Kaizen, Six Sigma, Lean, Lean Six Sigma etc. all with their own specific flavor related to process improvements, remodeling and optimization.

Today's best practices in manufacturing — from just-in-time manufacturing methods, long supply chains and sophisticated quality control programs — can clearly trace their roots back to this period when Japanese industrial engineers after World War II began to incorporate American research on statistical quality control into their own factory production methods. (Toyota Productions system 1995-2018)

KAIZEN / Toyota Production System: the just-in-time production system pioneered in Japan. This methodology is a framework that will create a daily process to improve production methods incrementally, using scientific measurements to monitor and adjust as needed. The goal is to eliminate waste in factories by improving the evenness of material and information flow across the organization. This framework can be adjusted to any Industry. (Toyota Industries 2018)

Lean Manufacturing / The Toyota Way: a further evolution of KAIZEN as a global production system. This methodology is a successor of the KAIZEN model. As an evolution of KAIZEN and the Toyota Production System, Lean Manufacturing seeks to smooth out factory workflow peaks and valleys (even during short production runs) and minimize waste (by getting the right materials in the right place at the right time.) (Toyota Productions system 1995-2018)

Six Sigma: a process improvement model introduced in 1996 by Motorola (and later widely promoted by General Electric's CEO Jack Welch). This model is an alternative to the KAIZEN and Lean manufacturing models. A comprehensive system developed by engineer Bill Smith at Motorola designed to help companies improve quality and efficiency. A Six Sigma implementation is characterized by a hierarchy of roles (Green Belt, Purple Belt, Orange Belt, Black Belt, Champions) assigned across the organization. The goal of Six Sigma is to increase quality levels by using statistical data measurement to eliminate the underlying causes of defects as well as reducing variability in manufacturing processes. (Charron. R et all, 2015, p 36) KAIZEN™ view is that Six sigma is a tool amount all other improvement tools. And Six Sigma is part of KBS tool boxes.

Lean Six Sigma: an organizational model that combines the best features of Lean Manufacturing and Six Sigma. The objective is to eliminate waste (Muda), ensure efficiency by avoiding overburden (muri) and uneven workloads (mura). Increase quality levels by using statistical data measurement to eliminate the underlying causes of defects as well as reducing variability in manufacturing processes. (Formspace 2018)

Way of working and the role of leaders at different companies have changed overtime. From being a very short sighted and task oriented to a more forward looking and people engaging. In the past it was not expected that employees would share their opinion about how the processes, tools or production lines could be improved. It was not even encouraged to try to improve the way of working, since the directions game from the management and the employees were expected to adhere. And if you didn't usually you got fired because you were a trouble maker or someone who had own agenda and wanted to challenge the management of the company. In today's companies it is on the opposite encouraged to innovate and support the company for growth. Now people can leverage the way of thinking that Henry Ford introduced to his companies, that also the Toyota production system followed, support people to grow and invest in behavioral changes. To motivate people and make people feel part of the organization will retain them with the company for longer, and the cost of new hire and training the new people will be less.

The goal of the thesis is to demonstrate why Kaizen™ methodology could be chosen to support process improvement to ensure best efficiency instead of organization's own tailored process improvement processes and methodology.

Organizations and people speak about Lean. Meaning of lean is to eliminate waste from the process. The definition of waste is any activity that does not add value from the Customers perspective. (Miller, Wroblewski and Villafuerte, 2014, P7-11).

In the case study the company was also using the term of Lean. And during the case study it was discovered that the understanding of lean was in many instances misunderstood. It was something where the organization was decreasing the amount of documentation or where a project was executed with less milestone check points or where team structures were set up so that one person was having multiple roles.

## 1.1 Concepts

| | |
|---|---|
| Barashi | means the visualization of purpose. In Japanese the word means the elaboration of scenario (Tanaka Takasi and Tanner Sharon 2011) |
| Breakthrough Kaizen™ | Defines how the implementation of the new Paradigms and the improved processes needs to be conducted so that results can be seen year – on – year. (Kaizen Institute 1985 – 2018) |
| Cause-and-effect diagram | These diagrams are used to analyze the characteristics of a process or situation and the factors that contribute to them. Cause-and-effect diagrams are also called fishbone graphs (Masaaki Imai 1986, p239) |
| Ecosystem | means the framework comprising the Customer, Ecosystem Integrator, and Ecosystem Providers under which the IT Services are provided to the Customer at the agreed Service Levels. |
| Five S (5S) | 5S is a simple tool for organizing your workplace in a clean, efficient and safe manner to enhance your productivity, visual management and to ensure the introduction of standardized working (Kaizen institute, 1985-2018) |
| Gemba | is a Japanese term meaning "the actual place". Commonly refers to the workplace where value is added or where customers are served (Miller, Wroblewski and Villafuerte, 2014 page XXI) |
| Gembutsu | Gembutsu is a Japanese word meaning ‘real thing’. It is one of the components of the ‘Three Real meaning go to the real place (gemba) to see the real thing (gembutsu) and collect the real facts (genjitsu). (Velaction 2009 – 2018). |
| Daily KAIZEN™ | Defines how to change the gemba, behavior and culture of people. Defines ho to develop people and sustain improvement part of daily ongoing activities (Kaizen Institute 1985 – 2018) |

| | |
|---|---|
| PDCA – Cycle | Cycle of continuous improvement consisting of phases Plan, Do, Check and Act (Oakland 2014, 120). |
| Histograms | The frequency data obtained from measurements display a peak around a certain value. The variation of quality characteristics is called “distribution”, and the figure that illustrates frequency in the form of a pole is referred to as a histogram (Masaaki Imai, 1986, p239). |
| ITIL | an acronym for Information Technology Infrastructure Library. ITIL® is a globally recognized best practice methodology for IT service management that is used all over the world by leading organizations. ITIL® ensures that their IT services are aligned to the needs of their business. (ITIL® Training Academy 2018). |
| KAIZEN™ | A Japanese term meaning change for the better. KAIZEN™ is a gradual and long-term approach to achieve small, incremental changes in processes to improve efficiency and quality. (Kaizen institute, 1985-2018). |
| KAIZEN™ event | Kaizen event is any action whose output is intended to be an improvement to an existing process, usually by holding small events attended by owners and operators of a process to make improvement to that process which are within the scope of the process participants (iSixSigma 2000 - 2018) |
| KAIZEN™ Strategy | Defining how to achieve business goals. Defines which improvement targets we want to achieve (Kaizen Institute 1985 – 2018) |
| Kanban | A materials requirement planning tool in the Just-in-Time pro duction and inventory control system developed by Toyota. KANBAN is often seen as a central element of Lean manufacturing and is probably the most widely used type of Pull signaling system. KANBAN stands for a visual sign (Kancard, Ban- signal). Based on automatic replenishment, the flow of goods with outside suppliers and within the factory |

| | |
|---|---|
| | and the customers, is regulated, this system is called “KAN BAN”. (Kaizen institute, 1985-2018). |
| Leaders KAIZEN™ | Defines how to develop leaders to ensure that the organizational directions and support will be the right one by securing the right attention on the leader’s behavior and the management system (Kaizen Institute 1985 – 2018). |
| Muda | Japanese word for Waste and a key concept in the TPS as one of the three types (Muda, Mura [Irregularity or Unevenness] and Muri [Strain]) of deviation from optimal allocation of resources. (Kaizen institute, 1985-2018). |
| Obeya | Obeya (Japanese for “big room” or “great room”) is a dedicated room set aside for employees to meet and make decisions about a specific topic or problem (Wastadowski, Matt 2018). |
| Parento diagrams | These diagrams classify Problems according to cause and phenomenon. The problems are displayed according to priority, using a bar-graph format, with 100% indicating total amount of value lost (Masaaki Imai 1986, p239) |
| Scatter diagrams | Two pieces of corresponding data are plotted in a scatter diagram. The relation between these plotted dots illustrates the relationship between the corresponding data (Masaaki Imai 1986, p239) |
| ServiceNow | A tool environment that provides end to end transformation for IT services and infrastructure through a single cloud-based platform. (Service now.com 2018) |
| Stakeholder | an accountant, group, organization, member, or system that affects or can be affected by an organization's actions |
| Value Chain | Chain of actions that the customer is willing to pay for or sees as actions resulting in desired outcome. |

| | |
|---|---|
| Value stream mapping | Creating a visual picture of the current state or how material and information flows from suppliers through manufacturing and to the customer. Total lead-time, process cycle times and value-added times are measured. The future state is created based on goals desired, on market conditions and strategic planning for the business. (Kaizen institute, 1985-2018) |
| Visual management | Visual Management is a set of techniques for creating a work place embracing visual communication and control throughout the work environment. The VM philosophy is underpinned by the view that “what gets measured and displayed, gets done.” Simple visual tools are used to identify the target state, and any deviance is met with corrective action. It also makes it easy to understand the processes which have been put into place. (Kaizen institute, 1985-2018) |

## 2 Continuous Improvement as a focus in KAIZEN™ Management

KAIZEN™ is based on a holistic framework called Kaizen Business systems (KBS) formerly called Kaizen Management system (KMS). This framework contains all the elements of a Kaizen execution to employ minimum resources for maximum output. Kaizen is all about every day improvements done by everyone and everywhere. From small incremental improvements to dramatic strategic improvements. (Masaaki Imai 2017 Congress Presentation)

The Kaizen spirit is all about discarding conventional fixed ideas for operations, think of how to improve it and not why it cannot be done, it does not make excuses, but starts to questioning current practices. It is not seeking for perfection, it is searching for the right way to do things and will correct mistakes immediately. When there is room to improve and if things are done right the Kaizen spirit is not about spending money, but it is about asking systematically why things are done as they are and how things can be improved? And the improvements will never stop. (Masaaki Imai 2017 Congress Presentation)

In the centre of Kaizen, we have the people. Kaizen is a people-cantered and scientific approach to problem solving for the benefit of the society (Miller Jon et all 2014, p4). In practice this means that company “culture” is what a group of people or society would recognize as “how things are around here”. In a company there might be multiple levels of cultures, such as cultures of openness, culture of recognition etc. These are describing the behaviour of the people. However, culture has many facets and needs to be understood more deeply.

For us to shape the culture how “things are done here” in the desired direction to increase human happiness, overall performance and sustainability we must understand and study “how things are done here” and focus on why and what. Our behaviours are “how we work”, our mind-set is “why” and what is more tangible and visible (Miller Jon et all 2014, p5). The first level of artefacts is most visible or tangible elements of culture. The second level, behaviours are endorsed values, the consciously expressed rules or justifications. Third level represents the core values of the people in an organisation, where basic assumptions or unconscious topics lie. First level is A, the artefacts, second level is B, behaviours and third level C, core beliefs. Artefacts can be the company or organisation décor, dress code or special vocabulary. Behaviours that are shared within an organisation like how members put into action the principles and philosophies. Core believes are typically unconscious and taken for granted and are the most difficult to change or recognize. (Jon Miller et all 2014, p5-6).

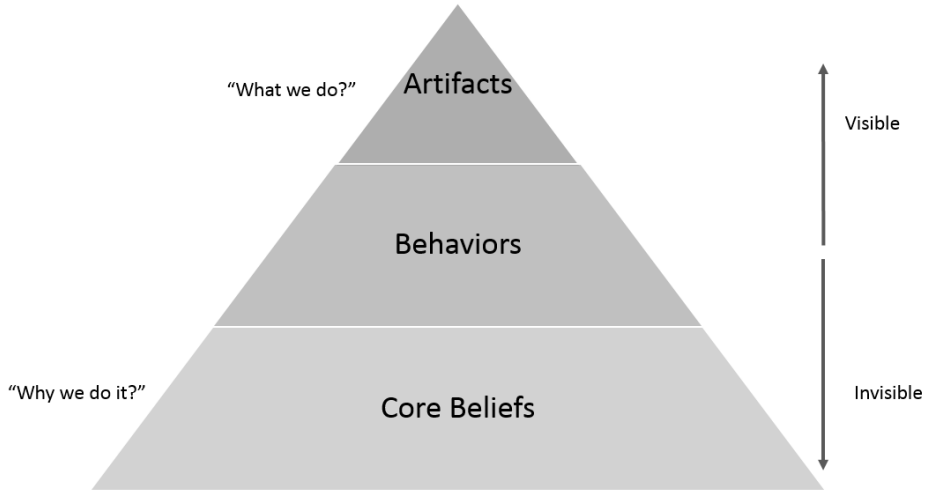


Figure 1: ABCs of Organizational Culture, Joh Miller et all 2014, p5)

How can an organization then develop their own way of doing and their own culture? Some studies are observing behaviour and reporting on behavioural observations these studies point to when a certain group of people achieve certain level of success together over a period of time it will start to change the behaviour automatically and this creates a new set of shared assumptions and builds the foundation for new culture.

The improvements impact in the overall performance and execution needs to be aligned throughout the organisation and the biggest impact of the actions will be seen on the Gemba. Gemba is the place where the value is created for the customer.

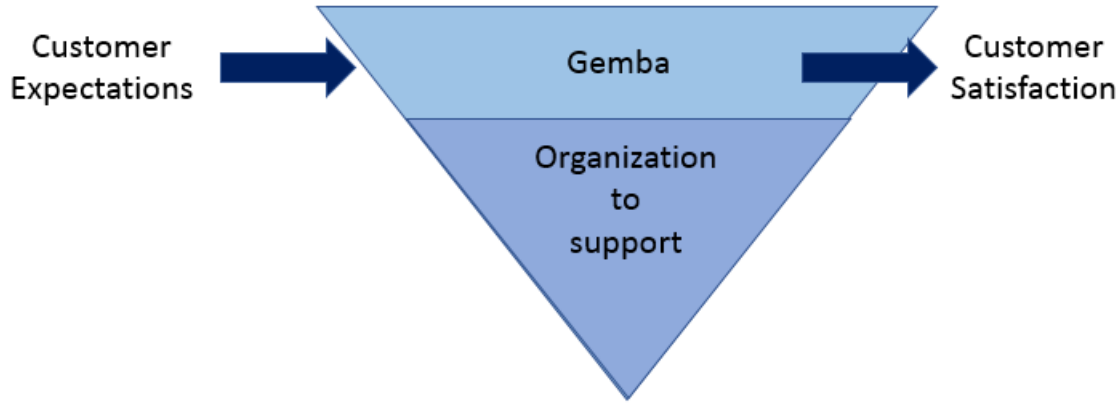


Figure 2: Organisation for KAIZEN™ @copyright KAIZEN™ Institute. All rights reserved. (Kaizen institute, 1985-2018)

The principles of KAIZEN™ is to: 1) if any abnormality occurs, the investigations should always be conducted at the Gemba first, 2) the check of gembutsu (machine, material, failures, rejects, unsafe conditions etc.) 3) taking temporary countermeasures on the spot 4) removing the root cause and 5) standardizing to prevent reoccurrence. Improvements on the Gemba are continuous and needs to be sustained otherwise everything with deteriorate. And the management means are needed to maintain and improve the standards. KAIZEN™ is a consulting of teaching methiodal that is continuously evolving, and it is not just small activities or groups of activities. It is an ongoing continuous improvement activity that should be inbuilt in the day to day activities of an organisation. It is not something that can be executed with a PDCA approach every now and then, but it is rather something that becomes sustainable for users to do part of normal activities every day. Once the culture of KAIZEN™ is embedded to the daily culture it can be considered as technical improvement that has to be supported by a solid culture and a mindset, it is not depending on tools nor is it only targeting on results, it is done by everyone, everywhere and everyday (Kaizen Institute 2016, conference slides)

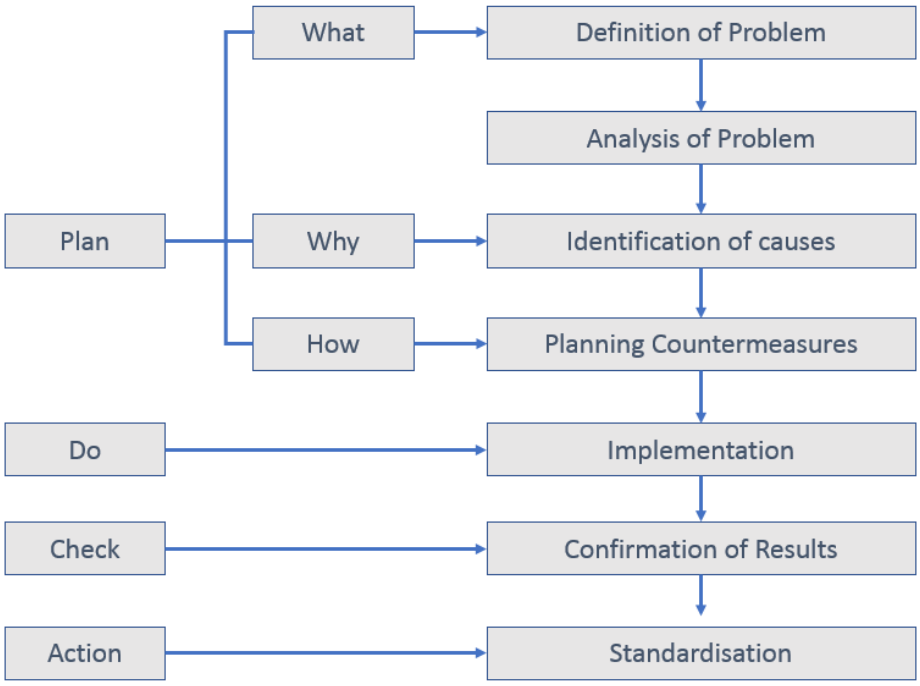


Figure 3: Problem-solving cycle (Masaaki Imai 1986, p 76-77)

Every organisation and every workplace have their own way to review the performance and whenever there is a problem, it is being analysed, the causes are identified, and solutions are proposed. In the problem-solving cycle (PDCA) once a solution has been put into practice, the next step is to check how effective it has been. If the proposed solution is found to be an improvement, it is usually adopted as a new standard and s horizontally deployed to other units. (Masaaki Imai, 1986, p 76)

## 2.1 History of KAIZEN™

The history of KAIZEN™ begins after World War II when Toyota first implemented quality circles in its production process. This was influenced in part by American business and quality management teachers who visited the country.

The idea is that there is a group of people, a so-called quality circle, group of workers performing the same or similar work, who meet regularly to identify, analyze and solve work-related problems and learn from each other. This revolutionary concept became very popular in Japan in the 1950s and continues to exist in the form of Kaizen groups as well as similar worker participation schemes. The term Kaizen became famous around the world through the works of Masaaki Imai. (Kanbanchi blog 2018)

Masaaki Imai (born 1930) is a Japanese organizational theorist and management consultant, known for his work on quality management, specifically on Kaizen™. In 1985 he founded the KAIZEN™ Institute to help western companies introduce the concepts, systems and tools of Kaizen™. At present time, the KAIZEN™ Institute team has applied the Kaizen methodology and KAIZEN™ training courses across effectively all business sectors throughout the globe (Kaizen Institute, 1985 - 2018).

Masaaki Imai published two fundamental books on business process management “Kaizen™: Japanese spirit of improvement” (1985 McGraw Hill), which helped popularize the KAIZEN™ concept in the West and Gembakaizen™: A Commonsense, Low-Cost Approach to Management (2012, McGraw Hill).

Word “Kaizen, where “kai” = change “zen” = good, simply means “change for better”. In English Kaizen is typically applied to measures for implementing continuous improvement.

KAIZEN™ is an approach to activity organization based on common sense, self-discipline, order and economy. KAIZEN™ method is a strong contributor and fundamental part of a lean production process model in lean manufacturing (Internet page, Kanbanchi Blog 2018).

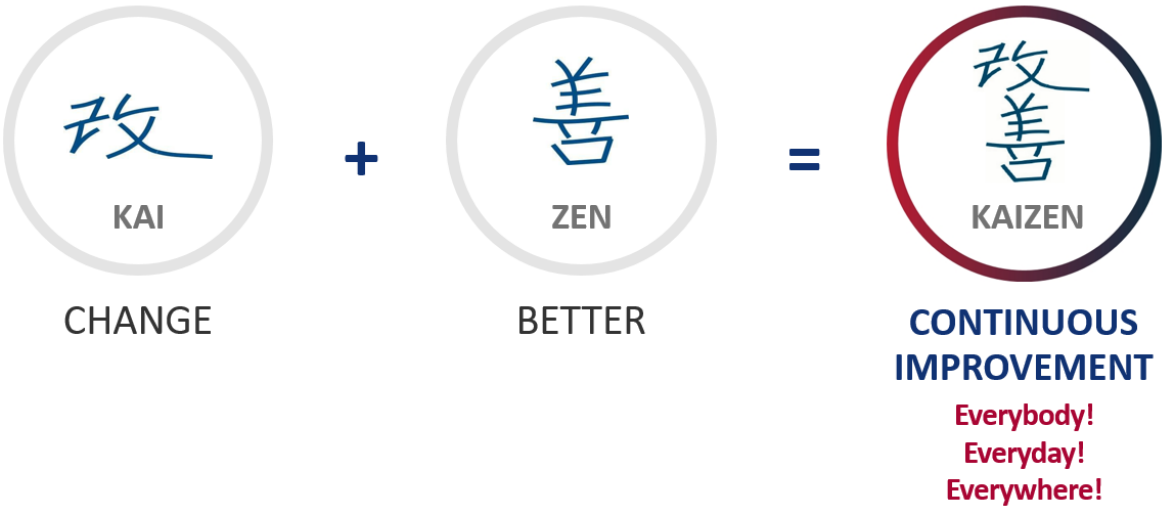


Figure 4: Japanese symbols for Showing the KAIZEN™ Meaning: The Kaizen Mission

These continual small improvements (Kaizen™) add up to major benefits. They result, for example, in: faster delivery, lower costs, increased people motivation and greater customer satisfaction. From Toyota Production System Terminology on their Georgetown plant website - Nov 2003: "Kaizen™, or continuous improvement is the hallmark of the Toyota Production System. The primary objectives are to identify and eliminate "Muda" or waste in all areas, including the production process. "Kaizen™" also strives to ensure quality and safety. Its key elements emphasize making a task simpler and easier to perform, re-engineering processes to accommodate the physical demands on team members, increasing the speed and efficiency of the work process, maintaining a safe work environment, and constantly improving the product quality. Jon Miller et all, 2014, p 6-7)

In 1985 Masaaki Imai introduced to the Western world the Japanese term KAIZEN™ and made it famous through his book, Kaizen™: The Key to Japan's Competitive Success. Translated in fourteen languages, KAIZEN™ became a famous all over the world (Qualitiamo 2018).

In 1997 Masaaki Imai introduced an evolved form of KAIZEN™ in his book Gemba Kaizen™: A Common-sense, Low-Cost Approach to Management, to reassert the importance of the shop floor in bringing about continual improvement in an organization. That translates into something of a corporate 'back to basics' philosophy. Gemba is where the product is manufactured, which could mean the assembly line in a manufacturing plant or the place where employees interact with customers in the service sector. It is "the place where the real work is done", as Masaaki Imai likes to put it.

## 2.2 Introduction to the KAIZEN™ Methodology

In Japanese, KAIZEN™ means “continuous improvement”. The world implies improvement that involves everyone – both managers and workers – and entails relatively little expense. (Kaizen institute 1985-2018)

Henry Ford was the pioneer of mass production and he observed and commented the direct relationship between the amount of the time his product stayed in the process of manufacture and the cost of those products. Ford remodeled his production lines so that he shortened the production cycle, increased the outputs and kept prices low. The work at a production line did not suit everyone, but Henry Ford understood already in initial stages that he had to motivate his people to stay to ensure that the turnover of people leaving the production lines would decrease. He started to offer higher base salary and invest in individual learning paths to support the people motivation and attractiveness of the work. Ford was a pioneer in recognizing the importance of shaping the values and the character of people in his organization to secure the business success. (Jon Miller et all 2014, p26)

At the middle of the twentieth century Toyota was measured as the underdog. The company did not have money nor the human capital to invest in new innovative solutions. The change of Toyotas business model was born from urgency and scarcity. The leaders at Toyota shared the same passion as Henry Ford earlier had stated. The passion to not only make Toyota successful by building cars and make money, but also to build people and make a better society. From this vision and belief that the Toyota management shared the importance of developing the skills and characteristics of employees at Toyota, the unique moral characteristics of Kaizen was born. (Jon Miller et all 2014, p27).

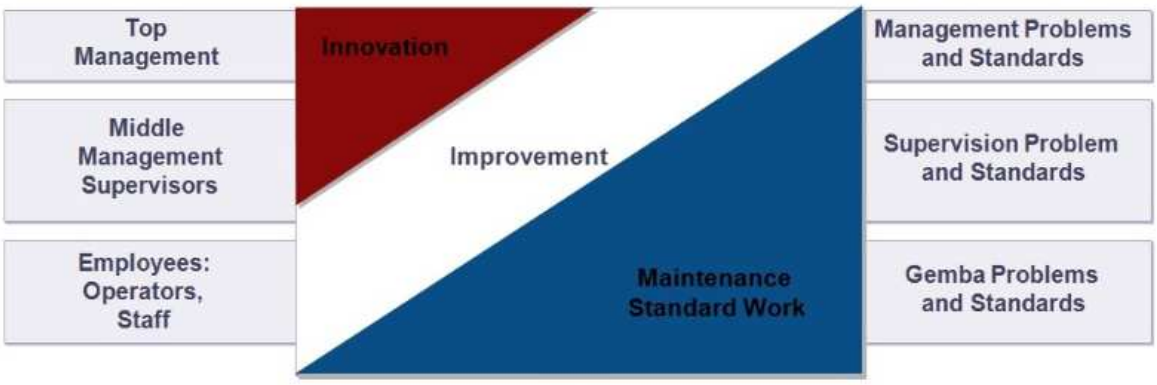


Figure 5: Kaizen Flag. Kaizen Institute, M. Imai @copyright KAIZEN™ Institute. All rights reserved.

The Kaizen Flag demonstrates the unique Kaizen principle where the involvement of

people at all levels in the improvement journey. At all levels in the organization, improvement tasks or projects form a part of normal work. Senior leadership's time is focused on innovation and improvement, a minor part of their focus remains on setting, checking on and maintaining standards on the front lines.  If we draw a horizontal line at each management level (as shown above in the picture) we get an indication of the time each level should focus on various activities. At the bottom the employees spend a lot of time to work according to standards, maintaining standards and some some time in improvement. In the middle, time is divided into all three activities. At the top there is relatively much less time is used by leaders on standard work, some improvement activities and some innovations (Masaaki Imai, 1986 p 5-7).

Since Kaizen is seen as an ongoing activity, embedded in the daily activities of all employees across the organization, everyone in the organizational hierarchy is involved in some aspect in Kaizen, as show in the figure 5 and figure 6 on next page. Kaizen is a humanistic approach to improve the overall quality and performance in an organization, resulting in better understanding of how the productivity can increase, how to lower the breakeven point and the management can become more attentive to customer needs and build a system that takes customer requirements into account (Masaaki Imai, 1986, p227).

The Kaizen strategy drives to give focus on both processes and the actual result. And to be able to support this approach there needs to be a top-down and bottom-up approach. And it is important to remember that Kaizen does not replace or preclude innovation. Rather innovation should start where usage of Kaizen is exhausted. Kaizen should follow as soon as innovation is initiated. (Masaaki Imai 1986, p228)

| Top management | Middle Management and Staff | Supervisors | Workers |
|---|---|---|---|
| Be determined to introduce KAIZEN as a corporate Strategy | Deploy and implement KAIZEN goals as directed by Top management through policy deployment and cross-functional management | use KAIZEN in Functional roles | Engage in KAIZEN through the suggestion system and small-group activities |
| Provide support and direction for KAIZEN by allocating resources | Use KAIZEN in functional capabilities | Formulate plans for KAIZEN and provide guidance to workers | Practices discipline in the workshop |
| Establish Policy for Kaizen and cross-functional goals | Establish, maintain and upgrade standards | Improve communication with workers and sustain high morale | Engage in Continuous self-development to become better problem solvers |
| Realize KAIZEN goal through policy deployments and audits | Make employees KAIZEN conscious through intensive training programs | Support small group activities (such as quality circles) and the individual suggestion system | Enhance skills and job performance expertise with cross-education. |
| Build systems, procedures, and structures conductive to KAIZEN | Help Employees develop skills and tools for problem solving | Introduce discipline in the workshops | |
| | | Provide Kaizen Suggestions | |

Figure 6: Hierarchy of KAIZEN Involvement (Masaaki Imai 1986, p 8-9)

Usually the organizations focus on quality and productivity. Usually more on productivity and less on quality, since many organizations are very financial driven. Kaizen is focusing on both. There are many definitions of quality and many ways how to measure quality. The same is true for productivity. No matter how quality and productive are being defined the other side of the coin is always Kaizen. Whenever and wherever improvements are made in business, these improvements are eventually going to lead to improvement in areas of Quality and productivity (Masaaki Imai 1986, p9).

Kaizen generates process-oriented thinking, since processes must be improved before we get improved results (Masaaki Imai 1986, p16). This means that Kaizen will impact people

and how people are operation and how they are executing their daily activities. This is somewhat contradicting with the traditional Wester-manager result-oriented thinking.

Where people try to achieve more by doing more, by working longer hours and by jeopardizing safety, own wellbeing and the quality of the deliverables.

The Kaizen method follows ten specific principles:

1. Improve everything continuously.
2. Abolish old, traditional concepts.
3. Accept no excuses and make things happen.
4. Say no to the status quo of implementing new methods and assuming they will work.
5. If something is wrong, correct it.
6. Empower everyone to take part in problem solving.
7. Get information and opinions from multiple people.
8. Before making decisions, ask “why” five times to get to the root cause. (5 Why Method)
9. Be economical. Save money through small improvements and spend the saved money on further improvements.
10. Remember that improvement has no limits. Never stop trying to improve.

The mission of Kaizen Institute is to: Improve the World with everyone, everywhere, every day (Kaizen institute 1985 - 2018)

People tend to think that to be able to start practicing Kaizen there is huge investment and change in the current organisational culture and new way of executing. To implement KAIZEN™ one needs only simple Conventional techniques, such as seven tools of quality control (Parento-Diagrams, Cause-and effect diagrams, histograms, control charts, scatter diagrams, graphs and check sheets). (Masaaki Imai 1986, p24-25). Often just the usage of common sense is all that is needed.

### 2.3 KAIZEN™ Business System (KBS)

The KAIZEN™ Business System (KBS) covers the full business scale and uses a holistic set of tools and methods to improve the entire business, providing long term company value. KBS is not a box of simple tools, but a complete teaching and improvement system that is both effective and efficient in the implementation of KAIZEN™ and achieving a Lean organization.

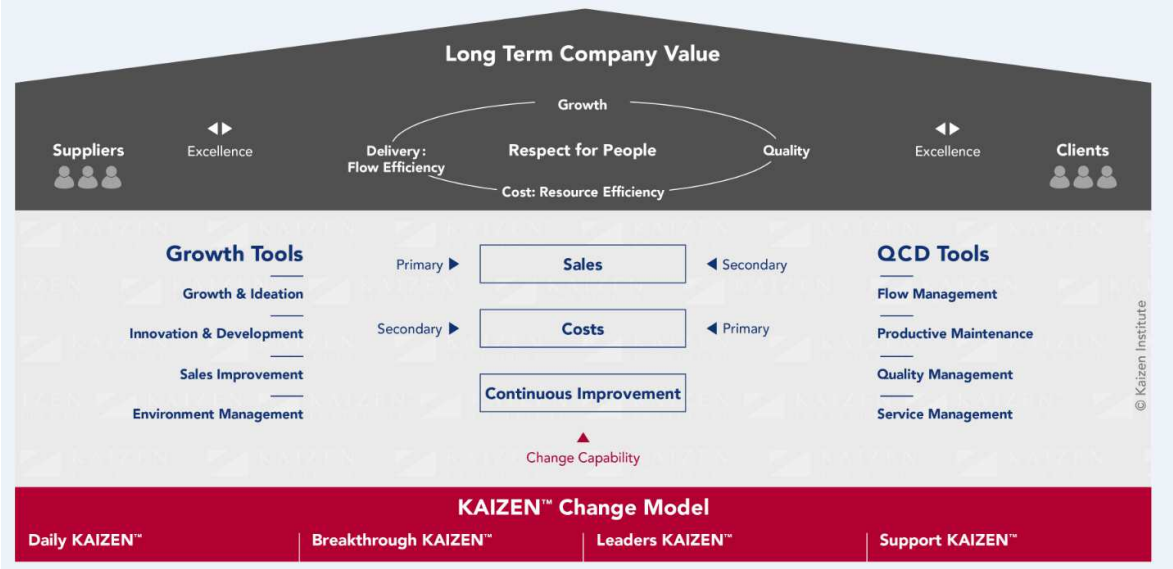


Figure 7: KAIZEN™ Business System @copyright KAIZEN™ Institute. All rights reserved.

Figure 7 is consisting of multiple essential elements of the Kaizen ™ Business system. Where everything aims to deliver long term company value. The aim of Kaizen is to improve performance end to end hence also the supplier and customers are presented in the picture. What the company delivers need to be something that the customer is willing to pay for and something that suppliers can deliver. The growth tools mentioned are all related to Breakthrough ideation of both products and services, commercialisation and increasing sales, by launching initiatives with effective expense mechanism. The overall goal is to ensure that the products that are required to the market will be done on time, with superior quality and right price. Stock should be kept to a minimum and the turnaround time from customer request to delivery should be optimal.

Q.C.D tools refers to quality of products by optimizing the delivery chain, or the flow of execution, ensuring sufficient resourcing both human manpower but also the usage of resources like manpower vs. machine power. The tools also contain area of effective expense of capital.  The Kaizen change model represent the 4 key adaptation layers how to start and execute Kaizen. Daily Kaizen is the operational execution of Kaizen. This is the part where the team start to plan the visual management, how to use team boards, KPI*s and cards for quick reaction. This part is where things like team meeting, daily meeting and coaching is agreed. Daily Kaizen will implement the process of 5S (**s**ort out, **s**et things in order, **s**hine/scrub, **s**tandardize, **s**ustain and self-discipline). 5S is one of the foundational activities that Kaizen will introduce to ensure a physical change in the environment, before the execution of other Kaizen events or actions can continue.  After

conducing the 5S things needs to be standardized and new work standards will be introduced. This will also impact the capacity planning, skill matrix for the team with a training plan to meet the new requirements. Additionally, the Daily Kaizen will ensure problem solving and continuous improvement matrix for the team. Daily Kaizen is an ongoing activity that is run constantly.


Figure 8: Daily KAIZEN™ Business System @copyright KAIZEN™ Institute. All rights reserved.

Breakthrough KAIZEN™ sets the value stream activities in place. Recognition of value streams in the organisation and planning of mission control or how to maintain and improve the flows of agreed value streams. Value stream mapping is the foundation for this activity to ensure and secure that collective agreement and understanding is reached for the value stream. Value stream mapping is usually driven with 3 to 6 months intervals and the value stream reviews will feed information to the Daily KAIZEN™ events.


Figure 9: Breakthrough KAIZEN™ Business System @copyright KAIZEN™ Institute. All rights reserved.

Leaders KAIZEN™ is regarding the planning of the activities for the whole company. It is all about creating the 3-5 years market vision. And how/where the company needs to improve to be able to meet the vision. This phase basically translates the company strategy and vision to actual tangible targets that will be implemented either through a project Kaizen or via Daily KAIZEN™. Leaders KAIZEN™ will also focus on reviewing and improving the effectiveness of the leader of the Company. The Leaders KAIZEN™ activities should be ongoing constantly, but the distinct parts of the journey will take time

Figure 10: Leaders KAIZEN™ Business System @copyright KAIZEN™ Institute. All rights reserved.

Support KAIZEN™ is the phase where the organisation is getting ready for the Kaizen methodology and the implementation of all the tools, processes and new knowledge. This phase will also ensure not only organisational readiness but also the understanding of the new capabilities and new knowledge and available resources.


Figure 11 Support KAIZEN™ Business System @copyright KAIZEN™ Institute. All rights reserved.

All of these will lead to improved quality and increased sales. With increased sales the profit is usually increasing.

A KAIZEN™ Business System is a holistic methodology, including methods, techniques and tools implemented to create an outcome. Kaizen is a Japanese term that generally translates to “change for the better” and business owners who employ its strategies can see improved relationships with vendors, employees and customers. These relationships create actual results in quality, efficiency, productivity, motivation and more. The resulting growth increases also the company value. The aim is not to steer the operations purely on numbers from a revenue point of view. The goal is to improve performance to be able to achieve more with the same amount of resources and this results in more efficiency that results in growth that results in company value increase. Company value increase results in company revenue growth.

Overall, the process of continuous improvement is robust and thorough, which also means that it is time consuming in some cases, however it does create complete, holistic and lasting results. The effort needs to be invested for companies to be able to maintain the result of the KAIZEN™ activities. To get to its objectives, several tools are typically implemented, by organisations supported by Kaizen advisors or coaches. As an initial stage the best way forward is to initiate the change journey with the help of experienced KAIZEN™ Business System Consultants. And in the long-term organisation will be able to execute the KAIZEN™ journey on their own.

### 2.3.1 Examples of successful implementations of the KAIZEN™ Business systems

KAIZEN™ Business systems is globally known. Kaizen operates today in large parts of the world and KAIZEN™ Consultants work with clients to create processes that highlight problems, while simultaneously training and empowering their teams to solve them. Kaizen Institute continuously research, develop and publish various aspects of continuous improvement, while partnering with clients, enabling them to implement sustainable improvements through Kaizen institute consulting, training and benchmarking activities and guiding them on their KAIZEN™ journey.

Some of the public references shows that huge enterprises have seen the importance of adapting a globally recognized framework of improving performance and adapting the mindset of continuous improvement

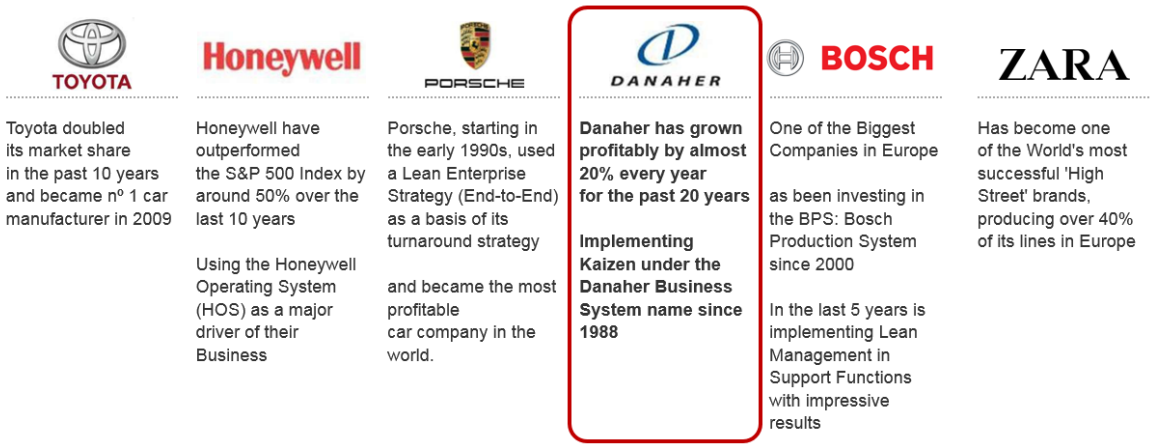


Figure 12: Public references of KAIZEN™ methodology implementation @copyright KAIZEN™ Institute. All rights reserved

Danaher Corporations portfolio had evolved continuously during the years. Between the years of 2001 and 2005 along Danaher's revenue and net income more than doubled, the firm consummated over 50 acquisitions and it stock price continued to outperform its peers by impressive margins. (Bharat, Harvard Study 2011, 708-445)

Danaher Corporation started the implementation of something called DBS (Danaher Business systems) in 1988, outsiders noted that this was a set of management tools borrowed liberally from the frame of Toyota Production systems. In essence it requires every employee, from janitor to the president, to find ways to improve the way works get done, every day (Bharat, Harvard study 2011, 708-445). The work started by the Rales brothers

when they started to look at the operations in one of the Danaher divisions. Due to remarkable results the Rales brothers implemented the DBS to a companywide framework. The framework did not only cover the transactional processes, but the focus of the DBS was on innovation and growth by using tools and processes around the new product development, marketing and sales. New tools like Accelerated product development, strategic pricing and intellectual property management were created to ensure the challenge of accelerating growth in accordance with the continuous improvement mindset of the employees. (Bharat, Harvard study 2011, 708-445).

DBS approach embodied four P´s – people, plan, processes and performance. These four elements are still today applied rigorously and unemotionally to both the current businesses and new acquisitions, with an emphasis on three areas: growth, lean and leadership) (Bharat, Harvard study 2011, 708-445). By doing this the Danaher's Market-Crushing performance can be observed (in figure 13)

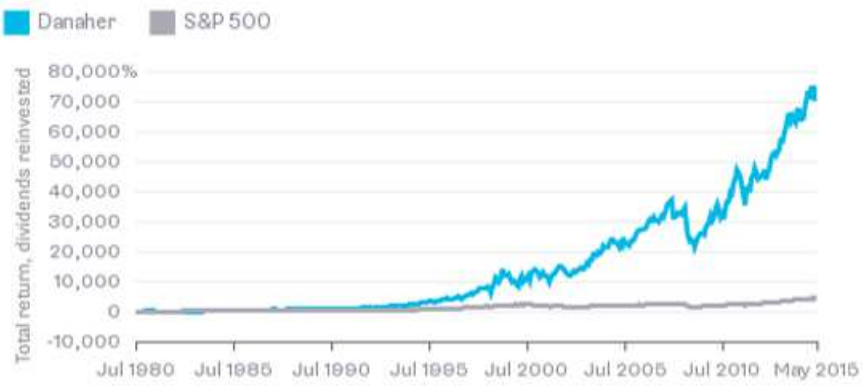


Figure 13: Danaher's Market performance (Bharat, Harvard study 2011, 708-445).

Danaher was able to generate $20 billion in revenue with 71 K associates. In addition, the company has been moving to common company culture with a common operating system called DBS (Danaher Business System). This system served as the ultimate success in building the competitive advantage by reducing stock, optimizing process flows to secure just in time delivery with optimized processes and tools and in the usage of right skillset and people with right capabilities and motivation. Danaher ranked #149 on the Fortune 500.

### 2.4 KAIZEN™ change model

The KAIZEN™ Change model is an integrated 4 pillars model consisting of Daily KAIZEN™, Breakthrough KAIZEN™, Leaders KAIZEN™ and Support KAIZEN™. These enable the companies to create an environment of continuous improvement with only one

true north star target (KAIZEN™ institute 1985 – 2018 – The KAIZEN™ Change model video).

Breakthrough KAIZEN™ aims to improve processes, productivity, effectiveness, safety and quality of products and services using the paradigms of flow, synchronisation and levelling (KAIZEN™ terms). Improvements lead to reduced cost due to decreased inventory, saved time and decreased waste and this leads to increased sales. When there is a systematic way to reduce waste (time, effort or inventory), this will lead to improved continuous performance, decreased turnaround time, less errors and less redoing, productivity increase and improved inventory and this will lead to increased customer satisfaction and improved sales. (KAIZEN™ institute 1985 – 2018 – The KAIZEN™ Change model video).

By customizing Breakthrough KAIZEN™ companies can obtain better results via increased sales, improved innovation speed, time to market, increased operational efficiency and reduced capital investment.

Daily KAIZEN™ programs motivates and trains managers, line managers and group leaders. The trainings aim to identify and solve problems with tangible impact and benefiting their own workplace and increasing team efficiency. The method encourages small but frequent improvements that leads to the establishment of the continuous improvement culture and a team focused environment.  The goal is to get people inspired to take initiatives and ownership of actions that improves the mode of operation and contributes to the sustainable improvement of the organisation. Through these steps the goal is to achieve better operational effectiveness without huge and long-term projects or additional funding. (KAIZEN™ institute 1985 – 2018 – The KAIZEN™ Change model video).

Daily KAIZEN™ includes short-cycle improvement activities, usually considered team-based problem solving in the front-line. The main purpose of Daily KAIZEN™ is learning and reinforcing values, and daily kaizen is critical to long-term sustainability. The direct financial benefits are relatively insignificant compared with the other two steps of Kaizen. The daily Kaizen has impact on the overall company or organisation strategy by sustaining results of strategic changes, including improvement culture etc.

Things that cannot be solved through normal Daily KAIZEN™ activities can be done via Breakthrough KAIZEN™. These activities are usually seen as activities of temporary redesign, new product introduction or other project-based improvements. The main purpose of the projects are to achieve rapid performance improvements and financial results, with strategic learning objectives.

Leaders KAIZEN™ program focuses on management, helping them to understand KAIZEN™ principles like Gemba commitment, visual management, strategy deployment and improvement. The goal is to have the management to role model to change the behaviour so that the KAIZEN™ practices will significantly impact the operations of the organisation and the management system.

Support KAIZEN™ Programs supports the effectiveness of KAIZEN™ system across the organisation and are key to the long-term success. These programs help one to monitor progress towards the strategic goals by making progress visible so that both roadblocks and deviations can be eliminated in a timely and effective way. This phase normally includes all strategy development, planning, talent recruitment and development, training and certification, motivation and the continuation and success of Kaizen.

The primary focus is the company strategy and direction, with a secondary focus to make sure that the results are being achieved through Daily KAIZEN™ and Breakthrough KAIZEN™. By having these three Kaizen cycles, Daily KAIZEN™, Support KAIZEN™ and Breakthrough KAIZEN™ as natural part of things gets done, the goal of continuous improvement of Kaizen where:" the everyone, everywhere and everyday" becomes possible.

### 2.5 Adapting the KAIZEN™ Thinking to the company culture

KAIZEN™ (or 'continuous improvement') is an approach of constantly introducing via Daily KAIZEN™ incremental changes in a business improve quality and/or efficiency.

This KAIZEN™ approach assumes that employees are the best people to identify room for improvement, since they see the processes in action all the time. A company that uses this approach therefore must have a culture that encourages and motivates employees for their contribution to the process. This should not be something additional, something that takes people away from their other assignments or that this is one-time effort type of work.

The key features of KAIZEN™ include:

- Improvements are based on many, changes rather than the changes that might only arise from Research and Development
- Improvements can be made in different industries from health care and manufacturing to production and service business or public sector
- As the ideas come from the workers themselves, they are less likely to be radically

different, and therefore easier to implement
• Small improvements are less likely to require major capital investment than major process changes
• The ideas come from the talents of the existing workforce, as opposed to using R&D, consultants or equipment – any of which could be very expensive
• All employees should continually be seeking ways to improve their own performance
• It helps encourage workers to take ownership for their work, and can help reinforce team working, thereby improving worker motivation (Tutor2u 2018; study notes of Kaizen).

As Kaizen is characterised by many small improvements over time, it contrasts with the major leaps seen in industry when radical innovative technology or production methods have been introduced. Over the years, the sheer volume of KAIZEN™ improvements can lead to major advances for a firm, but managers cannot afford to overlook the need for radical change from time to time. (Tutor2u 2018; Study notes of Kaizen)

The main change and impact for the organisation is that the people involved and engage in the area will be empowered to impact their own work area continuously. They will be able to make decisions regarding how they are operating in their own area of responsibility by improving ways of working continuously. The organisations do not need to invest additionally to improvement projects run separately from the daily operations. One can say that the Kaizen culture improves the company culture through daily actions and review cycles. Kaizen seeks to understand the vision and the target, grasp the current situation, evaluate the gap between the target and actual, take immediate corrective action to correct the gap and learn from this process before repeating the cycle (Miller, Wroblewski and Villafuerte, 2014 p107-108).

# 3 Using KAIZEN™ methodology to optimize process flows in an IT environment

The objective of this action study was to provide insight into how the process improvements could be done by using KAIZEN™ instead of the company own process improvement practices. The goal of the thesis was to compare the currently used method in the company versus the KAIZEN™ method and give clear and practical list of actions and improvement ideas for the organisation to consider, to be able to decide if they want to move to adapting the KAIZEN™ methodology. This study introduces the KAIZEN™ methodology through comparing the method of the process improvement and analysing the outcome of the usage method versus the KAIZEN™ method.

## 3.1 Background of the case study

The company chosen (later referred to as Company X) for the case study is a global telecommunication company. Powered by the research and innovation, Company X serves communications service providers, governments, large enterprises and consumers, with the industry's most complete end-to-end portfolio of products, services and licensing. (Company X webpages). In 2017 the average number of employees was 101 731, out of which 1105 works in the IT Function. (information from Company X Annual report 2017)

During 2012 Company X IT outsourced parts of their IT to 4 providers. During this time the organization invested a lot in process rework and implementation of ITIL framework with related tooling. The outsourcing agreement was based on a cooperation agreement called Schedule 10 End-to-End Service Management – cooperation agreement (Company X IT ecosystem handbook). Prior to the signing of the outsourcing agreement Company X IT had started the process remodeling from a traditional ICT process framework to an ITIL based framework. The ITIL 2011 edition that Company X IT started to adapt covered different processes and stages in the service lifecycle end to end.

ITIL framework is a framework describing the principles and practices for resources, capabilities such as processes, people and technology to enable successful delivery of IT services in all lifecycle stages of an IT service. (ITIL® V3 Foundation Handbook, p 7 – 9)

The end to end service management model describes the delivery model of the service from request to successful delivery. The end to end responsibility stands for the role of the Company to ensure that all key contributors are jointly working through a commonly

shared KPI model, common process framework and commonly agreed tooling ensuring that the delivery is done despite the multiple handovers from one party to another or even though the responsibilities may shift from one provider to an another. An example of end to end responsibility could be when a customer is submitting a ticket for a new PC hardware with required software installation. The responsibility starts from when the ticket is raised by the customer and is followed up with the multiple providers in the background responsible for delivering the PC, the accessories, the installation package, the instructions and the shipping back to the customer. Only when the customer has received the PC and is able to use the new device the delivery responsibility ends.

This diagram is showing the end to end service management responsibilities and the key counterparts in the IT service process landscape with responsibilities. The Value stream model later described in the thesis is grouping processes to value streams forming process ensuring progressing of actions in a manner that each step and the outcome is generating value. And value in this sense means something that the customer holds as important, worth paying for or useful.

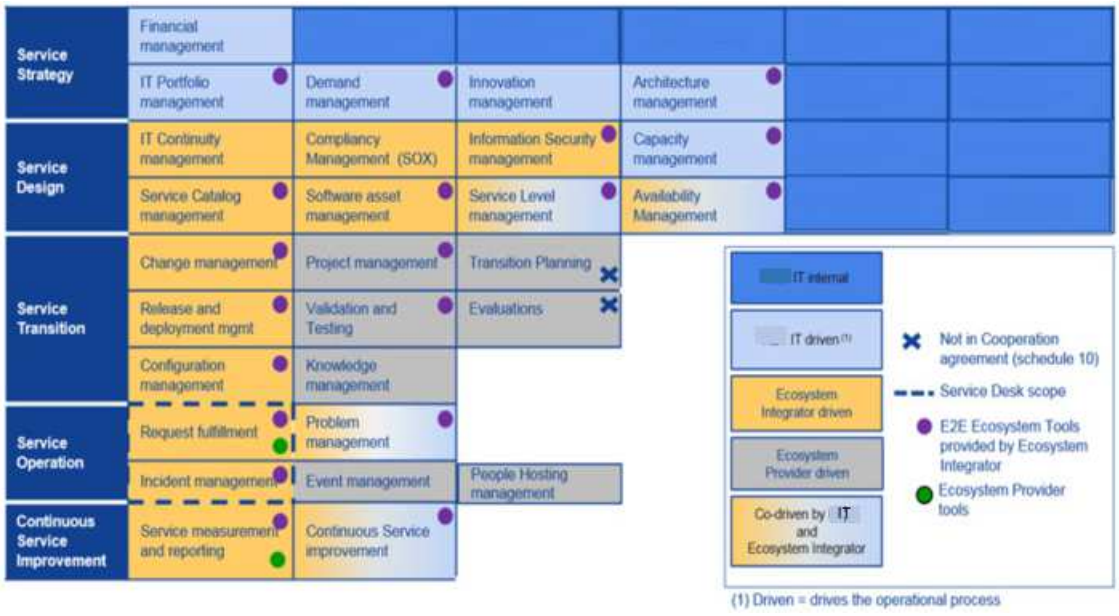


Figure 14: Company X IT process landscape in the frame of ITIL (End-to-End Service Management – Cooperation agreement)

The aim of the Schedule 10 document is to define and establish each providers obligation related to Provider's End-to-End service management of the IT Services and related operations. The desire in the document is to establish a business relationship between all parties or continue their existing relationship and to ensure successful coordination and

integration of delivery of products and services. To support this, the implementation of ITIL Service Management methodology and ServiceNow tooling was part of the contract. (Schedule 10 End-to-End 2012)

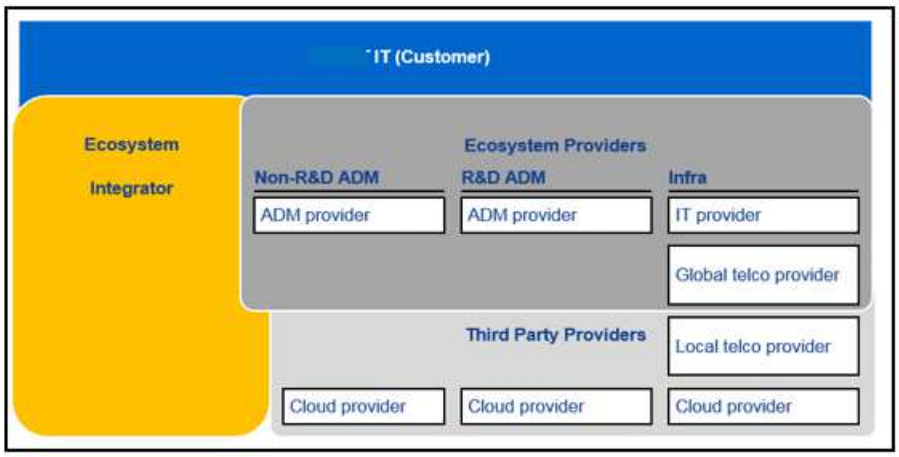


Figure 15: Overview of IT Ecosystem (End-to-End Service Management – Cooperation agreement)

In the overview figure of the IT Ecosystem the distinct roles and responsibilities were described. Company X is represented as the Customer. Company A as the Ecosystem Integrator and the Non-ADM provider, Company B as the R&D ADM provider, Company C as the Infrastructure provider excluding the telco services, Company D as the global and local telco provider. The ecosystem stands for the network of the interconnected IT providers and players responsible for delivery of IT Services.

In this thesis the relevance of the Ecosystem Integrator is the key, since contractually Company A is responsible for providing the process and tooling to ensure end to end value stream mapping throughout the entire lifecycle of all Services. All processes and the tooling, ServiceNow, interfaces to all players in the IT ecosystem.

Company X acquired a big telecommunications Company Y and closed the deal in January 2016. Company X and Company Y formed one of the largest broadband equipment providers in the world. This meant that the two IT units were merged into one having two modes of operations, two setups of tools and two organizations were to become one. The still ongoing creation of the new mode of operation and tooling after the outsourcing 2012 to the three previously mentioned providers got a new player – implementation of the former Company Y IT and their providers to one entity.

Company X IT process office defined the IT Value streams to support the collective understanding about the end to end operational framework of the IT Service process steps for successful delivery of services end to end. On top of the 4 main building blocks to drive the IT portfolio to business innovation, build what business needs, manage the service catalogue and steer the business usage and the anticipate and resolve IT Service production issues the value stream also defined the supporting activities to manage the efficiency and effectiveness of the IT value chains and primary value streams.

### 3.2 Objectives and Research questions

The research baseline analyses concentrated on investigating the stakeholders' perception of the process. The process in focus is having different level of stakeholders, from end users, process owners, different approval bodies, service owners, portfolio team and the ecosystem providers. The research provides insight into how much the process would have been improved during the process improvement attempt and what could have been different by using the KAIZEN™ method.

Research questions are: 1) (RQ1) What is the outcome of process improvement by using Company X own process improvement method? 2) (RQ2) What would be different by using KAIZEN™ method for process improvements instead of the company own process improvement method? 3) (RQ3) How can a company or organisation interested in KAIZEN™ start the journey to implement Kaizen™ to be part of their own company culture?

To understand the starting point, the key stakeholders of the process were surveyed. The selection of the people for the survey was done by the support of the Company X process team. End to End Service Management lifecycle management is interacting all together 22 process owners, 12 process designers, 8 Decision making board members and 6 Portfolio team members, altogether 48 people. The survey information collection was done by a survey conducted as an online survey – via internal survey tool. (Appendix 1). Some of the people wanted to share feedback over an interview instead of survey so the option of scheduling an interview was also provided. People in some countries (Belgium; Germany and France) were avoiding giving negative or constructive written feedback due to workers council and other instances. Hence the option of verbal feedback, documented by the interviewer, was used.

With the survey the goal was to understand the stakeholders pain points, challenges and issues to be able to ensure sufficient coverage of the planned process improvement areas

in the forthcoming workshops for deep dives. The input was used to plan the next level of focus points and key areas of dissatisfaction.

The design of the survey considered the fact that people were having limited amount of time to respond to surveys and hence the survey had to be kept fairly short, 10 questions with an option to also write open, free text input. The main challenges in general with processes were around the efficiency of the process and this might be related to the visibility of the different steps inside the process. I wanted to also understand how well the people were aware of the transparency or the different steps needed to execute the different activities within the process. Issues with the steps between the different actions and process steps that might cause dissatisfaction in case there are unclarities about the handover point and the responsibility shift between 2 steps, 2 team or 2 persons. Additionally, the focus for the survey was also to understand how well the accountability and responsibility had been agreed or documented between the different process players. Finally, the survey focused on the turnaround time of the full process and challenges in the duration of the different steps. Are there activities that could be done faster, better or smoother and what could be supporting the increased speed? Part of the process steps had already been implemented to the new tooling, ServiceNow, but the entire process was not yet fully deployed in the tooling. Through the survey the understanding how well the tooling supported the execution, transparency and the role responsibilities was recorded.

To get the comprehensive picture of the situation, the collected survey results and the interview outcome was used during the workshops to trigger different discussions and collect additional information about the problems and areas for improvements. The input was also to steer the discussions during the workshops to avoid situation where the discussion would be getting side-tracked and the focus on finding the improvements would get lost.

The Company X IT process organisation had created something called IT value chain – the aim of the Value chain was to create integration between the different ITIL process and to deliver transparency and traceability of the IT services end to end between the different service lifecycle stages. A lifecycle stage is defining each services life cycle or maturity level for the specific service. The used life cycle is broken down into four stages that help to identify where in the market service is at the current time. The company X was using following stages: Strategic, tactical, sunset and decom. Where the first stage indicates a new, evolving service attached to a strategical new direction. Tactical means a mature service that is seen being part of standard operations and used by most

employees or business units. Sunset stage implicates that most of the users have adopted something new that will replace current services. Decom stage indicates that decision to ramp down of the service has been made an only a small number of users needs the services for a certain period.

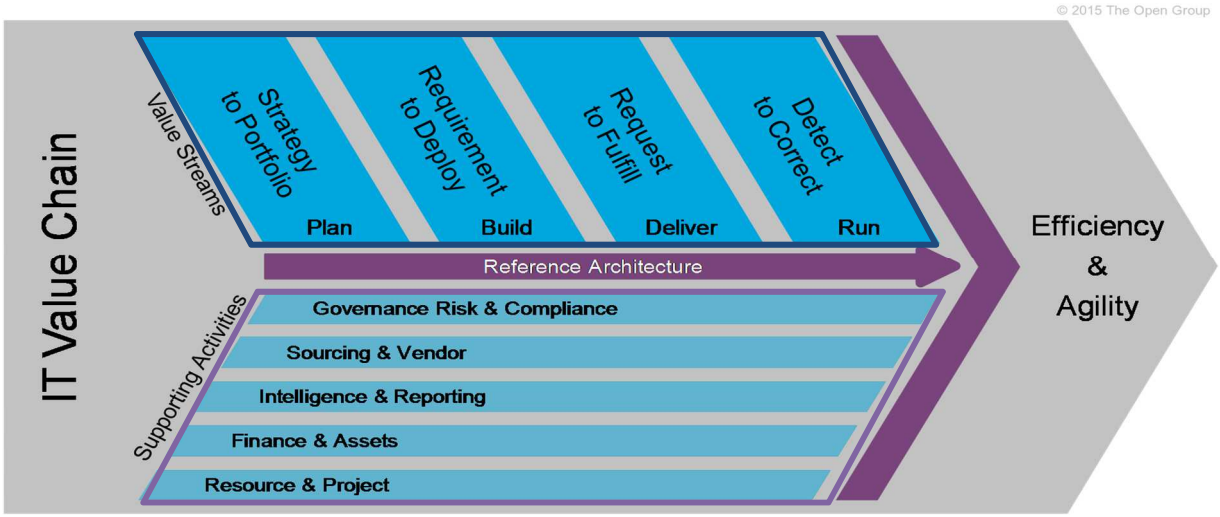


Figure 16: IT Lifecycle model (Company X IT Ecosystem Process Handbook, 2017)

The aim of the model was to clearly share how IT works end to end. What IT delivers and what are the processes supporting IT in the delivery and in reaching the target. The model supported also the understanding of how individual use cases were managed, identifications of gaps and improving of processes. The Value chain supported also the measurement of process performance and secured clear ownership with defined roles and responsibilities for all process counterparts.

Value stream consist of 4 main blocks supporting the plan, build, deliver and run stages of Service management – these 4 main phases are including several processes, also part of the standard ITIL framework. Part of the Plan phase we have Manage the IT strategy, manage enterprise architecture, manage IT portfolio and Manage Company X IT innovation ideas. The goal of this area is to drive the IT portfolio to business innovation. Part of the Build phase we have manage requirements, manage IT programs, manage experimentation and incubation and execute projects. This part is driving to build what business needs. Part of the Deliver phase we have the manage end user experience, call management, request fulfilment, service communication and service catalogue management. This aimed to ensure that the service catalogue would fill the need of our customer and business counterpart and manage and steer the business usage of IT services. Part of the Service detect and correct phase we have availability management, event management, incident management, problem management, change management, release and deploy

management, configuration management, capacity management, continuous service improvement, service level management, manage service documentation, service measurement and reporting. The goal of this part was to anticipate and resolve IT production issues. All the 4 parts are very closely linked to each other and the goal was to ensure that we would be able to obtain a repeatable, predictable, coherent and future safe reference architecture for all IT services.


Figure 17: Value stream and related process for each lifecycle staged (Company X IT Ecosystem Process Handbook 2017)

IT Value stream consisted of the 4 main blocks, lifecycle stages and the supporting activities to manage the efficiency and effectiveness of the IT value chains and primary value streams.

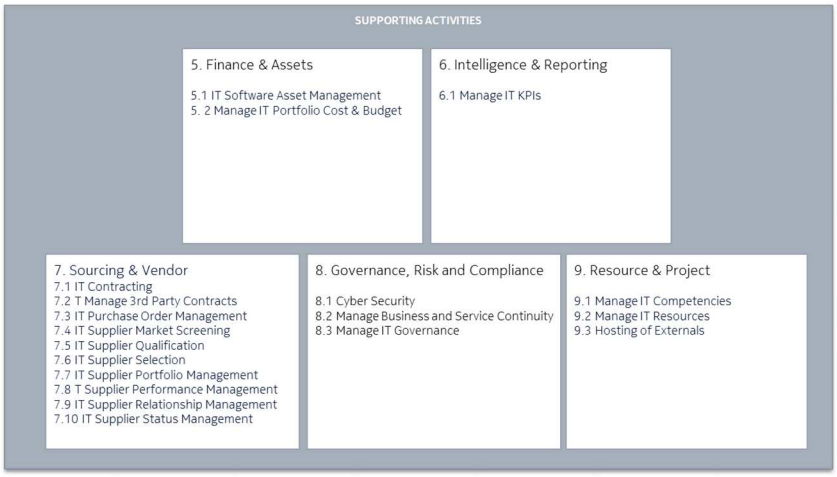


Figure 18: Supporting activities in the IT Values Stream (Company X IT Ecosystem Process Handbook)

### 3.3 Scope

Issues with the End to End Service Management Lifecycle process had been recognized by IT Leadership team. The request to improve, the direction and support from the leadership was officially given to the lead of the process organisation in IT. A problem statement was created: Legacy IT Portfolio Management Process does not exist anymore in our current process landscape. New Project Portfolio management process has been established but the End to End Service Lifecycle management process is missing. Decisions on Service portfolio changes are done in an isolated, unaligned way. Change implementation is causing problems for process flows, credit calculation, KPI measurement & reporting and contract deviations. Reference to the Legacy IT here meant the IT Process environment of Company X before the outsourcing in 2012.

There was no transparency to the process phases and it was not clear who owned End to end the portfolio changes. Responsibilities were not clear, and they were divided to too many roles, the Tools (ServiceNow and Troux) were too complex to support the processes. Common terminology was confusing (process vs tool as Service offering). This problem statement led to conclusion: End to End lifecycle management process including the Service Portfolio management process purpose, scope, roles and responsibilities were not defined and agreed in sufficient manner. Ability to manage the portfolio well and lead the service cost management was cumbersome. Purpose of the survey and the workshops was to clarify the scope and target of the process, clarify and document the roles and responsibilities, improve the process turnaround time, remove waste (unnecessary actions, roles and overlapping activities) and finally present a streamlined, optimized and improved process for execution.

The thesis aimed also to create best practices for process optimization and process framework creation comparing the currently used process improvement methodology and the KAIZEN™ methodology.

### 3.4 Research design

This research is an action based scientific research study having multiple approaches, mainly qualitative, constructivist approach. The study analyses people's perception of a process entity as well as the whole end to end process lifecycle. The study focuses also in analysing the current way of working and related tooling with the currently defined and executed roles and responsibilities within the process flows. Parts of the process was documented and existing, but part of the process was executed based on old assignments, old roles and old organisational structures. The research study focused on both the existing documented material, but also investigated people's perceptions and ways of working. The survey focused more on different process contributors experience and knowledge to understand the current pain points and current obstacles for efficient execution of the process.

This research is descriptive by nature; the research focused to understand what the current challenges are, what is causing them and what can be done to minimize, dissolve or correct the situation This research follows mainly Plan-Do-Check-Act Cycle in conducting change. To collect the input by a survey, analyse the outcome,

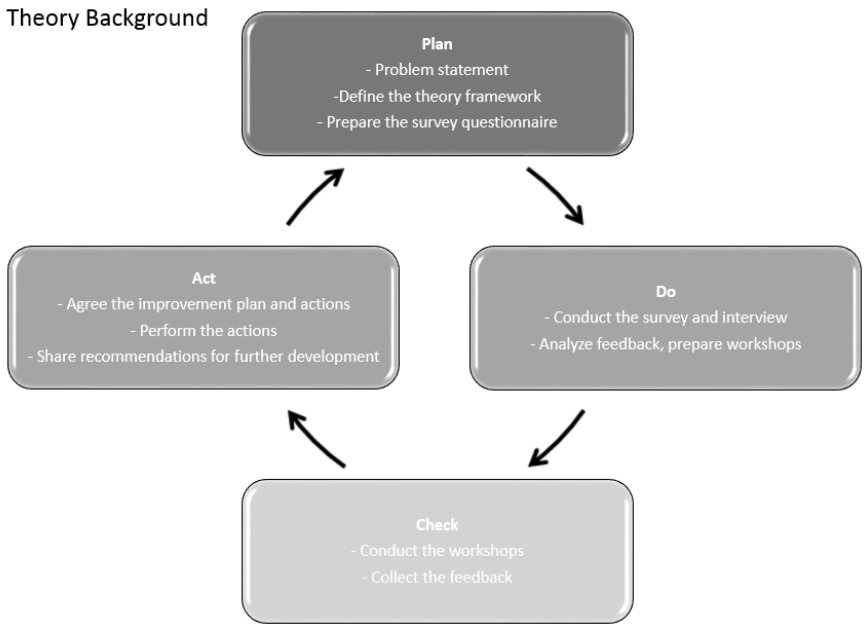


Figure 19: Theory Background, High-level research process

### 3.5 Research Approach

Action research methodology was used to create the development plan for end to end Service lifecycle management process and the related improvement work. This approach emphasizes active participation in change situations while simultaneously conducting research. The purpose was to solve a problem or areas of issues, helping the community to improve its practices and to produce best practice guidelines to further use. (Koshy Valsa; 2005; p 3, 21) The reason for using action research was that the process had already been in use for some time and majority of the process counterparts agreed that the entire process flow needed to be remodelled due to experienced problems and issues with the processes.

To ensure sufficient understanding about the issues within a process flow it is important to study the entire process end to end with all the inputs and outputs. If someone is only trying to improve one area and not the other interlinked areas the result might not improve the overall situation and lead to additional complexity for the other areas.

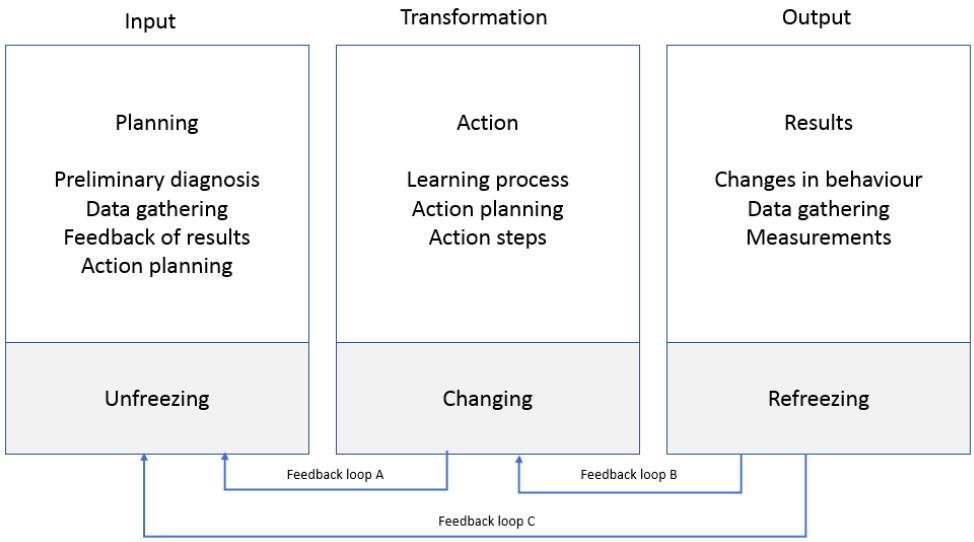


Figure 20: Model of Action research process

The action-based research was all about developing and act of knowing through observation, listening, analysing and question and being involved in constructing own knowledge (Koshy Valsa, 2005, p 9). The thesis was focusing on finding a baseline of the current situation and the working on the areas identified, possibly changing and improving things to then later reassessing the situation of the changed process flow with attached roles and responsibilities. After each observation round the input was analysed, actions taken and then after a certain period a re-evaluation of the situation was carried out to understand where further development or actions had to take place.

# 4 Conducting the research

The empiric part of the research begun in July 2018 and was finished in September 2018 starting with baseline data construction and analysis. The survey was done by using interviews, workshops and queries. The research was executed through 2 rounds of interviews one to analyse baseline situation and the second round of interviews was conducted after the remodelling, implementation and execution of the changed had been done and the new process and related tooling changes had been operational for 1 month. Findings and actions from the research will be presented later in the thesis.

## 4.1 Online survey and interviews

The main source to collect the information was an online survey tool built and used provided by Company X. All surveys were done for both rounds by using the Company X survey/query tool. Some people wanted to share their feedback via face to face interviews instead of a survey tool. An interview option, containing the same questions as the online survey was therefore provided as an option. The interviews were semi-structured to let each interviewee to speak his mind freely of his perceptions on what the current situation was and where the upcoming improvement actions would be most beneficial. But the same questions as in the online survey was the foundation for the interviews and the results were recorded so that the respondent saw what was recorded to be able to correct if something was misunderstood or misinterpreted.

The people participating in the first survey, conducted prior to the deep-diver workshops, were selected from the primary stakeholder group, as defined by the Company X IT process team. 48 people were chosen to be surveyed or interviewed depending on their own preferences. 34 people responded online, and 14 people wanted to share their feedback in an interview session. All people who were invited to the first round did completed the survey or interview. People were informed that the input would be stored and processed in a secure and confidential manner. No information about individual responses linked to certain respondent would be shared or displayed. All information would only be used to understand the current situation and as input for the next steps for the remodelling of the processes in scope.

Triangulation is one way of increasing the reliability of the thesis (Kananen Jorma, 2011, p. 69). This method combines several different research methods in one study. The phenomenon is approached from many angles, using several different methods. The aim is to

find confirmation for the research results and their interpretation (Kananen Jorma, 2011, p.69). The material related to the phenomenon could be collected by using more than one collection method, for example survey, observation and interview.

The interviews were not allowed to be recorded so online notes were created throughout the interview sessions, so that the person being interviewed was able to see on the screen during the interview was written. Any misinterpretations were corrected and aligned during the interview. Most of the interviews were conducted virtually over phone (with screensharing option) or videoconference. The interview was based on the same question sheet that was used in the online survey tool. Questions can be found in the Appendix 1. Each interview lasted approximately one hour.

After the interviews a small working team analysed the results and based on the feedback started to plan the areas of deep-dives for the workshops. The primary areas of concern raised from the first round of interviews were around documentation, duration of the process and the supporting tooling. The lack of the quality of the documentation touched all areas of the process including the process flows, process roles and the process steps.

### 4.2 Preparations for workshops

Workshop preparations considered the feedback collected during the survey and the supporting interviews, 3 principal areas were easily discovered. The workshop for the deep dives had to focus on improving the following areas: increasing the transparency between the different process steps, clarify and document the roles and responsibility of each person in the process and decrease the turnaround time of the process and between the different process steps.

The working team agreed to use one external person to the organisation to support to facilitate the workshop to ensure that focus on the right things and right elements would take place. And to also secure that the internal team, all belonging to the same unit, would not fall in to “political” debate about the various aspects of the roles and responsibilities. And, to secure that the people would be focusing on finding the waste from the process and topics for improvements.

The findings from the first-round survey were presented to the management to ensure that the focus points and the findings were reflected in the right manner. Simultaneous the working team searched for support and approval to keep the deep dive sessions with

allocation of key people from the process community. Approvals were obtained and a workshop team consisting of 11 people, 10 from the Company IT organisation with roles from Service Catalogue owner, Process owners and process designers and 1 external facilitator was scheduled. The participants had distinct roles in the process and the selection of the key counterparts was not easy, since everyone considered this kind of process improvement activity as additional work assignment and it was hard to find volunteers to participate. The roles invited to the workshop all represented at least one key role in the process flow. The Strategy manager was the one representing the overall strategy for the organisation ensuring that the services derived with the process is in line with the overall strategy. The IT architect represented the overall process architecture but also the view of ensuring that the service design derived with the process was in line with the overall enterprise architecture. The stakeholder manager in the workshop represented the customer or the business of the process and the role was to ensure that the process changes would reflect the voice of the customer. Service owner in the workshop represented the voice of all service owners who would be the receivers of any of the outcomes of the process flow, impacting their service offering to business or customers. The portfolio manager represented the overall service portfolio activities and he had to ensure that the changes from the process resulting in changes in the overall service portfolio would be possible to be implemented. The process owner and the process designers of the workshop represented the process owner community and ensured that the dependencies to the other processes were captured in the correct way.

During the preparations also, the service integrator in the role of process implementor was brought in. The key role for the service integrator in the community was to later secure the implementation of the processes in the agreed tools and ensure training and overall coordination of the processes amongst all the IT players in successful delivery of the IT services.

Prior to the workshop a small team worked on preparations of the workshops – ensuring access to the latest documented process flow, roles and responsibilities documentation and other related documentation for the working team. A kick off meeting was held to set the scene for the workshop together with expectations of the outcome and prework required by everyone (appendix 4). Material about the current processes and the dependencies including the storage place of the current process was distributed to all participants prior to the workshop. Everyone was requested to prepare themselves for the workshop by collecting/preparing following items:

Preparation needed from participants:

1. Clarify and consider to yourself purpose of the process
2. Consider scope, collect facts (templates, screenshots, documents) about input and deliverables requirements in process contact points, starting and ending point
3. Data collection, how many IT portfolio changes are done, which type of changes or projects are majority
4. Performance data, how quickly changes are implemented, how well customer requirements fulfilled?

Once the timing of the workshop was agreed, the facilities were book and all the logistics agreed, the importance of setting the scene and share the management buy in for the activities was essential. The working team requested Senior Managers to open the workshop and share the expectations of the work in front of the workshop participants.

### 4.3 Conducting Workshops

Due to the nature of our organisation, where the people are spread across the global to many various locations and due to ongoing travel restrictions, we had to plan the deep dive workshops as virtual workshops via teleconferencing and video conferencing options and my using WebEx platform as the sharing tool to enable online sharing of applications required during the workshop (such as vision, power point, word). The workshops were conducted during 3 consequent evenings by using the online facilities. Each workshop lasted 6 hours.

The workshop agenda for each day:

Opening and introductions

Purpose (problem statement) and deliverables of workshop

Agree name and purpose of the process (what this process does)

Scope definition

1. Starting and ending point
2. Inputs to process, outputs (deliverables)
3. What are contact points for other processes, inputs needed and their deliverables

Draw future process with main steps

4. Include some KPI: s, how do I know if process is working?

Define action plan to achieve future process

The first workshop day was opened by a senior manager that explained the importance of the work and addressed the key outcomes required from the workshop. The message was clear: Improve the transparency, simplify the process flows to increase the turnaround down and document the roles and responsibilities.

The external facilitator asked the service integrator to ensure the process changes discussed would be documented constantly during the workshop. Once a decision was reached the new process flow would be update accordingly – so the redrawing of the process flow continued during the workshop and was managed by one person.

The methodology used in the workshop to look at the processes and improve the processes were the company own interpretation of multiple different best practices to do process improvement and process optimization. All participants invited to the workshop had been working with processes and process modelling in some aspect. Assumption was that everyone knew how to write or describe a process. But not detailed explanation was given what method if any was used.

Company X process improvement methodologies are different in different part of the organisation and it depends on who is part of the working group who defines the way of working to initiate the process improvements. Only in some parts of the Company X other organisations the adaptation of a Kaizen culture and KAIZEN™ methodology had started. Within the Company X IT organisation, no real KAIZEN™ activities or events had been started. The decision about starting Kaizen in other parts of the Company X had been made by the Company X leadership team in the organisations but no company holistic agreement or decision had been made.

The aim was to look at the current process flow (appendix 2) and identify the key areas where we could improve the transparency, simplify the process and increase the turnaround time. Everyone had their own view and after discussing 11 different opinions it was evident that the work had to be done by walking through the process flow from beginning, each box and each role separately.

During the first day only the 2 first process steps were discussed and many opinions about how it was done today versus how it should or could be done were discussed. The Facilitator, as an external to the organisation, had to explain several times that the goal is to look at how things were documented now and how things were done now and then

draw a conclusion how things should be documented going forward to be able to get the updated process how things are to be done in the future.

After each day a small core team finalized the outcome of the day and distributed the material. After day 1 it was evident that the way the workshop was planned by having people in remote locations was not really the best way – people had to flip between two different screens – one showing the process flow in discussion and the other screen showing how it was redone by the Service integrator. There were issues with the connection and sometimes comments from remote locations were not captured properly due to technical issues in the voice quality. It was agreed that day 2 would start to look at who are really the roles that needs to be involved in the process, instead of continuing to try to figure out how to improve the situation of a documented process that is executed differently from both role, responsibility and activity point of view.

Day 2 was opened by the process team responsible, she emphasised the key outcome that we had to achieve. She reminded everyone about the cooperation and the team work that we had in front of us. The goal of the workshop was not to identify additional issues or topics that might not work or might need to change due to updates in the process or related tooling. She recaptured what we had been able to achieve during day 1 and clearly emphasised that day 2 would focus on defining and agreeing the needed roles in the organisation to conduct part of the processes.

Old process flow was again shared, and 11 people started again all to explain how they saw the process roles to be required and which people had to be included and which roles could be excluded. The external facilitator reminded the working team about the importance to distinguish the roles with real responsibility versus people who would need to know or only support the different activities to be conducted within the process. Service integrator was reworking the required roles in the swim lane process diagram during the workshop (Appendix 7). As an outcome of day 2 the roles were reduced from 12 to 7. This result was derived from multiple different things such as change of the organisational structure after the original process diagram was created, renaming of the process during the workshop to explain and represent the actual desired outcome of the process and also identifying roles that only would require to be informed and not really have an executional role within the process. The new name of the process was agreed to be Manage IT Service portfolio.

After day 2 a smaller working team finalized the notes and submitted the outcome to all participants as preparations for day 3. The goal of day 3 was discussed and agreement for the goal of day 3 was agreed. The last day had to really focus on ensuring transparency to inflow and outflow of activities. Meaning which actions were done by each of the process roles and what was the action and what was required from the next person.

Day 3 was opened by the process team responsible and she recaptured the discussion briefly from day 2 and shared the goal of day 3 to ensure that all participants would understand the importance of day 3 and not go back to earlier discussion from day 1 or day 2. The whole team was reminded about the 3 main goals to improve the transparency, decrease the turnaround time and improve the clarify and documentation about the roles and responsibility.

To the last day of the workshop only 7 people joined, which of course resulted in that all required roles were not present, and the rest of the people did not have insight into the role descriptions and responsibilities in details. Some of the agreements (who should be inserting the data to the tool, which fields are mandatory to be filled in, who should be submitting the approval) made during the workshop was made on best guess basis and had to be clarified and confirmed after the workshop. The new swim lane (appendix 7) was drawn during day by the service integrator based on the discussion held for the different responsibilities represented as boxes within the swim lanes. The arrows show the flow between the different activities and different people in the process.  Above the arrows brief explanation about what the arrow indicates as the action was added to explain more in detail what is the action required. Yellow boxes indicated dependency to another process with separate process description and responsibilities, but these boxes are essential for this process to ensure that this process flow is triggering right actions in the surrounding processes.

### 4.4 Remodelling the process, training and communication

The remodelling of the process flows was conducted during the workshops. One person was redrawing the swim lanes and the input and outputs from each workflow stage during the workshop so that all participants were able to view online how the drawing was proceeding. Additional work that had to take place after the workshop by the service integrator was that he updated the RACI matrix (RACI explains the R=Responsibility, A=Accountability, C=Consulting and I=Informed parties within a process step. Who needs to do what or what is the individuals specific role in the step).

Majority of the concerns between the old and the new process were around out of date organisational structures, out of date roles and responsibilities, process flow not reflecting how things were executed in real life. The overall feedback was that the documented workflow did not at all or very little reflect the way things are executed today.

The organisation was explaining and documenting the processes with a process swim lane chart (appendix 2 and 7) for the end users to be able to understand the processes. The diagram was built with a western reading logic that the process starts from the top left corner and one will follow the process from left to right and from top to bottom. Each swim lane represents a person or role, each box represents either the activity or input/output to another process. The arrows in the diagram explains the direction of the information. The value of having the process explained in a picture format is easier for the reader to follow and see the dependencies and required parties with responsibilities. Usually a process diagram is further explained with a RACI table and additional documentation to explain the responsibilities in detail.

Clear actions regarding the overall documentation update, communication and training were agreed during the workshop to be executed after the workshop. This included also the follow up of the agreed changes to the supporting tooling. The changes agreed during the workshop had to be executed prior to the communication to the impacted people. Any tool changes were done out of business hours by the external service integrator. Proposals of the changes were discussed and agreed between the service integrator and the small working team after the workshops were finalized. Updates to the tool had to be done for certain field names, organisational structure changes and owner of certain workflows. More details about the action items in the appendix 5. Some of the actions were such that they required more internal decision if the organisation would be willing to invest additional time and effort in conducting further simplification of the process environment.

Once the workshops were held and the process was ready to be released, the process owner supported by other colleague's schedule 4 global All hands calls inviting all people in the organisation to participate and hear about the key changes, new process flow and changes of roles and responsibilities. Separately the process actors had 4 scheduled meetings where they discussed in detail and testing of the new process took place. The working team held separately 2 meetings with senior management, who had requested the work to be conducted, to share the key outcomes, improvements and recommendations for next steps.

The senior management requested the working team to conduct a follow up survey 1 month from the release of the new improved process and associated tooling enhancements. The same survey was conducted using the same online tooling and the same set of questions were used to ensure possibilities to compare the results before and after.

### 4.5 Conducting a new survey

Once the new process had been rolled out and executed in 4 weeks the process team invited the original list of responded to a second survey. Out of the 48 people who participated to the first survey 40 people responded to the second survey.

Same questions with the same online survey tool as previously were asked to the same stakeholder group who were surveyed previously. The focus was now to understand the changes and impact of the new process and related tooling (appendix 6).

The stakeholder group had been requested to respond to the second survey during the All Hands calls and the message had also been strengthened by the communication from the Company X IT leadership team. Additional feedback and improvement ideas had been requested from the whole community too. If someone wanted to share ideas for improvement or generic feedback they were supposed to address them to the IT process team.

The survey was sent to the participants and again the option to answer face to face or via telephone interview had to be given, due to the same reason as during the first survey phase. 10 people out of 40 wanted to have a phone call to share their feedback. Same approach as during survey 1 was used. The respondent was able to see the recording done via the online sharing tool, WebEx. Additional information given was recorded so that the respondent could see and propose changes in case he did not feel that the interviewer understood the point correctly. Each of the interviews lasted between 30 min and 45 min.

### 4.6 Analysing outcome and preparing next steps

When comparing the original process flow (appendix 2) with the new process flow (appendix 7) one can just by looking at the visual outcome see a simplification. The improvement actions have resulted also in less players or less people with assigned responsibility. The number of different counterparts to execute the various stages in the end to end service management lifecycle process had been decreasing from 12 to 7.

The new process flow is clearly visualizing inflow and out flow of each step and indicating outputs to other processes required to execute the actual outcome of some activities.

The dependencies to other process outside the actual value chain was impossible to be described in one process flow – and this resulted in the more simplified visual outlook, but the level of complexity brought by the dependencies is not visible, nor tested or under-stood.

During the process rework the name of the process changed from End to End Service management lifecycle to Manage IT service portfolio since it became evident during the remodelling that the scope of the process was more to manage the service portfolio and not the whole End to End Service management lifecycle.

Definition of roles and responsibilities during the workshop was cumbersome since all the areas were not fully documented, nor understood what the activities are happening in the distinct stages. Discussion about what was documented and how things really were done ended up in debates about if everything needs to be standardised or do we give freedom to people to execute on their best knowledge. Meaning 2 people acting in the same role, but in different part of the organisation might have the same responsibility, but they are executing the assigned action differently, ending ultimately up with same result.
During the discussions in the workshop it became evident that people executing the same role and same activities did perform the activities differently in the tooling and in the process. A more detailed look at what were the actions required step by step would need to be carried out, simultaneous also the documentation about the required steps and actions would need to be done.

Efficiency of the process might have been improved due to the removal of unnecessary steps discovered during the walkthrough of the process. But since the testing of the new process was not done during the workshop it was not evident if the process turnaround time was improved. Also, the implementation of the new process and change from the old way of doing to the new way of doing will take time. Since the different process steps were not standardised it would also be hard to measure the improvement since some of the activities required to be executed would be done manually outside the tool. The tool in use would only be able to provide statistic about the activities happening in the tool, the time progressed in the tool, but not manually outside the tool.

Transparency to the different steps inside the full process became clearer. Since ultimately the discussion resulted in a significantly increased understanding what the

specific process was contributing to. The original understanding was that the process would interact with most of the subprocesses and underlaying other processes – but the outcome was that the interfaces to underlaying processes did not take place from the End to End Service lifecycle process, but rather the subprocesses. And, not all subprocesses were interacted from the End to End Service lifecycle management process, but rather the linkage could be from one subprocess to the next subprocess. So, a simplification of the interfaces to and from the End to End service lifecycle process was one clear outcome of the deep-dive, increased visibility into the inflows and outflows from the process in scope. Additionally, the discussion resulted in the increased transparency about what the tool was able to present to the users and the process responsible. The tool offers visibility to the things happening in the distinct phases that are executed in the tool – but not the work that is done outside the tool. Discussion about how to move all the activities solely to the tool resulted in discussion about further simplification of the process that would need to take place later.

Process flow diagram was updated to reflect not only how things were executed today, but also how the approvals and the decisions would need to flow from one stage of the process to the other to ensure transparency of approvals and decisions required to move from one stage to the next. Documentation was updated to reflect also who would need to approve individual requests and which approvals would go to the IT Governance steering committees. Additionally, clarification was secured around who would need to be consulted or preparing the approvals and how the decision would need to be recorded and cascaded.

Discussion about the updates of the roles and responsibilities was held on high-level. But since approval of individual persons responsibility changes would have required an approval from Line manager and in some cases from the country specific HR or Workers council the role and responsibility discussions were documented but not finally agreed. This would be one item for action later together with the Company X IT leadership team.

Agreement on changes regarding the tooling was also documented, and Service integrator as the tool provider took the actions agreed during the workshop for implementation to be later verified and tested during an agreed pilot with the process owners and process designers. The tool enhancements were done rapidly during the following weekend by the service integrator, but no testing nor piloting of the new process was conducted.

Next steps to further improve the process and the related tooling would require an additional deep dive into the dependencies and full process trial end to end to ensure that the

original objectives of improving transparency, turnaround time and sufficiently defining the roles and responsibilities for optimized execution. Next steps would also need to look at new ways of documenting the dependencies of the other processes and how the results or outcomes of the processes with a dependency can be managed or monitored. Measuring of the processes and setting a KPI is challenging without being able to distinguish all relationships and dependencies.

This way of conducting process improvements was very unstructured and improvements were discussed based on the feeling or the area seen as the most unsatisfying and usually the goal and the target were forgotten. In the KAIZEN™ method there is a clear structure how things are done and how people will be working in the same location making the process flow visible on the “wall”, flipchart or boards – and then identifying the key roles, key process steps and iterations finding room for improvement – what is the real waste and what are the areas that can be further improved. The process also takes the people to the Gemba to really witness how things are done – during the workshop there was an attempt to get people to bring real case examples (like printouts, print screens from tools etc.) but these were never used since the discussion was more about what is the process today and who needs to be there. The conducted workshops were hard to manage due to technical issues and technical limitations (jumping between 2 different shared screens, old and new process flow).

Deliverables from the 3 workshop days was the remodelled process swim lane chart and a more detailed understanding among the participants what the process area is targeting to achieve. After the workshop the follow up actions delivered a more detailed and updated RACI explaining the responsibilities and updated training material explaining the changes and the new process flow with actions and activities.

Main changes between the 2 different process diagrams is the reductions of roles and clarification of the responsibilities. But the 2 different process diagrams are now also representing two different things. The original process diagram (appendix 2) described the end to end service lifecycle model and the updated process diagram (appendix 7) described the process for Manage IT Service portfolio. The value of the new diagram was to reflect how the real work was done – and not visualizing something that the organisation assumed to be the way work was executed by people.

### 4.7 Data collection methods

As the PDCA –cycle in Chapter 2.4 showed, figure 4, all proposals for corrective actions or improvement starts with identifying the areas for improvement or changes, which can be done using, interviews, online surveys, gemba walks, data analysis and queries, root cause analysing workshops with five whys, cause-and-effect diagram or pareto-analysis.

In this survey the study wanted to understand the process user perception and current mode of operation with already identified issues and problems. Due to the nature of the organisation located in many various locations globally we were not able to pull the people together to one site. The usage of the gemba walks is a very useful method to identify the problematic areas. This means in practice that the people will go where the real activities, actions are carried out. Gemba means a real place, where the action is – leaving the comfort of the meeting room and going where the work is done. The phase following the Gemba is the Gembutsu – analysing the relevant information surrounding the area for improvement or a problem. This can be done by interviewing employees in an encouraging way, where the focus is on resolving the problem, not blaming anyone. (Charron et al 2015, 288 - 289) Gemba should be used also in verifying the results where the process output is taken in production.

In this study the data collection was done using online survey, interviews and knowledge of people joining the workshops. There was a request to the participants of the workshops to prepare and bring use cases and real-life data to the workshop. No Gemba walks and real-life examples from the process and tooling environment was presented during the workshops.

### 4.8 Data analyses

Survey results were collected and consolidated for both phases. Also, the free text comments and additional feedback during the interviews were analysed. 48 people responded to the first interview round and 40 people to the second interview round. The same target group was used, and the same questions were used. For interview phase 2 it was highlighted that we are focusing now on the execution of the new process flow and related activities. The respondents were familiar of the process already before the new process implementation or had a significant role in the End to End Service lifecycle management process. All people were supposed or assumed to have been trained to the process areas, roles and responsibilities and the tooling supporting the entire End to End Service management lifecycle process. Also, all the respondents received the same information during and after the implementation of the new process and related tooling

changes. The communication of the changes, the meeting invitations and additional opportunities for walk through of the new process and the tooling was sent to all parties.

The first area of comparison what was the difference before and after the conducted changes, improvements and adjustments

Comparison of the average results where we can clearly see improvements in all areas:

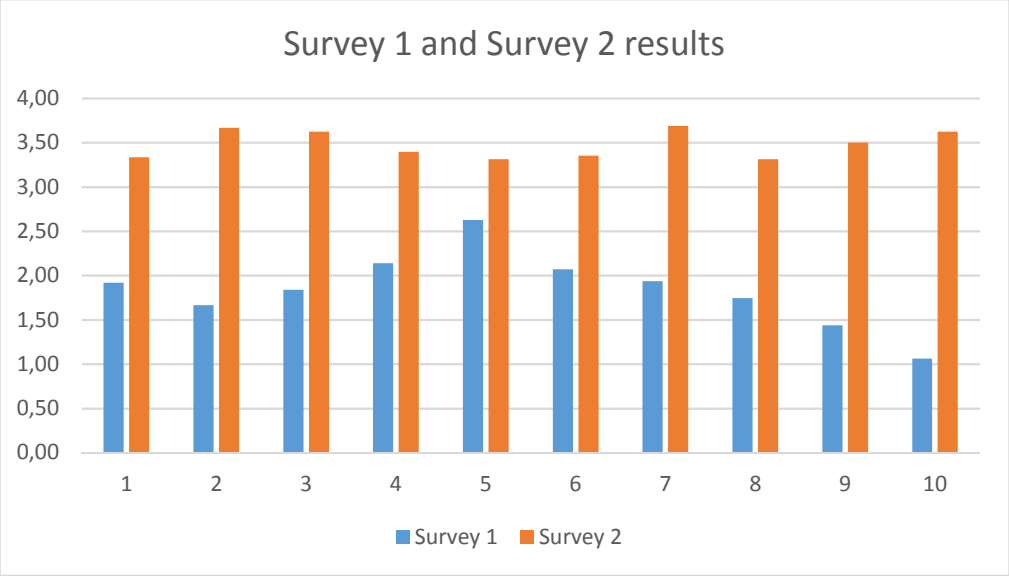


Figure 21: Average result for each question and comparison between interview 1 and interview 2. (List of questions can be found in Appendix 1)

Figure 21 is comparing the average results for each question between the survey 1 conducted prior to the workshops and survey 2 conducted 1 month from releasing the process and the changes in the tooling. Questions in the both surveys are the same with using also the same average scale 1 – 5 (where 1 is representing low score and 5 is representing high score)

We can clearly see an improvement in all of the areas but the most remarkable improvements have taken place in the areas of  question 2 (According to your experience how transparent is the process), question 3 (according to your experience how well are the process steps defined in the e2e process), question 9 (according to your experience how satisfying is the duration of the process execution)  and questions 10 (according to your experience how well is the tooling working for the process.

Least improvement has taken place around how well the process steps are defined (question 5). During the remodeling of the process flows it became evident that how the process

had been documented and how it has been executed did not meet up. The way the process was executed did not reflect the original process flow. The outcome of the remodeling was matching more the way things are done, but the new process flow also reflected the approvals and decisions that had to take place according to the unit governance. During the workshops it became clear that all parties had not been aware of the different approval bodies nor mandatory decision points. This are would require hands-on training and monitoring to be effective and implemented in a correct way.

Areas where moderate improvements had taken place question 1 (according to your experience how efficient is the process), question 4 (According to your experience how well are the role defined), question 6 (According to your experience how well are the is the accountability executed for the different parts), questions 7 (according to your experience how well is the process documented) and question 8 (According to your experience how satisfying is the duration of the process execution). Common for all these questions were that the decisions about the next steps was not possible to be done by the working team nor by the IT Process team.

Decisions regarding role and responsibility changes must be agreed with Line managers, HR and the Workers councils (in some countries). The accountability of the different process areas was tied to the role description and the execution of the assigned role with right level of understanding of the impact and the areas of concern. Turnaround time and the measuring of the efficiency of the process was related to the agreement of a common measuring framework and establishment of KPI's. This was discussed and the current tooling, ServiceNow, would be able to provide metrics about the distinct stages and the steps but currently it had not been enabled for all parts and a change to the enablement of the measuring would require a contract change between Company X and Service integration.

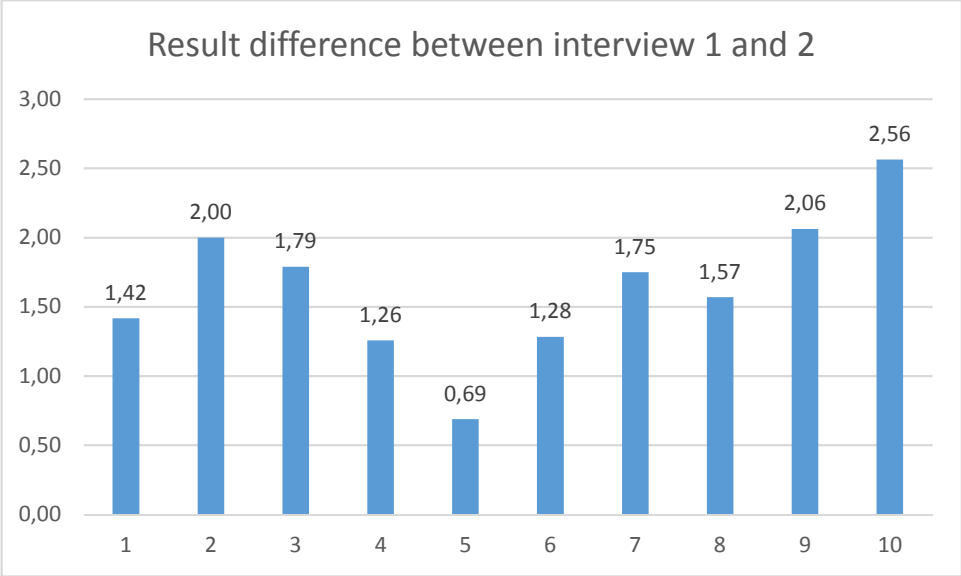


Figure 22: showing the average difference between survey 1 and 2

If we compare the 2 surveys and the understanding of people. We can see a clear scattering between the different questions. The understanding of each area is very scattered between the respondents.

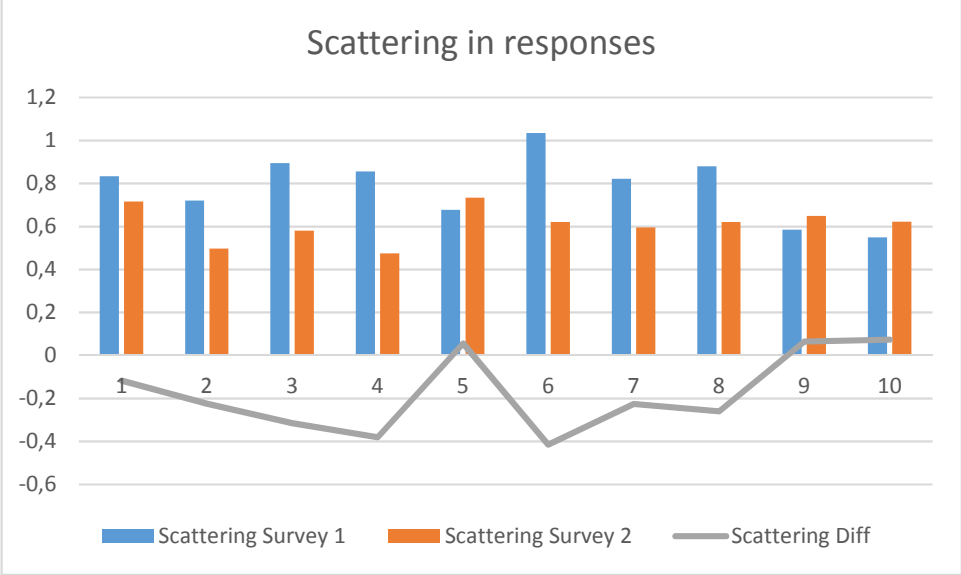


Figure 23: showing the scattering between survey 1 and 2

Biggest areas of concerns are in the following areas:  question 5 (According to your experience how well process steps are defined in the e2e process), question 9 (According to your experience how satisfying is the duration of the process execution) and question 10 (According to your experience how well is the tooling working for the process). The understanding and visibility of the end to end process varied a lot between the people, mainly because one process owner or process designer was usually looking at their own

area only, with the closest interfaces. They did not need to know nor understand the areas after or before, since their focus was only on executing their own area of responsibility with the closest interfaces.

The differences how the process owner conducted their own area of responsibility was also discovered. During the discussions it was evident that some people were able to use the advantage of the ServiceNow tool, as automated interface, guiding the different actions required, while others used a semi-automated way by taking the work ticket from the tool, manually working on the topic and the entering the outcome or result back to the tool. Some people were working fully outside the ServiceNow tool and had no interfaces to the tool or the rest of the community.

Issues with the tool data quality was also raised during the discussion, the tool contained still old terms, old organizational teams and functions and did not in all cases have the right options or fields to use. The tool was very cumbersome to use or preventing from streamlined interaction with others contributing to the process execution. Those who did not use the tool yet were surprised that they could execute their process part without a linkage to the tool. It became evident that these people had used manual swivel chair approach, meaning someone else had been feeding their contribution to the tool, without the process counterpart being aware of it. The swivel chair approach delayed the significantly the process.

### 4.8.1 Communication of the outcome and recommendations

Outcome of the work all together, was discussed with the Company X IT leadership team. Topics that the working team had not been able to resolve for example changes in the roles and responsibilities, new job descriptions etc. was left for Company X IT leadership team for actions or further discussion.

The new process was launched via different all hands call to the impacted organisation and through the Company X IT Ecosystem handbook, available online for anyone, in the impacted organisation including the providers, for self-help and study.

The recommendations for the next steps were discussed in the process group steering team – responsible for all IT processes in the organisation. Different proposals about the next steps were made and were left to be discussed later. No clear actions for the next steps were agreed due to the lack of support for the final actions from the Company X IT Leadership team.

# 5 Research results and conclusions

## 5.1 Improvement proposals

When companies want to invest in improving and changing things it is important to get the management support and commitment to allow people to spend time and effort in activities required. The work should not be something additional, but time should be allocated to activities promoting continuous improvement. The importance of implementing the culture of Kaizen and strengthening the overall strategy and direction with the Leaders Kaizen™ is key to success. In this study it became evident that the implementation of Leaders Kaizen™ with the disciplines was missing.

Outcome of the workshop was that the process community sat down and reviewed the complex areas together – worked through the distinct phases and different activities – but since the work was done virtually via videoconference it was easy to observe that focus on the topic during the 6 h workshops were hard to maintain for all participants. A workshop with people in the same room would have been much more beneficial since majority of the discussions was hard to follow or hard to understand. Recommendation would be to allow people to travel to one location and maintain the working team in a centralized location all able to see and hear everyone. By implementing the Breakthrough Kaizen™ model supported by Leaders Kaizen™ the outcome of the process simplification would have been different. There was no clear strategy and agreed follow-up model within the company nor commitment to drive through all the identified actions. Part of the Kaizen methodology the facilitation of the workshops is embedded in the process and all workshops would have been conducted with strict discipline

Despite the prework given all participants came with different understanding about the objective of the workshop and the process targets. People had a different view on the process in scope and the target of the work. Preparation of workshops should never be underestimated. Links to documentation and related other supportive material had been distributed well in advance to the participants – but it became evident that some of the participants had not even bothered to open the links, nor study the delivered material. Preparation for the actions given, to dig out facts and metrics had not happened for all participants. And incremental approach to the workshop could be beneficial – to keep several short working sessions to ensure that people would be prepared and ready for the actual workshop. But on the other hand, no one can be responsible for someone else's work and contribution. The missing element of using the Gemba walks and review the real work condition, people in actions and working with real data was missing from the Company X

process improvement work. All of this would have been completed during the Breakthrough Kaizen™.

Discussions during the workshop was well facilitated but also a lot of ideas that were not directly input to the process in scope came up. All these ideas would need to be recorded and later looked at as potential input and improvement ideas for other process areas or related tooling. During the workshop the facilitator interrupted discussion that were sidetracked or not directly related to the ongoing workshop. These improvement ideas and actions were recorded to a “parking-lot” for later consideration by the steering team. Parking-lots should be used in the discussion to ensure that people are able to work in an innovative fashion and bring up related topics for later discussion. But the parking-lot approach should not be encouraged and promoted so that the focus on the actual workshop topic stays in-tacked.

Facilitation of a workshop must be conducted in with strict discipline – but with possible flexibility if required. Part of the prework it has been agreed which topics the workshop should focus on, but during the discussion other essential topics came up and the discussions and the work was side tracked. Importance of making things visible to all participants should also be considered. During the workshop the process flow was constantly shown – and all updates were made on the fly – but the facilitator would need to ensure that the person drawing the updates would have sufficient time to execute the changes without being interrupted constantly with additional demands or additional requests. Finalization of the work, like wording adjustments, layout, colouring etc should be done after the workshop.

Considering the time invested in the remodelling – and the amount of work effort – the outcome could have been more dramatically improved. The outcome reflected now the way the things are done versus how it was designed to be done. But the improvements of how things could be conducted to obtain more optimized performance was not embedded in the discussion. Recommendation would be that there would be frequent revisit of the process to verify if the documented process is reflecting the way things are done. And are things done according to what has been documented. Also, a benchmarking to best practices and other related processes could be used to identify areas of improvement.

### 5.2 Impact of KAIZEN™ methodology for the research

If Company X would have chosen, the KAIZEN™ methodology to improve the End to End Service Management Lifecycle process the approach would have been a bit different. The

overall commitment for the work would have been recognized by implementing the KAIZEN™ strategy part setting the foundation and goals for the overall work. By having a clear goal, the working team would have had the management buy in and also clear agreed improvement targets what the work should try to achieve.

IT process team responsible for arranging the work would have been implemented by Leaders KAIZEN™. What the leaders would have needed to adapt from a behaviour point of view to coach and mentor the team to review and improve the process. During the workshops it was recognized that people were distracted by emails and meetings, and the attention the actual work was not maintained throughout the workshop days. By having a sufficient Leaders KAIZEN™ implemented the commitment from the Leaders to mentor the employees would have been better.

By implementation of Daily KAIZEN™ the actual change to the way of working, and a walkthrough of the Gemba with the aspect of people's behaviours and culture would have been reviewed. Now the process improvement work was done remotely, with no clear facts not evidence how the actual work was done. The required pre-work by the participants, to bring in print screens from the tools, process steps etc. was not completed and the real understanding of how the steps and the actions were done and by whom was missed. The process improvement activities were done on best guess basics.

Implementation of the phase, Breakthrough KAIZEN™ is the phase where the changes are implemented with measurable KPI's to secure the continuation and continuous improvement mindset.  This phase will also ensure that the cultural mindset of people will be secured and that all impacted people will be adhering to the new improved way of working. In the exercise made by Company X the communication and training of the new update process was done, but the actual implementation journey was partly incomplete due to some facts that were not possible to be solved by the working team, like nomination of people to roles, changes of responsibility and updating of process flows related to organisational aspects. If the KAIZEN™ methodology would have been used to improve the process flows the Leaders KAIZEN™ and the Support KAIZEN™ would have stepped in to ensure that any bottlenecks or issues preventing a successful and harmonized implementation of the process improvements would have been mitigated.

### 5.3 Conclusions on the End to End service management life cycle model

The whole End to End Service management lifecycle process had many dependencies and many in and outputs. The documentation of the process was hard to maintain since also local variances exists how the process is executed. Process control and performance monitoring would need to be embedded to ensure sufficient visibility, execution maturity and transparency into the maturity of the process.

The outcome of the process improvement conducted with company own resources and own way of conducting improvement cycles resulted in a process reflecting the way things were done today – rather how they were designed to be done on paper or how they could be further improved or optimized. The workshops resulted in better awareness of the process and the dependencies including a new model for roles and responsibilities.

Usage of external person for facilitation was a clever idea since he brought questions and insight into the various stages without having a pre-learned way of understanding the process end to end. Downside of having an external to the community brought in was that the working team had to use valuable time to explain basics of how the organisation works, what are the current roles and how the different processes and tools interacts. All these aspects were known to the rest of the workshop team.

The first attempt to standardise and streamline the process was done by using company own resources and company own process improvement framework. The people who participated in the work were working with processes and related tooling on a daily base. Assumption could have been that they would be the best people to contribute in the improvement efforts but on the other hand if the goal and the importance of the outcome would not significantly improve the situation of the contributors is the invested time and effort adequate?

The current IT organisation had been going through a notable change process were two different companies merged and in addition also worked with several suppliers to deliver the IT services. This work just behind and the IT process environment still being executed with old and new processes and old and new responsibilities would need to go through a more significant revamp of the overall situation before trying to fix individual process areas and related roles.

It became evident that there are still people who are executing their responsibilities with old tools, old processes and old responsibilities – implementation to one IT environment is

still ongoing or the transition had not yet been started. Recommendation would be to have a change project initiated to first analyse the areas of transition work required with definition of the magnitude required. And then the follow up projects would secure the individual process remodelling with required activities.

Outcome of the carried-out activities resulted in the renaming of the process to better describe the process interfaces and outcome and this renaming already indicates that the Company X IT process landscape as whole would require remodelling and not only focus on individual process entities.

### 5.4 Conclusions on the readiness to take the KAIZEN™ model into use

Transforming an organization is hard. Creating a learning culture across two kinds of cultures or even across multiple locations around the world – is even harder. Companies are usually looking at cost as the key driver for any changes instead of individual needs of employees. To focus on individual learning and change, this would help the entire organization to learn and would span both the culture issues (organizational and local) but also it would promote individual learning (Conner Marcia et all 2004, p285)

During the execution of the survey and the workshop the cost was never the driver for the process optimization work in the company. Hence it would be possible to use the Kaizen way of executing the process performance improvements. The Company X IT leadership team would need to be introduce to the Kaizen ™ method to improve their KAIZEN™ awareness.

The traditional way of trying to optimize processes is bring in more people to execute work when the Kaizen™ method will help to understand how the current people/workforce can execute things by standardizing work and therefore increasing the turnaround time and the actions done during the same elapsed time.

#### 5.4.1 Benefits of KAIZEN™ in use

Company X would need to look at the current problems and opportunities at hand. If the company is not willing to invest time and effort in incremental improvement and cherish a continuous improvement cycle there would be any direct actions to increase revenue and grow the company. Of course, the company can do project type of investments to increase the revenue to grow the company but those will be considered as one of project

investments that will later result in potential higher OPEX/CAPEX due to need for additional headcount, machinery etc.

Once the Company X has identified the problem the next step is to understand the root cause of the problem. Essential is to understand the difference here between company strategy and the improvement system that Kaizen™ methodology will introduce via the implementation of the KAIZEN™ Business system (KBS). The whole idea with the introduction of the KBS is to understand the impact on the product system, in the case of the company on the impact of the process team and the related stakeholders executing the different process steps having an outcome on the service delivery to the customers. KBS is not going to work alone on improving the company strategy planning, innovation, marketing, sales etc. (figure 21). The improvement work will focus on the people on the field, operators working on delivering the processes, executing the processes and designing the processes to secure successful delivery of the IT services end to end. And all the above will contribute in Business excellence and growth.


Figure 24: Role of Kaizen in Company Strategy @copyright KAIZEN™ Institute. All rights reserved

Outcome of the process improvements and the deployment of a KBS will result into growth. Customers of the IT services will be able to faster receive their desired service, new service launches will be quicker and the transparency to the IT services will be secured through an improved traceability of the different actions from request to delivery.

Quality of the individual service requests and service tickets will be improved since the customers are able to understand the IT services and related dependencies better and therefore request more specifically what is the service or component required. Once the

request is more specific the turnaround time in the execution engine will be improved since the field engineers do not need to go back in the delivery chain to ask for clarification or additional input to understand what is required.

Once the implementation of KBS is improving the transparency into the process flow and the required actions also the understanding and motivation of the individual contributors will increase and result into clarity of own area of responsibility and improved job satisfaction.

For the company to get the KBS implemented and deployed to its organization they would need to make a onetime investment and invite a Kaizen™ coach to execute the Kaizen™ projects.

The fundamental Principles of the KAIZEN™ methodology is to 1) create customer value by identifying customer interests and improve customer experience, 2) Improve the efficiency by removing Muda (examples of Muda; waiting of people, waiting of material and information, movement of people, movement of material and information, excess of production, excess of processing, mistakes that cause rejects and rework). 3) Gemba effectiveness (Gemba is the place where values I added and the reality rules.) by increasing density of value transfer of from resources to flow units 4) People engagement and motivation through improvement of work process and environments. Engagement of people to Gemba Kaizen workshops. 5) Visual management by discovering non-value adding (N.V.A) and value adding (V.A) activities and actions. And improved process flow proofing and improved collaboration (Kaizen Institute, KBS: Kaizen Business system material)

### 5.4.2 How to take KAIZEN™ Business System into use

A KAIZEN™ coach is instrumental to ensure sufficient and right KAIZEN™ methodology to be implemented. The work starts always in understanding the background and the need. Usually this parts answers to the discovered problem. In this case of the thesis the background is that: current IT Process landscape is fragmented, and it is not meeting the needs of the customer requirements. The IT organization is merged out of 2 legacy IT organizations and the transition to one entity is still ongoing without a change project ongoing. Continuous improvement framework for process is weak or missing, not supporting systematic improvements of the IT process landscape. (Kaizen Institute, KBS: KAIZEN™ Business system material)

Once the background and the need are understood the next level of planning containing the solution and the deliverables are needed. This part for the Company X IT would require containing a designed KAIZEN™ Continuous Improvement process framework project with selected values streams to be analyzed and desired stated defined. Additionally, this phase would need to agree on the step by step implementation of the desired Kaizen events according to the roadmaps (outcomes from the value stream design workshops). Implementation of mission control to ensure successful implementation and a daily Kaizen implementation designed to ensure Daily management system sustainability. (Kaizen Institute, KBS: Kaizen Business system material)

The proposal for an KAIZEN™ project could contain 2 Project phases. Phase 1 focusing on the Preparations and the Pilot of Kaizen ™ implementation. Phase 2 focusing on the KAIZEN™ implementation and Expansion.

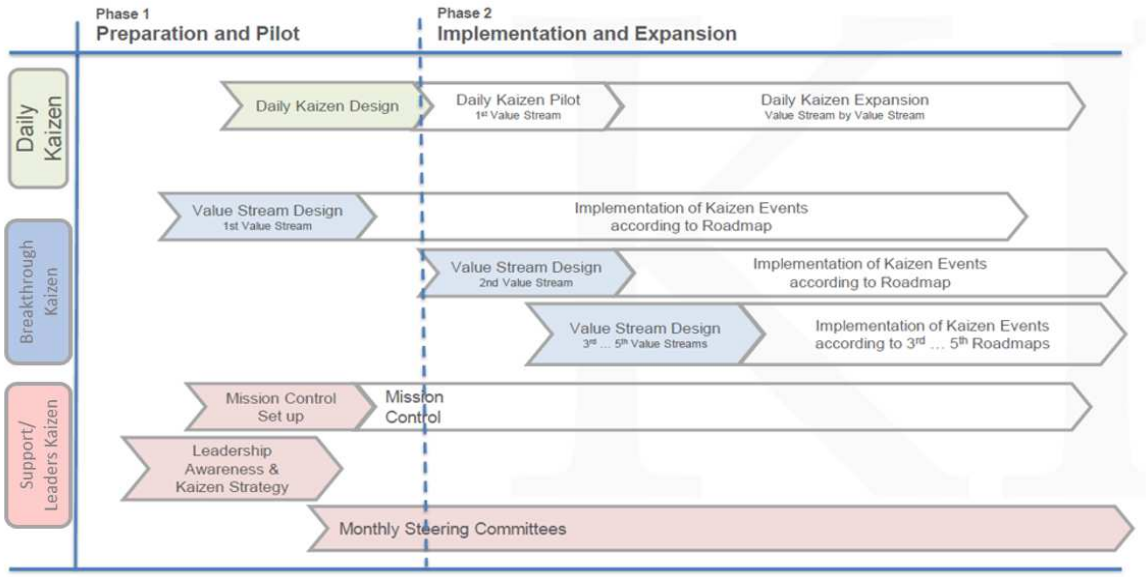


Figure 25: KAIZEN™ Project proposal © Copyright KAIZEN™ Institute.

Phase 1 will give the detailed plan for Phase 2: Daily KAIZEN™ Design and Value stream design deliverables are roadmaps for Daily KAIZEN™ and KAIZEN™ Events implementation. (Kaizen Institute, KBS: KAIZEN™ Business system material)

Each of these phases, Daily KAIZEN™, Breakthrough KAIZEN™ and Support KAIZEN™ contains different objectives with different level content and with separate objectives. Each phase will also require participants to be available and empowered for the activities with different time durations. All these individual things, objectives, content and deliverables needs to be tailored and evaluated by an official trained KAIZEN™ Coach from the KAIZEN institute.

One example about the proposed implementation. Explaining the 3 level of KAIZEN™ events; Support KAIZEN™ to ensure that the Management awareness and commitment is in place. There is and agreed strategy and vision. Breakthrough KAIZEN™ is focusing on defining the current state and the future state with a transformation plan. And the through a series of activities such as value stream analyses, values stream design taking the result to a series of workshops where the implementation of the identified items will take place use case per use case. (Kaizen Institute, KBS: KAIZEN™ Business system material)

Final stage is the Daily KAIZEN™ where the team leader will be taught how to sustain the new mindset in the daily operations on the Gemba, how to secure the new culture of continuous improvements and how to support the team members to move and stay in the new culture of continuous improvement. (Kaizen Institute, KBS: KAIZEN™ Business system material)

| | Kaizen Event Name | Objectives | Content | Deliverables |
|---|---|---|---|---|
| Support / Leaders Kaizen - Management | Leadeship, Awarness, Kaizen strategy | Increase Awarness of Managment role<br>Training for "Kaizen System Planning"<br>Link Lean targets to finanicals | - What is Kaizen<br>- Benefits of Kaizen<br>- Kaizen Change management<br>- Learning effort & Leadership Challenges<br>- Kaizen stratey Planning Process<br>- Seeing is believing - visit | - Management awareness in place<br>- management commitment ensured<br>- Kaizen strategy |
| | Mission control | Set obey to control implementation, define and implement visual project management.<br>Train project Managers | - Train Project Managers&Coaches<br>- Design Obeya Room Elements (improve Planning and Control<br>Implement risk managmeent<br>- Implement Barashi control (quality control of Deliverables)<br>- Follow Metrics and Prevent Problems | Project performance Management |
| Breakthrough Kaizen - Breakthrough Results | Value Stream Selection | Identify Value stream base on Business Opportunities | | Scope of Value stream Design |
| | Value Stream Design (each VS) | Map the current state, define future state and identify Kaizen events for Value streams accordingly<br>(Value stream analyses > value stram Design -> Kaizen event Roadmap | - Current state map (Gemba validated and quantified)<br>- Future state map (vision)<br>- Implementation Plan (with Kaizen events, including expert events)<br>- ROI calculations<br>- business case for management approval | Transformation plan for Phase 2<br>- a breakthrough implementaiton plan<br>- the detailed plan to achieve Strategic targets<br>- A collaborative transformation Plan |
| | Phase 1-2; Kaizen events | Step by Step implementation of Value streams´Future state in Kaizen events (according to roadmap) | - 3 to 5 day workshops to implement future state vision step by step<br>- Approach selected case by case<br>- Details are planned in VSD event | Value Stream results |
| Daily Kaizen - People | Daily Kaizen Design | Define daily managment system and levels | - Plan daily management system content<br>-Define traiing content<br>- Define training plan | - Company X Daily Management System<br>- Training plan |
| | Phase 2: Daily Kaizen Pilot, Train the Trainer | Change Gemba Leaders mind-set, sustain improvement results, contnual Improvements | Team leaders implement on the job with their team members | Value stream result sustainment<br>Tem leaders/group leaders Best practice |
| | Phase 2: Daily Kaizen Expansion | Change Gemba Leaders mind-set, sustain improvement results, contnual Improvements | Team leaders implement on the job with their team members | Value stream result sustainment<br>Tem leaders/group leaders Best practice |

Figure 26: Project phase 1: Preparation and Pilot of Kaizen Implementation and Project phase 2: Kaizen implementation and expansion. © Copyright KAIZEN Institute.

Part of the overall engagement of the different roles within a company and the required contribution the following table

| Top management | Middle Management and Staff | Supervisors | Workers |
|---|---|---|---|
| Be determined to introduce KAIZEN as a corporate Strategy | Deploy and implement KAIZEN goals as directed by Top management through policy deployment and cross-functional management | use KAIZEN in Functional roles | Engage in KAIZEN through the suggestion system and small-group activities |
| Provide support and direction for KAIZEN by allocating resources | Use KAIZEN in functional capabilities | Forumlate plans for KAIZEN and provide guidance to workers | Practices discipline in the workshop |
| Establish Policy for Kaizen and cross-functional goals | Establish, maintain and upgrade standards | Improve communication with workers and sustain high morale | Engage in Continuous self-development to become better problem solvers |
| Realize KAIZEN goal through policy deployments and audits | Make employees KAIZEN conscious through intensive training programs | Support small group activities (such as quality circles) and the individual suggestion system | Enhance skills and job performance expertise with cross-education. |
| Build systems, procedures, and structures conductive to KAIZEN | Help Employees develop skills and tools for problem solving | Introduce discipline in the workshops | |
| | | Provide Kaizen Suggestions | |

Figure 27: show the high- level split. Kaizen implementation and expansion. © Copyright KAIZEN Institute.

### 5.5 Reliability and Validity

The reliability and validity of the thesis must be considered in the very beginning of the research process. The question is about the asessability of the methods and the whole thesis (Kananen Jorma, 2011, p 67.)

This research baseline data construction was done with a data triangulation to obtain data credibility: data was collected from stakeholders of the process, process owners, process designers, decision makers, portfolio team and other key people. This made the research more likely to give a true picture on situation end to end and not only from a certain part of the process or a certain focus point of the process flow. On the other hand, the whole team was exposed to the overall survey results and written generic feedback prior to the deep-dive workshop, without disclosing the person who gave the feedback. The surveyed or interviewed (48 people), workshop team members (11 people) and the process owners/managers of the end to end Service Management lifecycle process (8 people, of which

partly the same as the workshop team members and survey members) form only a small group of people all acting in Company X IT with different interactions with the process in scope.

The research results confirmed the understanding of the issues such as lack of transparency, long turnaround time of single requests and unclear ownership. The recommended corrective actions and proposals for simplifying the overall process diagram was immediately actioned to the process team and rework started with a smaller group of people. The research could be applied to some extent also in other companies wanting to streamline, optimize and automate the process flows, remove waste and unproductive efforts.

The result of the surveys was analyzed by a small working team and presented to the Company X IT leadership team. No answers by individuals were shown nor discussed but rather the summary of the findings and the results of the average of each question. Company X IT leadership team confirmed that they shared the opinion and proposals for actions proposed by the working team.

The research is dependent on the context because of the restricted availability of the notes on improvement efforts, the resulted best practice documentation, baseline and result analysis making it impossible for a researcher outside Company X to follow the same approach in all aspects – but the usage of the KAIZEN™ methodology and the KAIZEN™ events is a global methodology that needs to be adapted for each case separately. The situation with the End to End service management lifecycle management model has been constantly evolving and improvements are tangible additionally the services using the process are frequently changing due to new customer demands and requirements, so the results wouldn´t be the same even if the research was repeated the same way and with the same people. The research design and overall research approach is public, and it can be well utilized in other studies.

If there would have been an opportunity to introduce the KAIZEN™ methodology in the deep dive sessions conducted as workshops this would have ensured that the process owners of the process will be more engaged throughout the journey since they will see and hear the feedback with the actions and activities impacting the problem but also the resolution. The presence of the leadership team and management in the workshops contributed to the increased awareness of the importance of the topic. Development ideas and improvement actions were signed off by the Head of the process team and presented to the Company X IT Leadership team.

Majority of the sources used in this thesis are input in various formats (books, presentations, videos, conference material, publications etc.) by Kaizen Institute. Masaaki Imai founded in 1985 and then also the KAIZEN™ methodology was introduced to the world. The methodology has and is still developing together with the clients that are using Kaizen Institute support to the companies' journey of adapting the sustainable continuous improvement mindset and techniques. During the recent years there are literature that are trying to explain and question Kaizen methodology – one of them being Jon Miller, Mike Wroblewski and Jaime Villaufuerte; Creating a Kaizen Culture (2014), used also as reference in this thesis. In this book the overall statement is that Transforming a culture is far more about emotional growth than technique maturity. But overall the Kaizen methodology is recognized as one option of a proven method that will dramatically increase the chances of success in implementing a Kaizen culture by closing the biggest gaps in the correct understanding of: 1) what Kaizen culture is and why we need it 2) how everyone, everywhere can practice Kaizen every day and 3) what the leaders role is in turning Kaizen culture into competitive advantage. My only criticism for the content is that it always needs someone to explain what the different steps, pictures and process flows means in practice. By you just reading and trying to absorb on your own one will be missing essential understanding of the why? Why something is done as it is. How and what needs to be done becomes clear but the why is left someone hidden.

# 6 Discussion and Further development

There is no question about the effectiveness of different standardized methodologies that they will be the key drivers to execute process improvements and the way to support improving our ways of working. Is Kaizen the best methodology? At least there are many good references showing that huge corporations (Danaher, Zara, Bosch, Honeywell, Toyota, Porsche etc.) have adapted the Kaizen methodology to be part of their daily operational culture and through these efforts the companies have been able to achieve a continuous growth and continuous improved motivation amongst their employees. The benefits in those companies that have introduced Kaizen has led to improved quality and greater productivity. Justification for Kaizen can also be seen via following references:
EFQM Global Excellence Prize Winner in Harnessing Creativity & Innovation
Bosch Car Multimedia Portugal https://blog.bpir.com/business-excellence/efqm-excellence-award-winners-2017-and-14-new-success-stories/

The study focused in improving Company X of processes with own tools and methods. It would have been interesting to do two parallel studies one using the Company X own tooling and one processes and simultaneously run the execution with the KAIZEN™ method and compare the outcome. But this opportunity was not possible to be done due to time constraints and lack of funding for using an external KAIZEN™ consultant. The first round of survey results was used to improve the short-term issues and problems identified. The second set of results from the follow up survey was stored and to be used by the Company X process team for further evaluation and work going forward.

As an outcome the study resulted in an improved process flow with clarities in many areas, but also still many open actions and other items remained to be worked on. But after the project execution was done there was very few who promised to take care of the remaining agreed actions. Commitment from the team disappeared after the workshops were conducted and that was also visible in the willingness to conduct the follow up survey. The outcome of the process improvements by using Company X own process improvement (RQ1) was a remodelled process diagram, architecture picture, showing the updated swim lanes with clarified responsibilities and flows of data. During the workshops the participants also made the conclusion that the name of the original process did not really meet the purpose of the process so the name was changed to reflect the real process value.

How could an organisation implement the mindset of continuous improvement to the daily activities? How could an organisation change from project driven efforts to improve to an ongoing cycle of innovating, improving and increasing performance? Kaizen´s model of continuous improvement is embedded in the KBS and part of the implementation all people part of the operations will be engaged in the deployment of the KBS system. There are activities for all levels in the organisation that will secure the transparency to all areas of flow efficiency, growth, people, performance and quality. The goal is to create customer, stakeholder and employee long term value.

What would have been different by using the KAIZEN™ method for process improvements instead of the company own process improvement method (RQ2)? KAIZEN™ method would have enforced the work to be conducted in one location, with people in the same space also investigating the actual Gemba, how things are done on operational level including all parties of the delivery chain and not only a subset of the people representing majority of the activities. In a Kaizen event the goal is to engage all parties and identify what is relevant, what is the order of the things carried out, what are the activities required, standardizing every phase independent of who is executing and then creating

the visual outlook. In each of the phases the waste or unnecessary actions/steps or interactions are identified and removed.

By using the Company X own process improvement method, the outcome was still debatable and people executing similar kind of things continued executing them with his own methods instead of standardizing and making things visually clear how they should be conducted. Discussion about waste and understanding what is considered as waste was misunderstood since the process continued to exist in the tooling to provide transparency by also manual activities outside the tooling was conducted and these were not standardized nor documented.

Outcome of the workshops and the improvement project was appreciated by the Company X IT Leadership team and seen as a solving many of the ongoing issues and problems. My view is that the work conducted just improved the situation for short term and there is no guarantee that the way things are executed that they would not go back to how they used to be before the work started. The whole area of processes in this company would require a bigger change journey to ensure that the harmonization, standardization and optimization of all processes would take place.

The world is changing rapidly and the amount of data at our hands and in use is exploding, if companies do not act now to standardize and invest in the future the risk of failing later will increase. To be able to use efficiently the opportunities that artificial intelligence and the robotics offers companies must understand the process landscape better to be able to understand the options that artificial intelligence and robotics can offer.

Kaizen offers also the methodology to do short term investments and work in more agile way, by being able to see improvements in increments rather that end results of long term development projects. Kaizen brings the value above other process methodologies in the sense that it can be fully embedded to all layers of the organisation part of the normal day to day operational tasks.

Companies needs to start to think more in a problem-solving way what can I do it with existing people, existing competencies to reach the target. To be able to analyse where are we now and where do we want to reach? How to tackle the gap? Rather than using the old way of thinking: We do not have the money nor the people. So why change?

Companies willing to start the journey of a new culture of continuous improvement, to implement KAIZEN™ needs to commonly on Management level agree and set the vision for

the entire operations. (RQ3). Once the decision and direction are made the inhiation with the Kaizen Business consultant is the next step to secure the right model definition and implementation.

During the thesis journey I learned a lot about the importance of using a commonly agreed, known and trained methodology. And I would say that this would apply for any type of project work. Each counterpart in the project would need to know what the goal or target is and how the work will be done to achieve the goal. What is the methodology and what are the ways of conducting the needed work. In case all counterparts are not aware or not knowing what and how things are to be done there is a huge risk that a lot of effort is put on items that do not bring value. The organisation in scope of the work was distributed in many locations and many time zones and this impacted also how the workshops were conducted. People got distracted by other things and the technology constraints cause own flavour of difficulties.

As a learning I would have considered to compare 2 different methodologies to find out advantages and disadvantages between different methodologies. Kaizen™ is one methodology among others including many of other industry known standards and methodologies. But to compare officially standardized methodologies with each other's would have benefited to share more insight into the disadvantage of using Company X own unstandardized way of improving processes.

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# Appendices

## Appendix 1. Survey questions

Dear Stakeholder of the End to End Service Management Lifecycle process. Company x IT has decided to investigate opportunities to improve, automate and streamline some of our key processes touching many interfaces, users and tools, and End to End Service Management life cycle is one of our key processes. We are inviting you to share your experiences and feedback about the current process, current way of working, tooling and resourcing. This survey will provide the working team with valuable feedback about the current situation and pin point the challenges we are facing today.
Please use 10-20 min to complete the survey, if you rather want to share you feedback in an interview please contact me directly and I will schedule an interview.

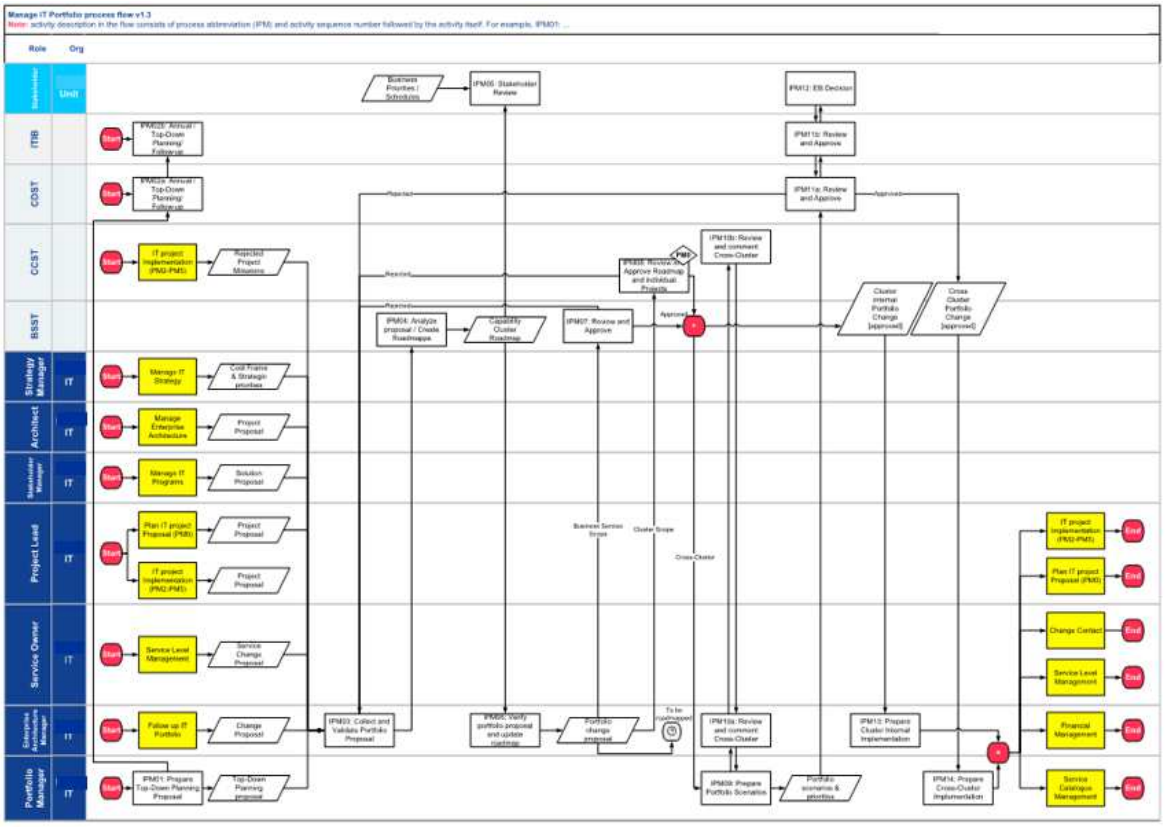
Scale 1-5 where scale is very unsatisfied = 1, unsatisfied = 2, neutral = 3, satisfied = 4, Very satisfied =5
answer 0, if no experience nor knowledge/understanding

Questions:

1) According to your experience how efficient is the e2e service lifecycle management process?
2) According to your experience how transparent is the process
3) According to your experience how well are process steps defined in the e2e service lifecycle management process
4) According to your experience how well are the roles defined
5) According to your experience how well are the roles defined
6) According to your experience how well is the accountability executed for the different parts
7) According to your experience how well is the process documented
8) According to your experience how well are the roles documented
9) According to your experience how satisfying is the duration of the process execution
10) According to your experience how well is the tooling working for the process?
11) Free text: Written comments if any

## Appendix 2. Legacy End to End Service Management lifecycle process

This is the original process flow – prior to starting the improvement activities.



**Appendix 3. Interview results**

Scale 1-5 where scale is very unsatisfied = 1, unsatisfied = 2, neutral = 3, satisfied = 4, Very satisfied =5

answer 0 if no experience nor knowledge/understanding

| | According to your own experience **how efficient** is the e2e process? | According to your experience **how transparent** is the process | According to your experience how well are **process steps defined** in the e2e process | According to your experience **how well are process steps defined** in the e2e process | According to your experience **how well is the accountability executed** for the different parts |
|---|---|---|---|---|---|
| 5 | 0 | 0 | 0 | 0 | 0 |
| 4 | 1 | 0 | 0 | 1 | 2 |
| 3 | 12 | 7 | 8 | 6 | 28 |
| 2 | 18 | 19 | 19 | 34 | 14 |
| 1 | 16 | 21 | 15 | 0 | 3 |
| 0 | 0 | 0 | 5 | 6 | 0 |
| Responses | 48 | 48 | 48 | 48 | 48 |
| Average | 1,96 | 1,71 | 1,65 | 1,92 | 2,63 |
| Average Excl. 0 | 1,92 | 1,67 | 1,84 | 2,14 | 2,63 |

| | According to your experience how well is the **accountability executed** for the different parts | According to your experience **how well is the process documented** | According to your experience how well are the **roles documented** | According to your experience **how satisfying is the duration** of the process execution | According to your experience how well is the **tooling working** for the process? |
|---|---|---|---|---|---|
| 5 | 0 | 0 | 0 | 0 | 0 |
| 4 | 1 | 1 | 0 | 0 | 0 |
| 3 | 12 | 12 | 7 | 2 | 0 |
| 2 | 17 | 19 | 17 | 36 | 2 |
| 1 | 11 | 15 | 18 | 27 | 29 |
| 0 | 6 | 0 | 5 | 0 | 16 |
| Responses | 47 | 47 | 47 | 47 | 47 |
| Average | 1,81 | 1,98 | 1,56 | 1,48 | 0,71 |
| Average Excl. 0 | 2,1 | 1,94 | 1,74 | 1,44 | 1,06 |

| | | | | | |
|---|---|---|---|---|---|
| Online response | 34 | 34 | 34 | 34 | 34 |
| Interview response | 14 | 14 | 14 | 14 | 14 |

**Appendix 4. Meeting invitation to the kick-off meeting**

Dear Process community member,

It is our pleasure to invite you to the End to End Service Management Lifecycle process workshop. Company X IT Leadership team has recognized the importance of the process remodelling and hence we are now taking the next steps to improve the turnaround time, transparency and role/responsibility clarification of the End to End Service Management Lifecycle process.

We are inviting You, as one of key stakeholders, to join our 3-day workshop (6h/each). Invitation attached. The workshop will be conducted virtually, please reserve videoconferencing facilities.

Behind these links you will find the material for the pre-study:
Survey results
End to End Service management life cycle process flow

End to End Service management life cycle process roles and responsibilities
Ecosystem Handbook
RACI matrix

Preparation needed from participants

1. Clarify and consider to yourself purpose of the process
2. Consider scope, collect facts (templates, screenshots, documents) about input and deliverables requirements in process contact points, starting and ending point
3. Data collection, how many IT portfolio changes are done, which type of changes or projects are majority
4. Performance data, how quickly changes are implemented, how well customer requirements fulfilled?

In case you need more information or are unable to access some part of the documentation please contact IT Process department

Please ensure your availability
Kind regards
IT Process department

**Appendix 5. Key pain points: Action items from the workshop**

Provide improved Documentation and Training deliverables: September/October

- Provide short, concise quick guides and training knowledge articles on key pain points
- Document process flow showing required pre-requisites including governance checks
- Produce an E2E service mgmt high level process description (5-10 pages) showing connections with other processes (PMM, financial, etc.)
- Create RACI and field definition short guides
- Potential to implement Service Creation MDM template/ Excel form in PMM for MDM requests.
- Identify areas for Simplification
- Service Cost validation at IRC/Variance Process are being reinforced

Develop a simplified Service Creation process for Small/Simple Services

- Separate project-initiated Service Creation process from simple service creation requests and create a simplified process stream to ensure quicker turnarounds and less rework
- Business Managed, Sandbox, IT Hosted (Azure or MPC cloud) type services)
- Selection Criteria to be finalized (minimal service costs, cloud, etc.)
- MDM template to be created and implemented with fewer mandatory fields (pre-populate default fields)
- Pre-Requisites: Approved Business funding agreement and Cost Center (where required)

Demand Management Simplification Initiative to be worked as a priority

- Prioritized parallel track to have the demand process discussed and harmonized, with potential Atos support (to be discussed) for "hyper care" on the decom demand category as well as to support the simplified BU Managed Service Creation process (“Scenario 2”).

**Appendix 6. Survey questions after the process remodelling**

Dear Stakeholder of the End to End Service Management Lifecycle process. Company x IT has invested during couple of months, time and effort to improve, automate and streamline some of our key processes touching many interfaces, users and tools, and End to End Service Management life cycle is one of our key processes. As you have been made aware we have now launched the new process and it has been operating for 4 weeks. We are now inviting you to share your experiences and feedback about the new process, current way of working, tooling and resourcing. This survey will provide the working team with valuable feedback about the situation.

Please use 10-20 min to complete the survey, if you rather want to share you feedback in an interview please contact me directly and I will schedule an interview.

Scale 1-5 where scale is very unsatisfied = 1, unsatisfied = 2, neutral = 3, satisfied = 4, Very satisfied =5
answer 0, if no experience nor knowledge/understanding

## Questions:

1) According to your experience how efficient is the new e2e service lifecycle management process?
2) According to your experience how transparent is the process
3) According to your experience how well are process steps defined in the e2e service lifecycle management process
4) According to your experience how well are the roles defined
5) According to your experience how well are the roles defined
6) According to your experience how well is the accountability executed for the different parts
7) According to your experience how well is the process documented
8) According to your experience how well are the roles documented
9) According to your experience how satisfying is the duration of the process execution
10) According to your experience how well is the tooling working for the process?
11) Free text: Written comments if any

| | According to your own experience **how efficient** is the e2e process? | According to your experience **how transparent** is the process | According to your experience how well are **process steps defined** in the e2e process | According to your experience **how well are process steps defined** in the e2e process | According to your experience **how well is the accountability executed** for the different parts |
|---|---|---|---|---|---|
| 5 | 9 | 16 | 16 | 6 | 8 |
| 4 | 23 | 24 | 22 | 31 | 25 |
| 3 | 5 | 0 | 2 | 3 | 7 |
| 2 | 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| Responses | 40 | 40 | 40 | 40 | 40 |
| Average | 3,33 | 3,67 | 3,63 | 3,40 | 3,31 |
| Average Excl. 0 | 3,33 | 3,67 | 3,63 | 3,40 | 3,31 |

| | According to your experience how well is the accountability executed for the different parts | According to your experience how well is the process documented | According to your experience how well are the roles documented | According to your experience how satisfying is the duration of the process execution | According to your experience how well is the tooling working for the process? |
|---|---|---|---|---|---|
| 5 | 8 | 19 | 7 | 13 | 17 |
| 4 | 25 | 19 | 25 | 22 | 20 |
| 3 | 7 | 2 | 8 | 5 | 3 |
| 2 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| Responses | 40 | 40 | 40 | 40 | 40 |
| Average | 3,35 | 3,69 | 3,31 | 3,50 | 3,63 |
| Average Excl. 0 | 3,35 | 3,69 | 3,31 | 3,50 | 3,63 |

| | | | | | |
|---|---|---|---|---|---|
| Online response | 30 | 30 | 30 | 30 | 30 |
| Interview response | 10 | 10 | 10 | 10 | 10 |

## Appendix 7. New End to End Service Management lifecycle process

The remodelled process flow after the first round of survey and the deep dive workshops.