

Master's thesis

Service design

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OPERATIONAL EXCELLENCE

A case study



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Service design is an iterative, human-centered process that is focused on finding solutions or strategies to overcome customers' problems. Although effective many large service providers have been turning to other improvement approaches such as lean and six sigma to help improve their quality, reduce costs, and increase their overall operating efficiency. This can then lead to different strategies, methodologies, and approaches being used across a business which potentially creates confusion and wastes resources.

The aim of this case study was to determine whether or not a holistic approach to service improvement using the concept of operational excellence could be used. By using this approach a business could potentially improve the effectiveness of its innovation, design, and development of new products and services. Understanding the similarities between the different improvement methods and their intent is important because it could allow companies to better leverage the benefits of each approach to ultimately build better products and services.

In order to answer this question a case study was used on a Nordic financial services business with around 7000 employees. The focus centered on their digital and operational development teams who used a variety of improvement methods ranging from service design, agile and lean. The case study was run for a period of 6 months and included a number of different research methods including interviews, observations, and benchmarking.

From the results of the study, it was found that using multiple improvement methods in isolation did create waste and inefficiency within the business. The methods focused on their own respective area without consideration of areas of the business that were not within the scope of their activity. This resulted in tactical-level improvements that did not leverage the full capabilities of the improvement approach that they were using. Some of the issues identified could be improved by taking a more strategic approach and by refining the current way of working however, an operational excellence framework would provide the case study business with a clearer structure for driving improvement that would also help drive better collaboration and ensure a more strategic approach.

KEYWORDS:

Service design, Lean, Agile, Operational excellence

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1 INTRODUCTION

1.1 Service sector importance

Throughout twentieth century, manufacturing has been the dominant business sector in the developed world, however during the 21st century there has been a rapid change with the service sector now becoming the most dominant sector (Saco & Goncalves, 2008, pp. 10-19). The rise has been so rapid that in 2019 the service sector globally accounted for 55 percent of Gross Domestic Product (GDP) and 45 percent of all employment (Gill, 2021). In the USA, and in the UK the growth was even more significant with three quarters of GDP coming from the service sector (Piercy & Rich, 2008, pp. 54-76). To provide a perspective to this, in 1950 services accounted for 32% of the USA's GDP (Time Linx, 2022). Figure 1 also provides additional insights into the service sector contribution to GDP in different regions of the world in 2020.

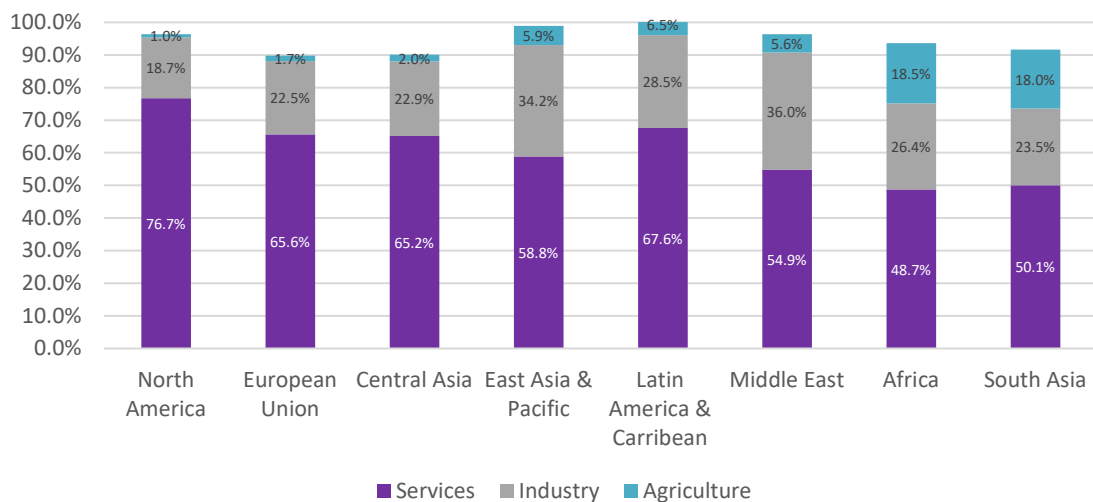


Figure 1. GDP growth in 2020 by region (O'Neill, 2020).

Over the next 5 to 10 years this growth will continue with western governments now considering the service sector to be the future source of their economic growth. Globally it is expected that the service industry will grow from approximately \$ 10814.49 billion in 2020 to \$ 15683.84 billion in 2025. In terms of market size, Asia Pacific is globally the largest region accounting for 35% of the total market in 2021. Coming in second place is North America with 27% of the global services market (Research and Markets, 2021.).

Aside from greater financial growth, the other benefit to the increase in the size of the service sector is that it will also drive further research and development. Businesses will no longer be restricted by face-to-face contact with their customers, and this will allow for new product features to be created and new markets to open (Gill, 2021).

With the increase in growth also comes increased competition. Interestingly, traditional manufacturing companies are now turning their attention to services. Jeneanne Rae from the consulting group Peer Insight, discusses that manufacturers are increasingly focused on this sector and are beginning to drive significant innovation in this area (Saco & Goncalves, 2008, pp. 10-19.).

1.2 Driving improvement

There are numerous approaches that businesses can take to ensure that they remain competitive in an ever-changing world. Service design for example has enabled companies to design simple and interactive customer journeys, which improve the customer experience however they are not always focused on the complexity and cost that can be added to internal systems or processes. For example additional data collection, increased number of processing steps and additional software connections can all be unwanted by-products of this type of development (Woudhuysen, 2011, pp. 235-248.).

Alternatively, increased global financial pressures from the beginning of the 21st century has led many large services providers to look into the lean improvement philosophy to help them become more competitive by reducing their operating costs whilst still maintaining their service quality (Vasudev & Parveen, 2013, pp. 604-608). However, this again is not always enough to remain competitive. Businesses also need to ensure their services and subsequent upgrades can enter a market before any of their competitors can develop something similar. As a result of this need, companies are turning to agile. By using faster, shorter development increments it allows businesses to develop their services and get them into the market faster, thus providing a competitive advantage (Lynn, 2022).

The ultimate challenge for a business then becomes whether they can fully leverage both the costs and the resources needed to manage the multiple improvement approaches required to keep their business effective and competitive.

1.3 Identifying the problem

My interest in this topic stems from experience working in numerous businesses across the United States, Australia, New Zealand, United Arab Emirates, and the Nordics. During these experiences I have seen multiple improvement approaches such as lean, agile, service design and Total Quality Management (TQM) deployed across a business ending up creating more issues than they solve. These are also not the only improvement options open to companies, as depicted in figure 2 below there are many others and it is expected that in the upcoming decade there will be new approaches developed.



Figure 2. Common improvement approaches.

The different improvement approaches that I have witnessed were all deployed by different areas of the business as siloed activities with little consideration to the cross over or similarities that they may have with one another. All these improvement approaches require their own organisational structures, frameworks and methods that then need to be trained across different teams. Each approach has its own relative strengths and weaknesses, so by taking a more focused and collaborative approach, a business may be able to leverage greater improvement which can then increase their competitiveness.

1.4 Aim of the study

The aim of this research is to determine whether an operational excellence framework could help businesses to not only have a strong focus on servicing their customer's needs, but also ensuring there is a strong focus and awareness on other aspects of the market competitiveness such as cost, complexity, and sustainability.

Specifically the thesis will answer the following two (2) questions:

1. How can an overarching operational excellence framework be used to make better use of improvement resources and capabilities within a service business?
2. What benefits does the operational excellence framework bring to a service provider?

A case study will be used to provide the research required for this thesis as part of an internal project that is being run by the author for a large financial services company which operates across Denmark, Finland, Norway, Sweden, Estonia, Latvia and Lithuania. It employs approximately 7000 employees and currently uses service design, agile and lean in different areas of its business.

1.5 Frame of reference

The frame of reference for this thesis seeks to understand the similarities between the different improvement approaches commonly used in the service industry. As illustrated in figure 3 each of the improvement approaches has a distinct improvement focus area. Agile is focused on delivering services to customers in shorter, more frequent cycles. Lean is focused on understanding a customer's wants and needs, then eliminating all the non-value-added activities in order to reduce cost within the business. Service design is focused on understanding the wants and needs of a customer so that the best possible service can be provided to them. Although all 3 improvement approaches have different focus areas, they all have similar requirements that need to be met, such as requiring empowered teams, a constant focus on continuous improvement and needing high levels of collaboration within a business.

By understanding the commonality between improvement approaches, companies can look to better utilise the different knowledge and skills to drive true business wide improvement. This would prevent a business from running multiple improvement streams such as service design, lean and agile in isolation. The ultimate aim of using this combined approach is to eliminate duplication and wasted resources by establishing a unified improvement framework with a more aligned strategic focus. This combined approach is called operational excellence.

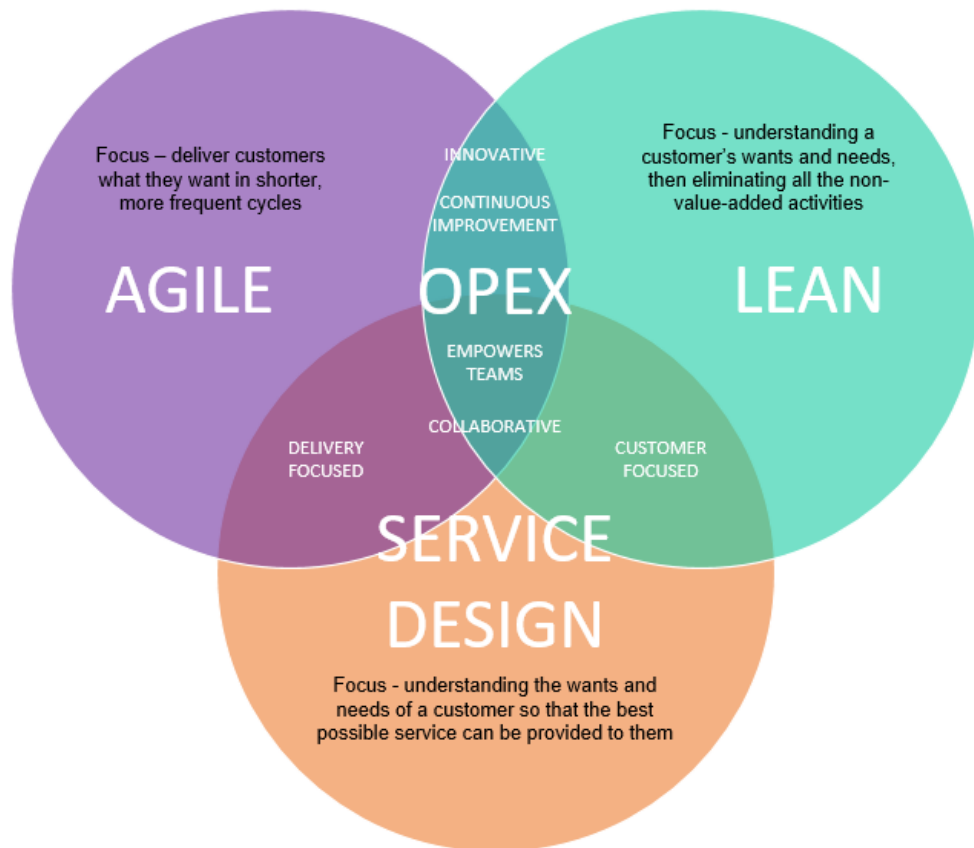


Figure 3. Frame of reference.

For the purpose of clarity, the concept of lean in this thesis relates specifically to the concept originating from the manufacturing industry. Lean canvas or lean service are different approaches and are excluded from this thesis (Yoshida, 2018). Neither of these approaches are used in the case study company.

1.6 Process chart

The thesis will be conducted using the double diamond approach. Originally the double diamond method was developed in 2005 by the Design Council in the United Kingdom and it provides a visual representation of the work that will be conducted (Drew, 2019). It also allows for improved flexibility as a variety of different methods can be used depending on the research need (Ball, 2019).

The approach as depicted in figure 4, uses four distinct phases: Discover, Define, Develop and Deliver (Drew, 2019). For the purposes of this project the discovery phase will cover the idea generation and desk research phase. The define phase will include initiating the case study research for the thesis. The research methods used will include

interviews, observation, cause and effect diagram and benchmarking. The develop phase will then include the analysis of the results and the formation of an improvement idea. The final phase, deliver will be the completion of an operational excellence prototype.

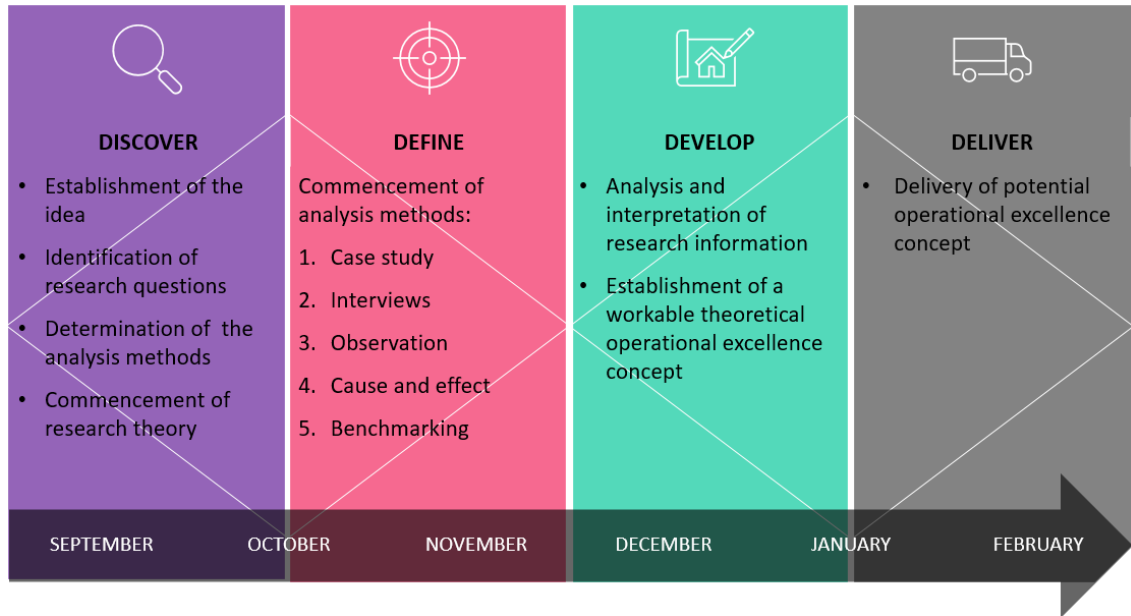


Figure 4. Thesis process chart.

2 ANALYSIS METHODS

2.1 Explanation of the approach

In order to answer the research questions a number of different qualitative methods will be used. Qualitative analysis is a subjective approach that is used to analyze information collected from different sources such as observations, customer feedback and interviews. Using this type of analysis allows for greater flexibility in the study (Vaughan, 2021). The aim of the different methods will be to capture insights and information that can identify current issues within the case study company and to provide ideas that can help develop a potential solution. The methods used in this study are detailed in the following sub chapters.

2.2 Case study

The case study technique has been used for many decades in a variety of different fields that include sociology, law, public sector, education and medicine (Zainal, 2007), and it is one of the most popular qualitative methods available (Rasheed et al., 2019). One of the main reasons for its popularity is that researchers were becoming concerned about the limitation in quantitative methods that were being used. Specifically the lack of consideration regarding the social and behavioural issues that could impact the research questions. (Zainal, 2007). Case studies on the other hand help identify key characteristics of a targeted topic and can assist with better understanding different aspects of the research material that is generated (McCombes, 2020). Essentially, they can explain, describe or explore events in everyday situations (Crowe, et al., 2011). Case studies do this by providing insights that help explain '*how*', '*what*' and '*why*' things occur. For example how is the improvement approach used by a particular team. By answering these questions more context can be provided to help explain a situation (Crowe, et al., 2011), and researchers can begin to understand the behavioural conditions of involved. (Zainal, 2007).

There are three main types of case study (Crowe, et al., 2011.). These include:

1. Intrinsic – The researcher is interested in a particular phenomenon.
2. Instrumental – The researcher focuses on a particular case to better understand a specific issue.

3. Collective – The researcher is interested in a broad perspective of a particular issue and will study multiple cases simultaneously or sequentially.

For the purposes of this study, the instrumental approach will be used.

Benefits of the method

The benefit of using this approach, which is summarised in figure 5, is that it is focused on the actual processes used in a company which then allows for a thorough investigation of the various techniques, ways of working, team structures and the strategy used (Davies & Beaumont, 2011). By studying the different approaches used in the environment where the activity takes place, it can provide more context to the information collected. Quantitative experimental studies on the other hand look to isolate a study in order to control the number of variables involved (Zainal, 2007).

The case study method is also flexible and can be adapted based on the information need. Different methods such as questionnaires, interviews or observation can also be used to provide extensive information that relates specifically to a team or area of the business (Murphy, 2014). The method can also be adapted to collect both qualitative and quantitative information if needed (Zainal, 2007).

As the case study describes the complexities of actual business situations and scenarios it is also a useful technique when developing future ideas for additional research topics. (Murphy, 2014). The in-depth and holistic nature of the method can generate new ideas and avenues for further research and development. (Zainal, 2007).

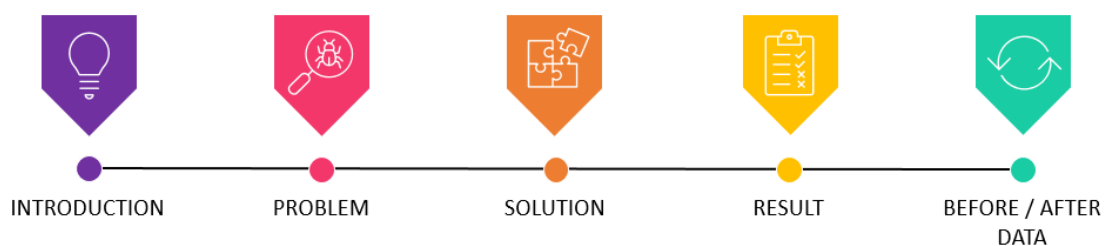


Figure 5. Elements of a case study (Price, 2021).

Limitations of the method

The potential limitations to using case studies for this thesis is that it will involve a single case study (Zainal, 2007). That is, only one company will be investigated which will lead to a limited amount of data and may not be indicative of other service-related companies.

The lack of data could also limit further empirical analysis techniques being used in the future (Davies & Beaumont, 2011).

Another limitation is that case studies can often be very difficult to conduct and take a considerable amount of time. There is also a risk of bias when using this technique as the interviews or observations can be focused on an area or topic to highlight the researchers' opinions or preferences.

As case studies relate to one specific business as in this study, the results are also not always easy to replicate, and depending on the size of the study they can be time consuming and expensive (Chegg, 2022). Also if case studies are not well structured and planned, excessive information can be generated that does not answer the proposed research questions (Zainal, 2007).

2.3 Interviews

A number of interviews will be conducted as part of this thesis to collect qualitative information that will be used to answer the research questions. This approach helps identify how people feel about a particular process, product, or service (Stickdorn et al., 2018b). This technique has been used for hundreds of years with the first recorded reference being in 1514. Since this time it has evolved and in 1945 Paul Felix Lazarsfeld introduced group discussions and the unstructured interview technique (Merriam Webster, 2022.). This has subsequently developed even further with new interview techniques such as the structured, semi structured and unstructured approaches (George, 2022). Specifically for this study the in-depth technique, which is also known as the open-ended method, will be used (Whorton, 2016). The method is summarised in figure 6.



Figure 6. Interview steps (Stickdorn, et al., 2018b).

Benefits

The benefit to using in depth interviews is that they are flexible in their design (Stickdorn et al., 2018b). They are also cheap to conduct and depending on people's availability, and quite quick to organize. Although the sample size of people involved is usually smaller than other techniques such as focus groups, the amount of information collected can be extensive due to the amount of time they get to speak (Boyce & Neale, (2006). For example in a focus group the individuals may only get a few minutes each to speak due to the number of people. In a 60-minute in-depth interview this is not an issue. It can also be simpler to get information from the interviewee as there is more intimacy in the process as they do not have to worry about what other group members may think (Whorton, 2016). Depending on if interviews are conducted face to face, additional information from body language, facial expressions or gestures can also be collected (Stickdorn et al., 2018b).

Another benefit to using interviews is that the technique allows the researcher to clarify questions if the interviewee is not clear or has not answered directly. They can also identify follow up questions to delve deeper into different topics if needed. Interviewees also are not biased by what other people's opinions are as they might be in a group situation. This results in generally higher quality data being produced (Boyce & Neale, (2006).

Limitations

There are a number of limitations that need to be considered when using this method. As is the case with many forms of qualitative research techniques, it can be biased by the researcher. It can also be difficult for a researcher if the interviewee is negative or non-compliant in answering the questions as this can make the session difficult to manage (Whorton, 2016). Ideally the interviewer should be trained in the appropriate techniques and have some knowledge of the topic that is being discussed. Much of the skill with this type of technique is in the type of questions being asked and the analysis of a person's body language (Stickdorn, et al., 2018b)

Although interviews can collect good in-depth information, they can be time consuming, particularly considering the number of people involved. Additional time is also required to transcribe the information collected and then analyze it (Boyce & Neale, (2006). To prevent these issues an interview guide will be used, and the number of interviews will

be limited to those people that have had direct involvement with the different improvement approaches.

2.4 Observation

The observation method is a qualitative technique that originated in the anthropologist and sociologist fields where it was used to get a firsthand perspective of different groups and how they interacted (Ross, 2014). This technique is flexible in nature and can be quickly adapted to capture different types of information (Stickdorn et al., 2018c). There are two different types of observation techniques, participant, and non-participant. The former involves the researcher being an active participant in the process that is being observed (Ross, 2014). By using this approach it allows subtle information and actions to be collected. In a non-participate observation session, the researcher observes but remains separate from the activity. The benefit to this approach is that it ensures that they do not adversely affect the process itself (Stickdorn et al., 2018c). For the purposes of this thesis both the participant and non-participant techniques will be used.

Benefits

This method, which is summarized in figure 7, is simple to use and can collect useful insights into how well a particular process is being performed. Participating with the group provides an in depth understanding of what actually happens (Ross, 2014), as it verifies that people actual do what they say they do (Carlborg, et al., 2013, pp. 291-304). Interesting and useful information can also be collected from observing peoples body language, and gestures. Again this can provide the researcher insights into how well participants actually interact in situations which may differ from how they would describe it themselves. If participants ignore certain steps or advice provided, this can also provide useful insights for a researcher (Service Design Tools, 2019).

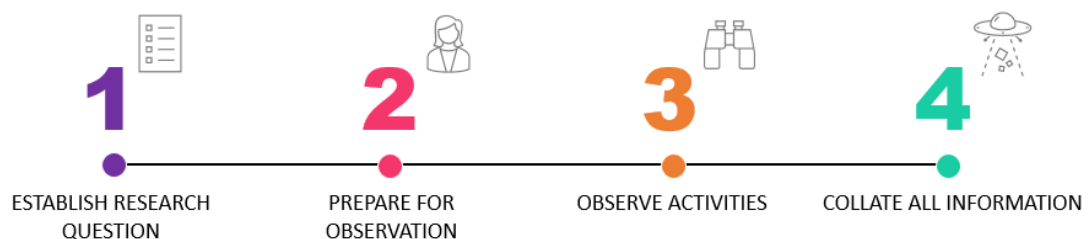


Figure 7. Observation steps (Ross, 2014).

Limitations

There are a number of considerations that need to be understood when using the observation method with the main one being the objectivity of the person conducting the observation (Carlborg, et al., 2013, pp. 291-304). Essentially it is the researchers view that is being used and, in some instances, it may not represent the actual people being observed (Stickdorn et al., 2018c). To overcome this, it is important that good field notes are taken especially if participating in the activity, and where possible data can be included to help ensure that there are no biases in the information (Ross, 2014).

Related to this issue is selectivity of the information captured by the researcher. To help overcome this it is important that the activity is captured in different situations over multiple sessions (Stickdorn et al., 2018c). By doing this it ensures that the behaviors and actions of one group in one situation do not represent a broader community of users. There are also ethical concerns related to this approach particularly if it is undertaken in a covert manner. In some instances this approach needs to be confirmed with the relevant group to ensure that the information can be used (Carlborg, et al., 2013, pp. 291-304.).

2.5 Cause and effect diagram

Cause and effect diagrams which are also known as fish bone diagrams, Ishikawa diagrams and herringbone diagrams, provide a visual overview of all potential causes related to a specific effect (Munro, et al., 2015b, pp. 102-125). It is a diagram-based technique that combines brainstorming with a form of mind mapping. Originally it was developed as a quality improvement tool to help discover the root cause of problems, but over time its use has expanded and is now commonly used to analyse a problem or to plan a complex change. It can also be used to uncover bottlenecks in a process or to identify where and why a process is not working (Westcott, 2006b, pp. 329-371). The method which is summarised in figure 8 was originally devised by Professor Kaoru Ishikawa, a pioneer of quality management in the 1960's and is considered one of the seven basic tools of quality control (Tague, 2005, pp. 93-519).

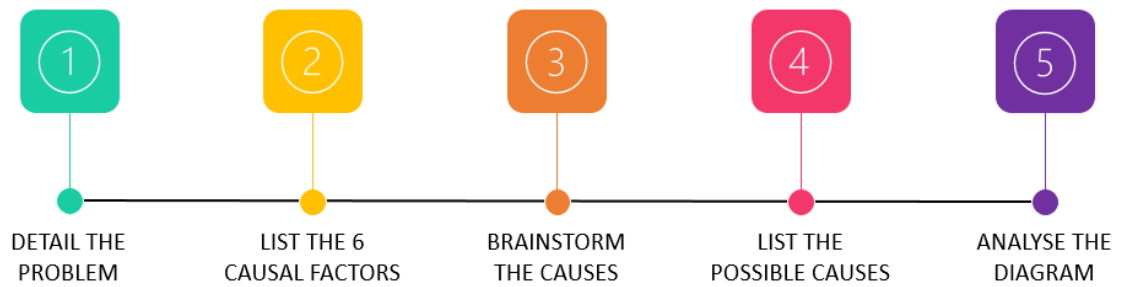


Figure 8. Cause and effect workshop steps (Tague, 2005, pp. 93-519).

Benefits of the method

The main benefits to using this technique is that reduces the tendency of a team to look for the one true root cause at the expense of ignoring other causes. It also helps identify the relationship between each “cause” and “sub-cause” and to identify the “effect” being addressed (Westcott, 2006b, pp. 329-371). It is also a simple method for teams to understand and use (Munro, et al. 2015b, pp. 102-125).

Limitations

The cause-and-effect diagram is a qualitative analysis technique and does not provide quantitative information. This means that teams often generate a diagram based on ideas, theories or opinions without any actual data or evidence. Teams need to remember to collect the necessary data and evidence to validate the ideas generated in the diagram (Juran, 2018.). Although the diagram is good at breaking a potential problem down in to the six different categories it does not provide any guidance when developing potential corrective actions. This means that many teams allocate one corrective action such as ‘training employees’ without considering all potential improvement ideas (Paradies, 2020).

Another limitation to using cause and effect diagrams is that it requires the team to identify the root cause of the issue. This can be difficult for many teams and requires experience to ensure it is correctly identified (Westcott, 2006b, pp. 329-371). The brainstorming process that is used to identify potential causes can also generate irrelevant ideas that then confuse or mislead the team. This can also be made worse through divergent thinking where teams work to identify and fix everything that might be associated with the problem (Trout, 2012).

Cause and effect diagrams also do not help teams identify what actually happened. They are focused on determining why it happened. Understanding what exactly happened is important prior to building a cause-and-effect diagram Westcott, 2006b, pp. 329-371).

2.6 Benchmarking

One way to compare the performance of company's using different product and service development methods is to conduct a benchmarking study. The term benchmarking originated from surveying where it referred to the practice of comparing different elevations in the land (Tucker, et al., 1987). Today however the term is used to describe the process of comparing one organization, (usually a market leader in a particular area) against another in order to identify which processes, systems or people capabilities are better. Although typically undertaken on external businesses, internal studies can also be conducted to share knowledge and experiences. It also helps a team ensure that they fully understand their own processes (Tague, 2005, pp. 93-519).

There are a number of different benchmarking techniques that can be used internally within a company or externally where different companies are compared (Bogan & English, 2021). These different approaches can be seen in figure 9.

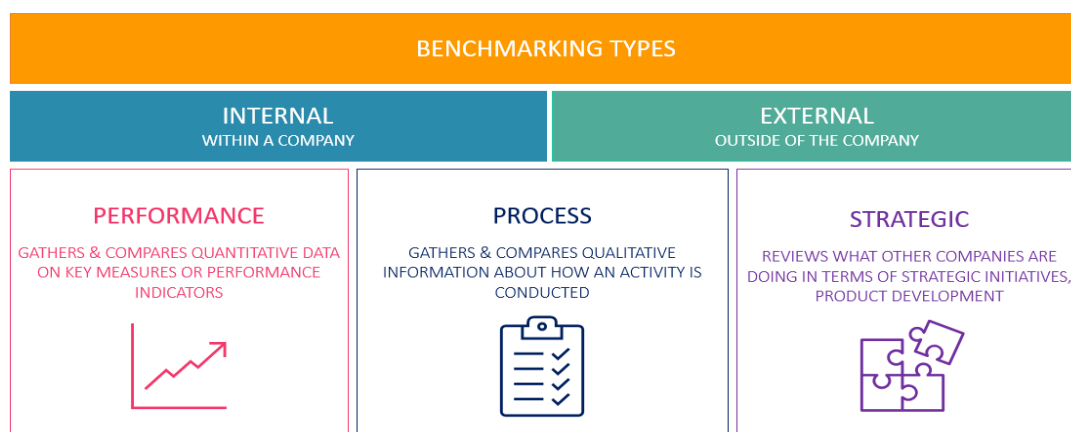


Figure 9. Types of benchmarking (Bogan & English, 2021).

Benefits of the method

The main benefit to this method, which is summarised in figure 10, is that a team gets to see an effective and well-functioning process. They also get to talk to the people involved in the process to identify insights into how they use it and why it works well (Tague, 2005, pp. 93-519). The approach also forces teams to look outside of their own area for new

ideas and ways of working. Even if it is conducted internally, an operational group may look to another function, for example finance, to get ideas on how to work differently. This can help break down boundaries between groups and to build mutually beneficial relationships. By using this approach a team can make considerable improvements in a short space of time as they do not have to apply a trial-and-error approach to improvement. It also allows teams to better identify, comprehend and adapt knowledge of good practices from best-in-class teams or companies (Westcott, 2006a, pp. 292-325).

Benchmarking also allows teams to help set stretch goals as they can compare their practices to what is considered good in other teams. It allows them to understand that the stretch goals are in fact achievable as they have seen them in action within another team (Westcott, 2006a, pp. 292-325).

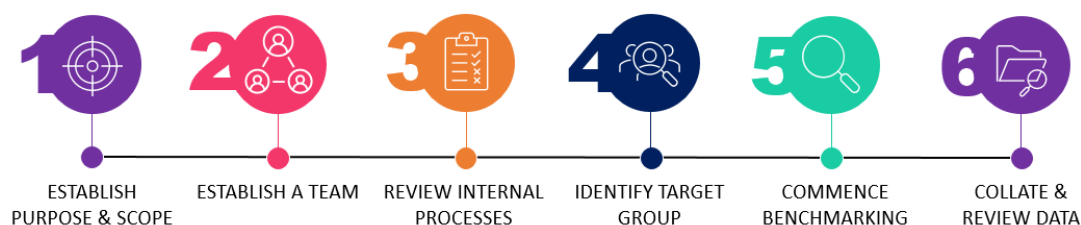


Figure 10. Benchmarking steps (Westcott, 2006a, pp. 292-325).

Limitations

There are a number of considerations that need to be taken when using the benchmarking method. The first is that it can use considerable time and resources to conduct a detailed benchmarking activity. For this reason it is important that the activity is well planned and has a clearly defined scope otherwise it will be too broad, and it will be difficult to collect the necessary level of detail required (Tague, 2005, pp. 93-519).

Benchmarking teams also need to ensure that they do not try to just copy the process (Westcott, 2006a, pp. 292-325). They need to take the time to understand how an activity is undertaken, why it has been set up that way and then think about how it could be applied to their business or area. The team also needs to be open minded and avoid the “*that won’t work here*” mindset (Tague, 2005, pp. 93-519).

3 SERVICE IMPROVEMENT

3.1 Improvement types

As stated in the introduction there are a number of different improvement approaches that can be used by service providers to develop their processes, people, systems, and services. Approaches such as lean, agile, six sigma, Total Quality Management (TQM) and the Theory of Constraints (ToC) have been used in a variety of industries from manufacturing, finance, and healthcare. Of these methods mentioned above, only service design, agile and lean are currently being used by the commissioner and will be the only ones reviewed in this thesis.

3.2 Agile

The agile approach is considered to have been developed in 2001 by a group of 17 developers who met to discuss new approaches to developing software. It was during this meeting that they first used the term 'agile' to describe their new way of thinking and also when they first created the Agile Manifesto to describe the various principles and processes required (Denning, 2016).

Prior to the agile approach the most commonly used method for developing software was the waterfall method. This method was developed in the 1970's by Winston W. Royce in order to help deliver a more structured approach to software development and to ensure that the final product always matched what was specified. Initially the waterfall approach was effective due to the types of computer programs that were being developed. The programs were usually large, complex and took years to build, however when the age of the internet started it was found that this rigid, inflexible approach was not sufficient any longer. New software development was being conducted by small start-up teams that did not have employees with computer science backgrounds. They were working in rapidly changing markets and were trying to grow their companies quickly, so getting their products into the market faster and receiving immediate feedback from their customers was important (Sacolick, 2022.). As a result of this new need, agile was developed.

The agile approach focusses on delivering products in small increments. This means no more multiyear enterprise-wide projects as was common in the 1970's using the waterfall approach. By using faster, shorter development increments it allows a team to develop

their products and get them into the market much faster. They can then start to use any customer feedback that they receive to fine tune and improve the product (Lynn, 2022.). Other key tenants of the approach that the teams need to understand, and follow can be seen in figure 11 below.

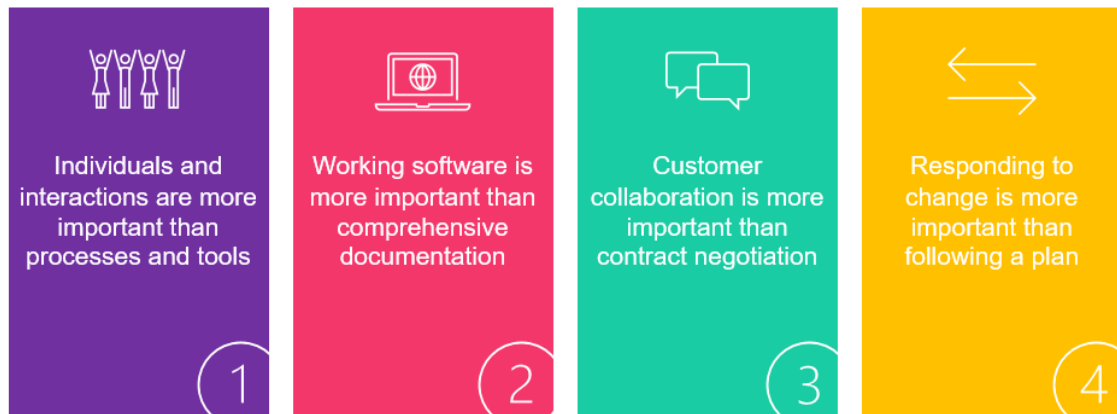


Figure 11. Agile tenants (Denning, 2016).

3.2.1 Agile principles

In total there are 12 different principles that teams using agile will apply in order to support the improvement approach. The first principle is focused on delivering the product early. This is the development team's highest priority, and their focus is to satisfy the customer by delivering software ahead of schedule. The second principal focusses on adapting to change. Teams need to welcome change to benefit the customer. The idea is that any change even if late in the development phase is beneficial. The third principal focuses teams to deliver working software to the customer on a frequent basis. The shorter the timescale, the better. The fourth principle is focused on enabling cooperation. Developers within the team need to work closely with different business units throughout a project in order to develop and deliver solutions that meet the customers' expectations. The fifth principle is to use motivated individuals. Team members should be provided with the right environment, supported and trusted to allow them to be effective and to achieve their goals (Iqbal, 2022.).

The sixth principle encourages teams to use face to face communication as it is the most efficient and effective method to share ideas, discuss issues or identify opportunities. The seventh principle ensures teams have clear measures that are reviewed throughout the execution of working software in order to stay on track. The eighth principle encourages teams to maintain a constant and sustainable development pace.

Essentially the aim is to prevent burn out of the team members. The ninth principle encourages teams to focus on good design and technical excellence in order to improve the overall process agility. The tenth principal targets simplicity. Teams should always maximise the amount of work that is not done. The eleventh principle encourages teams to self-organise to establish the best designs, architectures, and requirements thereby producing better results. The twelfth and final principle is to reflect and adjust. Teams should periodically review their performance and identify ways to become more effective (Iqbal, 2022.). The principles are summarised in figure 12 below.



Figure 12. Agile principles (Iqbal, 2022).

3.2.2 Types of agile

As agile has been deployed since the beginning of the 21st century it has also been adapted and refined by different groups. (Narayanamurthi, 2017). This evolution is an inherent part of its design as it aims to grow and adapt over time in order to exploit new opportunities (Denning, 2016). Currently there are 12 different agile models actively being used (Rigby, et al., 2016, pp. 40–48, 50), however the 3 commonly used ones are scrum, Kanban and lean development. The differences between the approaches can be seen in appendix A.

3.2.3 Applications for agile

Since it was first introduced, agile has been heavily promoted by both the Harvard Business Review and McKinsey and Company for its ability to deal with volatile and uncertain markets (Denning, 2016). It can be used to not just develop new products and services but also to improve functional processes (Rigby, et al., 2016, pp. 40–48, 50).

As a result, agile has expanded outside of the software development sector and is used in a wide variety of different industries. Companies such as John Deere use it to help develop new machinery, Mission Bell Winery uses it to manage its wine production, Intronis who is a leader in cloud backup services uses it for marketing, and even the National Public Radio (NPR) in the USA uses it to create programming (Rigby, et al.,

2016, pp. 40–48, 50). Other sectors that use it include marketing, banking, construction, event management (Denning, 2016), strategic planning and marketing. (Sangiorgi, et al., 2015).

3.2.4 Agile benefits

There are a number of benefits to applying agile in a business. One of the main ones is centred on improving employee empowerment. Agile empowers team members to take ownership of their work and to solve problems together (Eriksson & Andersson, 2006, pp. 282-296). Teams do not wait to be told by managers what to do but rather work through potential problems and test solutions. This then speeds up the development process (Denning, 2016). It also helps to build understanding, trust, and communication across different teams in the business (Rigby et al., 2016, pp. 40–48, 50).

The approach also values transparency and continuous improvement ahead of predictability and efficiency and there is a clear focus on value delivery. Teams are encouraged to generate more value from less work, not just pushing teams to work faster (Denning, 2016.). Agile also increases productivity as it reduces waste that is typically generated from continual meetings, excessive documentation, and quality defects. It also allows development to be tailored or adjusted to the customers changing needs and priorities. This then has the benefit of improving customer satisfaction (Rigby, et al., 2016, pp. 40–48, 50.).

3.2.5 Limitations in using agile

Whilst there are benefits to using the agile approach, there are also many documented issues. One of the main issues is that it can be difficult to fully understand. Similar to lean, agile is philosophical in terms of its approach and requires teams to understand and interpret the principles to make it function effectively (Denning, 2016). The agile manifesto prescribes no specific approach to use and requires teams to identify the one that will work for them. This can be difficult if businesses have not used any of them before (Chervenkova, 2021).

Agile also recognises that the teams will not always be able to know what the end result of their work will look like. This means that it is difficult to be able to predict what resources such as time, cost and people are required prior to starting a project. There is also limited documentation as it is only developed throughout the project. One of the issues that results from this approach is that the teams will deprioritise this activity in

order to complete their other tasks. Often it is either not done or is left incomplete (Lynn, 2022.).

Another key issue with agile is that the final output developed by the team can be fragmented as they are working on different components in different cycles. Rather than one fully aligned and integrated approach, it can be seen as different components that are not fully in sync with one another. There is also no clear end to the work. As there was no design specification developed prior to starting like there is in the waterfall approach, teams may not have a clear vision of what the final product actually looks like (Lynn, 2022.).

Often it is difficult to measure progress using Key Performance Indicators (KPI's) due to the incremental approach that can change over different cycles (Lynn, 2022). This can then lead to management teams becoming too involved in the development process as they want to see faster improvement. Frequent requests for updates, pushing ideas or solutions onto a team or routinely overturning team decisions, all erode the benefits that the agile method can bring (Rigby, et al., 2016, pp. 40–48, 50).

Like other improvement approaches such as lean, people can be resistant to changing from their current practices to using a new approach like agile. To fully leverage the benefits of agile, all employees at all levels of the business need to fully embrace the approach. If leaders do not actively get involved and support the approach, it can fail to deliver its full potential (Chervenkova, 2021.).

Insufficient agile training and a lack of organised coaching is another of the main failures when trying to implement it within a business. Training needs to be continual and should enable teams to think and approach decision-making in an agile way. As well as having good training, team members also need to have continual and clear communication. This requires the company to have appropriate communication channels in place (Chervenkova, 2021.).

3.3 Lean

Since 2010 the lean improvement philosophy has gained in popularity amongst large service providers globally who are looking to become more competitive by reducing their operating costs whilst maintaining their service quality (Vasudev & Parveen, 2013, pp. 604-608). Lean is an improvement philosophy that is typically described as a way of reducing waste and improving efficiency within a business (Shah & Ward, 2003, pp. 129-

149). Its ultimate aim however is to improve the velocity of products and services from creation through to use. To help achieve this it identifies nonvalue adding steps and then works to eliminate them. A non-value adding activity is anything that the customer is not willing to pay for (Eriksson & Andersson, 2006, pp. 282-296). By knowing what a customer specifically wants, teams can eliminate all non-value adding activities, steps, or functions (Millard, 2016).

The original concept was first developed by the Toyota motor company in the 1950's under the name of the Toyota Production System (TPS), however the term 'Lean' was first coined by John Krafcik in a 1988 article called the "*Triumph of the Lean Production System*" (Munro, et al. 2015a, pp. 31-48). The concept was further popularised by James Womack and Dan Jones in their 1990's book, "*The machine that changed the world*" (Womack, 2022).

In order to enable teams to better understand the process it is often visualised as a 'Lean house' that can be seen in figure 13 (Shah & Ward, 2003, pp. 129-149). The approach starts at the top with the 'roof' of the house that contains the goal of lean which aims to meet the customers' needs by producing the highest quality product at the lower cost and with the shortest lead time. The house is then made up of two different pillars which contain specific programs that are needed to achieve the goal. The first is '*Jidoka*' which translates to automation or "automation with a human touch" and aims to clearly define tasks completed by humans versus those by machines. The second is '*Just in Time*' which is focused on minimising waste by producing only what is needed, when required by the customer. The foundations of the house are made up of three different concepts. The first is '*Heijunka*' which is focused on levelling the workflow throughout a process and prevents overproduction. Standardised work is then used to ensure reproducible and repeatable processes are in place that can deliver high quality products or services consistently. The visual management concept ensures that there is clear and accurate communication by ensuring that all processes and tasks are visualised. By visualising information it ensures that people can understand what is happening without any need for explanation or interpretation. The centre of the house is focused on people and teamwork as they are the key element required to maximise the benefits of lean through problem solving and waste identification (Vincent & Manos, 2012, pp. 45-276.).

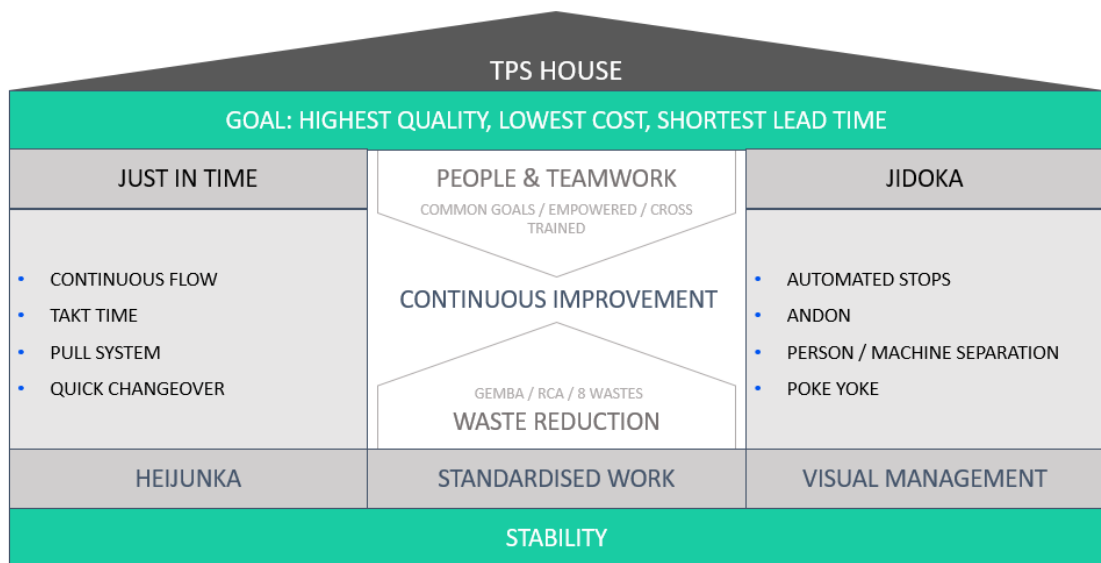


Figure 13. TPS house (Vincent & Manos, 2012, pp. 45-276).

3.3.1 Lean principles

The lean system is made up of a number of different principles that are summarised in figure 14. The aim of the principles is to establish a set of guiding behaviours that teams can rigorously apply in both their daily work and personal lives. It is believed that in order for any lean transformation to be truly successful, the principles need to part of each employee's way of life (Munro, et al. 2015a, pp. 31-48).



Figure 14. Lean principles (Carlborg, et al., 2013, pp. 291-304).

3.3.2 Applications outside of manufacturing

Historically there has been a misperception that lean can only effectively work in the manufacturing sector (Vignesh et al., 2016) however, there are many service sector organisations in healthcare, finance and telecommunications that have successfully

adopted the approach to drive improved business performance (Vasudev & Parveen, 2013, pp. 604-608).

Many manufacturing companies such as Boeing are also helping to bridge the gap between manufacturing and service by applying lean to their 'nonproduction' areas. For example in their human resources and finance departments (Piercy & Rich, 2008, pp. 54-76). Boeing has determined that using lean in their service areas is an opportunity to not only improve their efficiency but to create a new platform for innovation and competitiveness (Carlborg et al., 2013, pp. 291-304). Boeing are not the only company using this approach, when conducting a search looking for 'lean service' on Google, there will be up to 21 million links (Kolko, 2015). Some examples of the of different service specific sectors where it is currently used can be seen in figure 15.

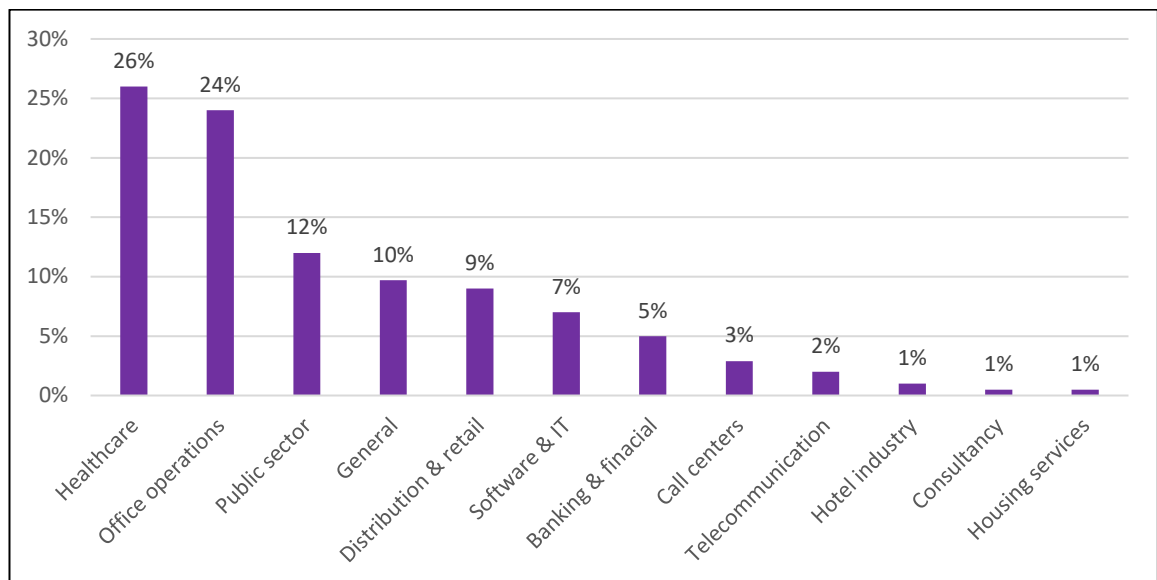


Figure 15. Use of lean in the service sector (Hadid & Mansouri, 2013, pp. 750-783).

3.3.3 Problems in service sector

Although lean can provide a competitive edge and has been used in a variety of different industries, it needs to be tailored to make it work effectively. This lack of understanding has resulted in many examples of failed deployments, not only in the service sector but also in manufacturing. Approximately two thirds of all lean deployments have failed with less than one fifth of those that were actually implemented, yielding any lasting results (Vignesh et al., 2016).

A lack of detail and transparency in planning the lean deployment is also a common error. Many businesses take a “*let’s just get started*” approach without any consideration for how to manage the deployment or provide employees the necessary time to learn and use their new skills (Hadid & Mansouri, 2013, pp. 750-783). This has also resulted in lean being focused on ‘process efficiency’ which then misses the opportunity to deliver significant performance improvements or generate true process innovation as was originally shown by Toyota (Kolko, 2015).

Another limitation is that the lean deployment is often incorrectly focused on the lowest level of work in the business. The aim has been to engage with employees to provide them with the necessary skills to make changes within their work area. However this tends to result in isolated and small projects. The true value of lean is working across the entire value chain and therefore it requires the whole company to be actively engaged (Asnan et al., 2015, pp. 313-319). Another aspect to this is that lean like all improvement methodologies, requires stable operating conditions. Highly variable, complex, or inefficient processes make it difficult to implement (Eriksson & Andersson, 2006, pp. 282-296).

Lean can also be difficult to sustain. The authors James Womack and Daniel Jones explain lean being a deep-rooted culture within a business that is working to engage all operational employees in trying to improve the business, not simply another improvement technique (Vasudev & Parveen, 2013, pp. 604-608). This means that it is not a quick fix approach and requires a sustained effort to gain any long-term benefits.

Current business organisational structures can also inhibit lean success. Those with complicated matrix arrangements can inhibit real improvement due to a lack of coordination among different functions that form the targeted process being improved (Hadid & Mansouri, 2013, pp. 750-783.). Essentially the problems ‘fall between the cracks’ or department boundaries with no group taking ownership of them. Employees can also often prevent a successful deployment because they are sceptical of the benefits (Asnan, et al., 2015, pp. 313-319). They see the standardisation of processes as being controlling and are therefore resistant to the concept (STR Team, 2013). To circumvent this, managers need to actively promote lean thinking in order to build a lean culture within their teams. This takes time and effort, both of which managers may not feel they have enough of. Some managers will also feel a loss of control as lean promotes autonomy and empowerment at a team level. To help overcome this, companies need to have a clear change management approach. They need to think, plan, and

provide the resources required to drive the necessary cultural change (Asnan, et al., 2015, pp. 313-319.).

Often a cut and paste approach is used when deploying lean in a business where the manufacturing approach is simply replicated in the service company. Up until the early stages of the 21st century, service providers globally have been immune to the effect of globalization, whereas the manufacturing sector has had to deal with this for many decades. For example the American car industry struggled with the rapid growth of Japanese manufacturers in the 1980's and more recently other manufacturing sectors have had to deal with China's rapidly increasing manufacturing capabilities. Manufacturing companies reacted to these competitive pressures by looking for new ways to improve the effectiveness and efficiency of their operations (Hadid & Mansouri, 2013, pp. 750-783). In short, they have had nearly 50 years to develop different improvement approaches all aimed at increasing their quality whilst reducing cost. For example Total Quality Management (TQM), six sigma, Theory of Constraints (ToC) and then lean (Stamm, et al., 2012). In order for lean to be successful, it requires a clear purpose, and teams need to take the time to understand the approach and how to tailor it to their needs.

Waste and inefficiency are also generally quite easy to see in a manufacturing plant as it is physical, however in services it is more difficult to find. Service processes are generally digital, and the waste is often time related (STR Team, 2013). Other factors limiting the effectiveness of lean include an over reliance on applying the various lean tools without fully understanding the associated principles (Asnan et al., 2015, pp 313-319). The lean principles are also philosophical and difficult to implement (Carlborg et al., 2013, pp. 291-304).

3.3.4 Benefits for service companies

The intent of lean is to fully understand a customers needs, but then ensure that the product or service that they receive is the highest possible quality each and every time they purchase or use it. There are a number of benefits for service companies to use lean. Typically the focus is on reducing cost however the real value is eliminating all non-value adding steps and improving process velocity. By doing this it can lead to improved customer satisfaction and improved employee morale and performance. As processes are clear, standardised and adequately resourced it makes the work easier. This can

then lead to a reduction in staff turnover and absenteeism (Hadid & Mansouri, 2013, pp. 750-783).

The reduced physical or digital waste that is a result of lean also helps ensure companies can reduce their environmental footprint, and as their processes become streamlined, they can better respond to fluctuations in demand and other market variables. This then results in fewer delays and improved lead times. As lean demands the constant fine-tuning and refinement of processes it helps establish a continuous improvement mindset across teams (Hadid & Mansouri, 2013, pp. 750-783.).

3.4 Service design

Services are everywhere and have been ingrained into people's daily life for hundreds of years. Everything from using public transport, going to a restaurant, or ordering a taxi involves using a service. The idea of the service design approach is to provide a service that customers actually want. To make services faster, simpler, more engaging, and more desirable to use (Jones, 2015). However it is not just about designing how the service is performed, service designers are also interested in understanding the experience that a customer goes through when using the service (Gibbons, 2017). The concept itself is a relatively new improvement approach with the term 'Service Design' first being introduced in 1982 by Lynn Shostack in an article called "How to design a service". The article was first published in the European Journal of Marketing Vol. 16. (Nazari, 2020). and proposed that companies should take a systematic approach to understanding how their various internal steps and activities interact to form the service rather than just relying on people to manage it. Relying on people alone results in inconsistent service quality as it is heavily dependent upon their individual skill and expertise. (Gibbons, 2017).

In 2002 the service design approach started to grow. Chris Downs formed the first agency for service design and shortly after Michael Erlhoff and Birgit Mager started a service design department at the Köln International School of Design (Lenz, 2012). Since this time, the field has continued to develop (Saco & Goncalves, 2008, pp. 10-19), and no longer does the responsibility for service design fall on management teams, as it did when Lynn Shostack introduced the concept. Service design is now considered the responsibility of the entire business (Gibbons, 2017.).

3.4.1 Service design approach

Service design uses an iterative and systematic process to design unique services that are user-oriented and sustainable. A core methodology used in conjunction with service design is design thinking, which is focused on finding solutions or strategies to overcome human centred problems (Brown, 2021). It is focused on understanding what people really need prior to developing new ideas and strategies. Any relevant information gained throughout the process can then be used to continually redefine the problem. There are a number of different design thinking process models however, one of the most common is the 5 phases developed by the Hasso-Plattner Institute of Design at Stanford. The 5 phases include empathize, design, ideate, prototype and test. (Rikke, 2022.).

Using design thinking as part of a service design approach allows businesses to create services that are useful, useable, desirable, efficient, and effective for the customer. They also need to be human-centered and focused on improving both the customer service and quality (Saco & Goncalves, 2008, pp. 10-19). To do this service design teams need to fully understand their company's brand's purpose and always put the customers' needs ahead of the business' internal requirements (Interaction Design Foundation, 2012).

It is important to note that service design is not simply focused on designing a service. It also focusses on organising and utilising business resources such as people and processes, in order to ensure the service is effective. To help do this, services are broken down into frontstage, the perspective the customer sees and interacts with, and backstage perspectives. These are the behind-the-scenes activities that the company uses to provide the service. Frontstage components include channels, products, touchpoints, and interfaces whilst backstage components include policies, technology, infrastructure, and systems. Although they are never seen by the customer, backstage activities play a critical part in shaping the customer's experience. By streamlining a company's backstage processes not only does it improve the employees' experience, but also allows them to create a better user experience (Gibbons, 2017.).

3.4.2 Key principles

Like many other improvement approaches, service design has a number of different principles that should be followed. These are:

1. Human centred – Services need to be designed around the user’s needs (Interaction Design Foundation, 2012). This includes both the customer and internal stakeholders with the aim of providing a service experience that meets their needs (Stickdorn, et al., 2018a, pp. 25-27).
2. Collaborative – Stakeholders should be part of the co creation process to ensure their input is included during the design, production, and development steps (Interaction Design Foundation, 2012).
3. Iterative – Teams use an iterative approach to designing and improving services. This exploratory approach allows teams to continually improve the service with each design cycle (Stickdorn, et al., 2018a, pp. 25-27).
4. Sequential – Complex services should be broken down into visual, separate, distinct sequences. The aim is to deconstruct the process into single touchpoints and service interactions (Stickdorn, et al., 2018a, pp. 25-27).
5. Real – Researching and prototyping services should where possible, be undertaken in a state where they actually exist. This ensures that they reflect the current situation and circumstances where the service is used. (Stickdorn, et al., 2018a, pp. 25-27)
6. Holistic – Designers need to consider every aspect and touchpoint of a service. This includes different networks of users and stakeholders (Interaction Design Foundation, 2012).

The principles are summarised in figure 16 below.

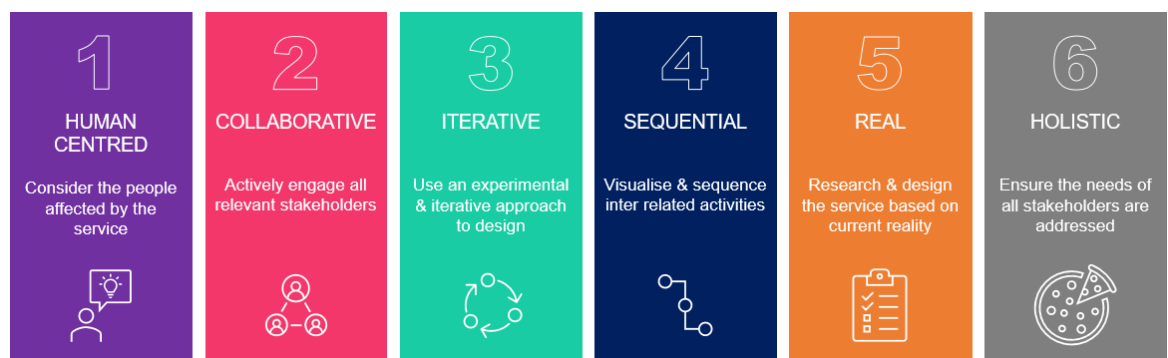


Figure 16. Service design principles (Stickdorn, et al., 2018a, pp. 25-27).

3.4.3 Benefits of using service design

Service design thinking is an effective problem-solving approach to improving services as it can identify solutions that are both desirable for the customer, but also feasible and viable for the company (Negbenose, 2020). Service design helps a company establish a good balance between focussing externally on what the customer needs versus the internal resources required to manage it.

Service design also places a high focus on establishing collaborative and cross functional solutions. It aligns internal processes as different aspects of the service such as the process, backstage actors and roles are clearly defined and then aligned to the customer facing service (Gibbons, 2017).

Mapping out the internal service processes also provides companies with good service transparency and can help pinpoint issues such as duplicated efforts, employee frustration and wasted resources. Another benefit is that it can align a company's business model to the service that it is trying to deliver which has traditionally not always been the case. The service design approach helps identify this issue early in the design process (Gibbons, 2017).

3.4.4 Service design limitations

One of the issues that has been identified with service design is that it is too inward focused. Teams develop solutions based on various business considerations or they prioritise the improvement of internal processes at the expense of the customer experience (Futurice, 2019). Often there is limited focus on the ongoing business cost and complexity that can be added after the service design has been completed (Woudhuysen, 2011, pp. 235-248). The ongoing development of the service may also need additional support methods such as agile to be used. This creates additional complexity and requires further resources (Interaction Design Foundation, 2012).

Another limitation is that teams can become too preoccupied with using 'high tech' solutions. Valuable time and energy are spent working on these features rather than looking to simplify customer solutions (Futurice, 2019). The co creation process involving different customers can also be a time-consuming activity and if incorrectly focused can create wasted effort (Interaction Design Foundation, 2012).

3.5 Operational excellence

Although operational excellence has been successfully used in different companies such as the global energy company Chevron and international beverage giant AB InBev for the past 20 years, it can have different definitions. For example the Business Dictionary describes operational excellence as “*a philosophy of the workplace where problem solving, teamwork and leadership results in the continuous improvement in an organisation. The process focuses on the customer’s needs, keeping the employees positive and empowered, and continuously improving the activities in the workplace*” (Ruane, 2022). According to the Business Transformation and Operational Excellence (BTOES) business who are a cross industry group focused on continuous improvement, operational excellence can be defined as a company that “*manages their business and operational processes systematically and invests in developing the right culture*” (Bajaj & Reffell, 2022).

Traditionally operational excellence is based on elements of lean, six sigma and TQM, however its aim is not to improve a particular process or service but to drive a cultural change across a company’s workforce to empower its people to make sustainable improvement (Ruane, 2022.). It also covers all areas of a business from the initial service development, through to procurement, digital development and ultimately the delivery of to the service to the customer (Koch, et al., 2013.). The framework itself can vary depending on the business but will generally cover the 4 areas as seen in figure 17. A more detailed overview can also be viewed in appendix B.





STRATEGY 	Having a clearly defined and aligned strategy to ensure all relevant groups within a business are working in the same direction. This is also supported by active and engaged leadership teams.
PEOPLE 	Developing a company's most important asset, its people. Ensuring that they are capable of meeting any future business needs through continual learning and development.
PROCESS 	Using structured problem solving and process improvement techniques to standardize & then simplify processes across a business to eliminate complexity and improve quality.
RESULTS 	Improving performance through the value creation initiatives and process improvement initiatives that are being run across the business.

Figure 17. Operational excellence focus areas (Koch, et al., 2013).

3.5.1 Scientific thinking

As discussed in the introduction, lean, agile, and service design are popular methods that are currently being used by service companies to help drive improvement within their business and improve customer service offerings. What is important to understand is that these approaches are based on the generic concept called the '*Scientific Method*' which also forms the foundation of a number of other improvement methodologies that have not been covered in this thesis such as Total Quality Management (TQM), Theory of Constraints (TOC), and Six Sigma (Ede, 2017).

The scientific method is an experimental technique used within the science and mathematics fields to test hypothesis relating to a problem that has been identified (Encyclopedia Britannica, 2020.). The method originated in the 17th century, however the version that is commonly used in the 21st century and is visualised in figure 18, was established in 1930 (Castillo, 2013, pp. 1669-1671). It is a systematic, iterative approach that allows people to identify a potential problem, observe the situation or process to gather data or insights, develop a hypothesis to solve the problem, then test it to determine if the hypothesis was correct. The results are then analysed, and the learnings are taken, (what worked, what did not) to form a new or revised hypothesis with the process then being repeated. For example retest the modified hypothesis (Encyclopedia Britannica, 2020.).

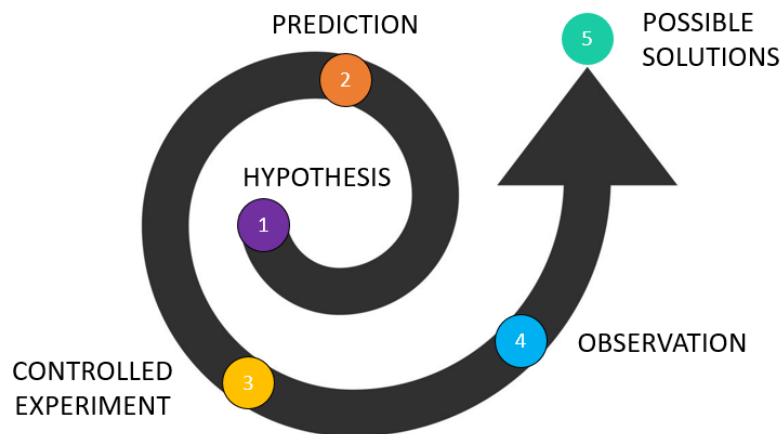


Figure 18. Scientific thinking (Dima).

This underlying concept is important to understand as it means that the different approaches which can be seen in figure 19, are all built using the same logic but are focused on solving different types of problems. By understanding the commonality between improvement approaches, it allows businesses to determine how they can be used in conjunction with one another, rather than be seen as opposing or conflicting approaches (Eriksson & Andersson, 2006, pp. 282-296).

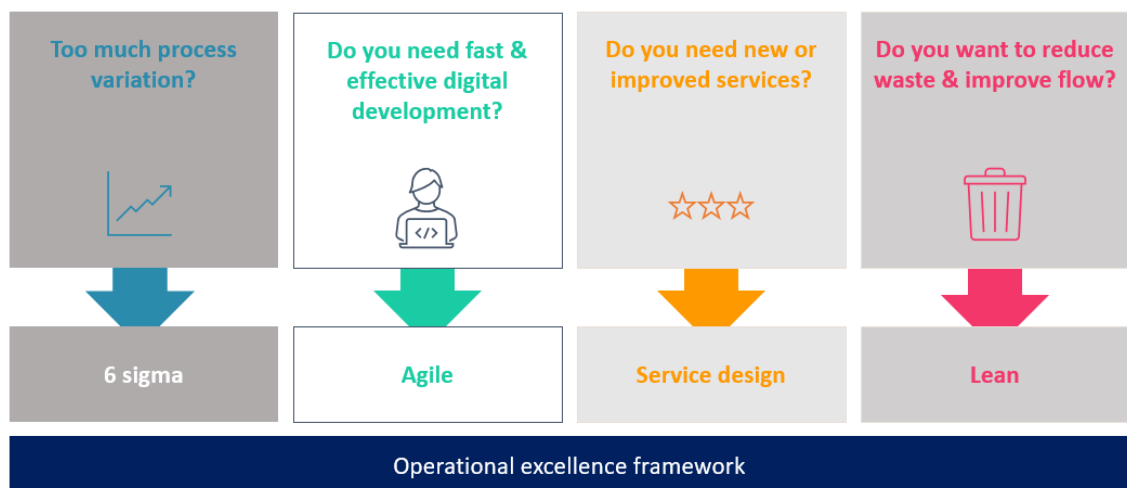


Figure 19. Different methods have a different focus (Eriksson & Andersson, 2006, pp. 282-296).

Service design for example is focused on understanding the wants and needs of a customer so that the best possible service can be provided to them (Brown, 2021), whereas lean is focused on understanding a customer's wants and needs, then eliminating all the non-value-added activities from a company's processes in order to

provide a quality service at a low price (Vincent & Manos, 2012, pp. 45-276). The absolute focus on the customer and their needs is the same in both approaches, however the application is different.

Many of the different methodologies that are used within each approach are also the same. Both lean and service design use cause and effect diagrams, brainstorming, and process maps. Agile itself was developed from lean, so many of its tools are either the same as those used by lean or adaptations. For example stand up meetings, Kanban and visual performance management are common across both approaches.

3.5.2 Benefits of operational excellence

Operational excellence provides an overarching framework that can be used to tie different improvement approaches together (Carlborg, et al., 2013, pp. 291-304). Whilst the definitions and focus of lean, agile, or service design vary, their aim is similar. Deliver the best possible product or service to the customer whenever they need it. This means that using operational excellence allows the different approaches to co-exist within a consistent and structured framework.

Another key focus for an operational excellence model is to ensure that all the necessary business structures are in place to support the improvement work. This means that a company needs to ensure that it develops its team's skill and expertise at a similar rate to its processes or its digital development (Eriksson & Andersson, 2006, pp. 282-296). By over indexing in one area it can lead to issues in another. For example highly sophisticated digital systems are built that employees cannot fully leverage the benefits from as they have not had the necessary training or do not have the necessary competency.

It also helps teams move away from focussing on the application of low-level improvement tools to deal with day to day or situational problems, to an environment which is more abstract and less context dependent. This then means it can be expanded to cover new areas that were never previously considered (Carlborg, et al., 2013, pp. 291-304). This is important for large companies where their existing business models and entrenched habits can make it difficult to achieve performance break throughs (Koch, et al., 2013).

Operational excellence can also better engage different areas of the business and a larger percentage of the workforce. It looks to drive business wide improvement rather

than focussing on improving specific areas or processes. It is difficult to harness a company's full potential if people think and work in silos. By establishing an operational excellence framework across a business, visible improvements can be made through the improved engagement of different units and the improved sharing of knowledge. In a study conducted by the global consultants McKinsey & Company, it was found that cross function business transformations were 30 to 40% more effective than single function improvement initiatives (Sandoval, et al., 2019.).

3.5.3 Problems and limitations

As stated in section 3.5, operational excellence is difficult to define and can vary depending on the business, how it interprets and then applies the approach. This means that when comparing operational excellence in different businesses it can be difficult to see the similarities. There are operational excellence frameworks that can be used by businesses such as the Baldrige program which is part of a USA Presidential award for performance excellence (US Department of Commerce, 2022), and is run by the National Institute of Standards and Technology (NIST). Another alternate framework is the European Foundation for Quality Management (EFQM) (European Foundation for Quality Management, 2022). Both are run by not-for-profit organisations and are tasked to help businesses drive operational excellence. A third approach which is managed by the Utah State University, is the Shingo model which is a principle-based program that focuses on building a sustainable improvement culture (Utah State University, 2020). All three models are focused on establishing operational excellence within a business by providing a framework and an assessment system to drive improvement. However all 3 are significantly different in their content and approach to deployment. Essentially businesses cannot cut and paste the approach from one business to another, which can make it difficult to get started.

As the focus of the approach is centred on changing a business culture, the process also takes considerable time. An operational excellence transformation can take many years and requires persistence from the company leadership team to ensure that it evolves and remains sustainable into the future (Saxena, 2021).

4 RESEARCH

4.1 Schedule of events

The main research focus of this thesis is a large Nordic financial services company and collection of the necessary information involved undertaking a number of different observation sessions, interviews and workshops. In order to ensure that no activity was missed a schedule was developed which also ensured that activities could be planned with the relevant participants well ahead of time. Refer to figure 20 below.

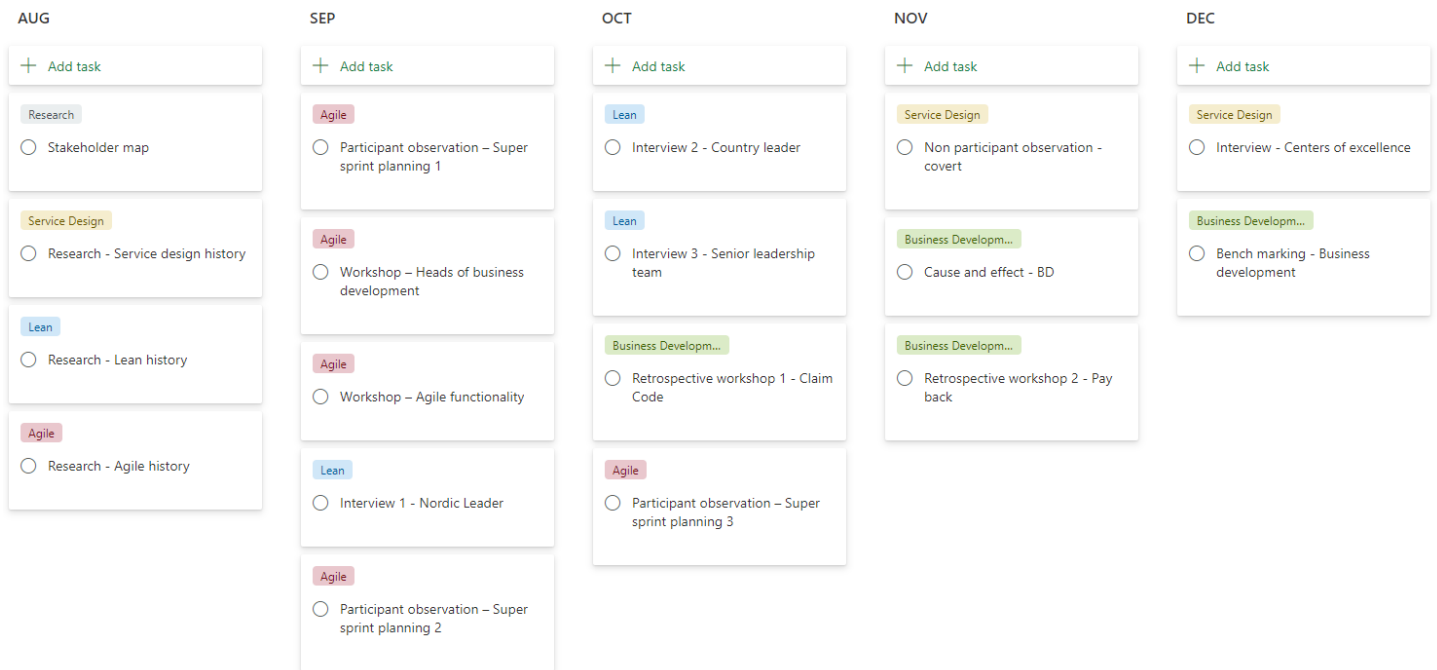


Figure 20. Case study schedule.

The schedule was broken down into four different working streams. These were lean, agile, service design and business development. These streams were established because they represented the different methods that were used by the improvement teams or ‘users’ within the business. Refer to figure 21 to identify these groups. The various research activities were then scheduled based on the availability of the participants.

4.2 Stakeholder map

The type of improvement approach such as agile, lean, or service design used within the company varied depending on the team. Their focus also varied depending on the market segment that they worked with. In order to clearly define which groups to include in the different workshops and interviews, a stakeholder map was developed.

To develop the map which can be seen in figure 21, three different segments were established. The biggest segment included the operational teams that are involved in dealing directly with customers. This group also included the largest number of employees within the business, and they had their own business development teams to run improvement projects. The second segment included the digital development teams. These were IT focused groups that made changes to the various systems that the operational teams use. The third segment included support teams. This segment included teams such as human resources and quality that provide specialist support services to the operational teams. The map was then categorized into two different groups. These were:

1. **Core customers** - These are the groups that request development work and acted as the sponsors. Generally they were the leaders of particular departments within the company and had direct control over a relevant business development team.
2. **Users** - These are the groups that are tasked with developing the various processes, programs, and systems that the business used. These are the business development teams and in total there are five different teams.

As a result of the map, interviews were then scheduled with the operational leaders to determine what issues they were experiencing with driving improvement across their respective area of the business. Workshops were also set up with the key users to understand which of the improvement methods they used and to gain insights in how effective they were.

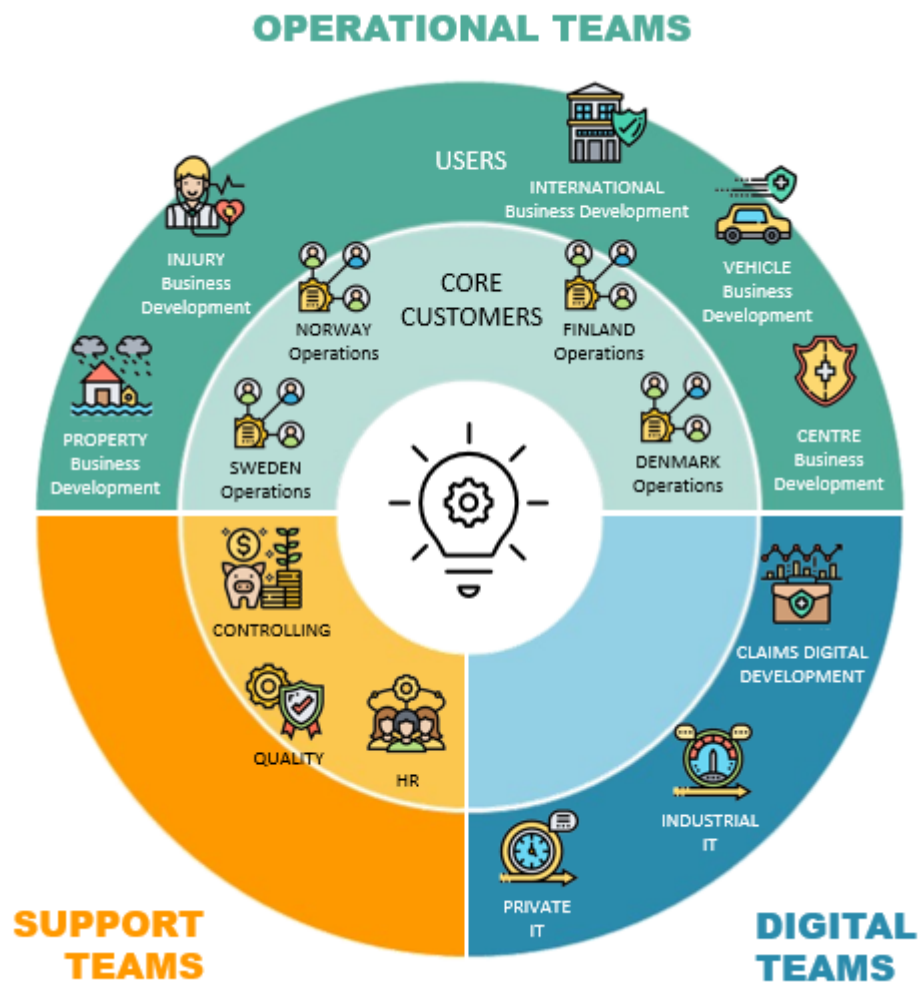


Figure 21. Stakeholder research map.

4.3 Agile journey

As discussed in section 1.4, the company’s digital development team worked across a number of different countries (Denmark, Sweden, Norway, Finland, Estonia, and Latvia), employed approximately 200 people and had a well-established approach centred on agile thinking. In order to gain an understanding of the history behind agile within the company, a search of their intranet site was conducted. The business had compiled a complete history of their agile journey which had been documented and posted online. They had also documented their roles, responsibilities, and way of working.

The agile journey initially commenced in 2018 when an external consultancy specializing in agile transformations was engaged by the business. Prior to using agile the business did have some demonstrated digital development skills and competencies, however an internal evaluation was conducted where it was found that they needed to become more

effective in steering and supporting the technology development. It was also found that the top-down control approach that they were using was limiting their potential as they did not engage the whole organization to drive improvement. However, even though there was a need to decentralise control, it was still important for them to have clear alignment across the business to ensure that everyone was working towards the same targets.

In 2020 company X launched its first 4 'tribes' and began planning for further growth. This growth occurred in 2021 and 2022 with the addition of further tribes in other areas of the business. This was a massive undertaking for the business and involved several hundred people. Making it more difficult during 2019 to 2022 was the Covid-19 pandemic which limited all physical workshops. This meant that much of the expansion had to occur using Microsoft Teams to conduct the necessary communication and training.

Company X uses a scaled agile approach similar to the one used at Spotify (Cruth, 2023), and is designed around customer value creation, adaptiveness, and employee engagement. People are then grouped into various squads which are small autonomous teams that work on specific product areas and are supported by an agile coach. Squads can also be grouped into tribes who are united by a common business focus. Lastly the business has established chapters which are a small group of developers with similar skills that can work across different tribes when needed. Refer to figure 22 for a visualization of the matrix.

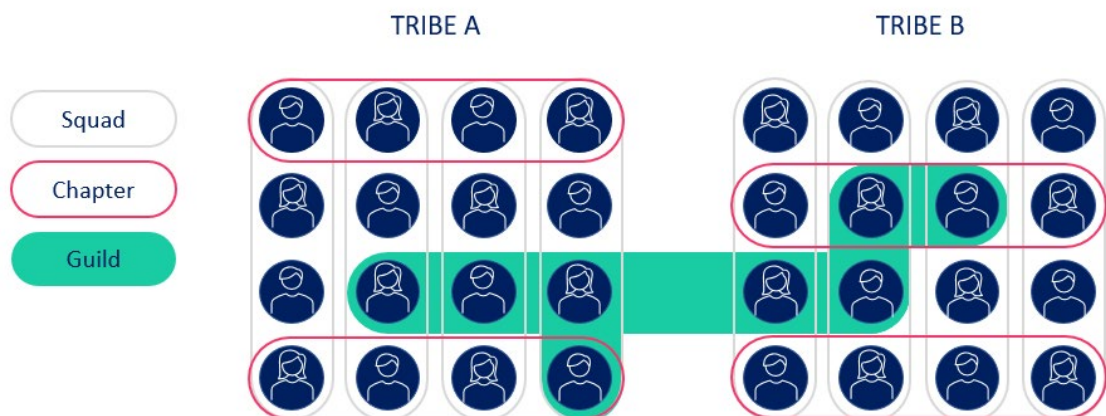


Figure 22. Agile matrix (Cruth, 2023).

By using agile, the businesses' primary objective is to "thrive in the digital economy". It aims to do this by:

1. Being quicker to market.

2. Developing services through a cross functional approach.
3. Using empowered teams.
4. Establishing a fun work environment.

All digital development undertaken in the company is via the agile approach and specifically uses the scrum method that is detailed in appendix A. All direction setting and progress is monitored through Objectives and Key Results (OKR's), that are set each sprint. For example an objective may be to grow the digital services in order to improve customer service times. The OKR could look as follows:



OBJECTIVE

Grow digital intake of the motor vehicle unit in order to improve service times



KEY RESULTS

1 - Increase digital intake by 10% on 2021 numbers.

2 – Reduce handling time by 5 minutes per contact on 2021 times.

4.3.1 Participant observation – Super sprint planning

After having researched the agile approach, the author participated in the identification and prioritization process of digital development activities which is part of the 'Super Sprint' planning. This activity was conducted using participant observation however as there is potentially some bias involved in this process (Stickdorn, et al., 2018c), the information collected was later cross checked by conducting a follow up workshop with other areas of the business. An observation guide as detailed in appendix C was used to help collect the necessary insights.

Session plan



Purpose:

To determine how system improvements are identified and prioritized. Also what type of improvement initiatives were being identified.



Participants:

Head of Business Development Motor, Head of Business Development Center, Head of Business Development Injury, Head of Business Development of Property, Head of Digital Development, Head of Business Development International, Agile coach, and Tribe Lead.



Agenda:

Refer to figure 23.



Time:

3 sessions, 60 minutes each



Location:

Virtual using MS teams

Method

The planning process was facilitated by one of the digital development agile coaches to ensure that it was consistent and as detailed in their procedures. Each cycle consisted of the initial request for initiatives, prioritization setting, and the final notification of which initiatives were selected. Refer to appendix D for a visualization of the different process steps.

In total there are three sprints each year that are set by the business. All units which are covered by the tribe and have been illustrated in the stakeholder map (figure 21) are requested to submit their top 5 initiatives for the sprint. Depending on the unit the way they go about identifying these initiatives will vary, however they all involve some level of interaction with the operations teams.

SUPER SPRINT PLANNING

Time:

3 sessions lasting 60 minutes each

Participants:

Heads of Business Development – Motor, Personal injury, Property, Center, Large & International, Digital development, Agile coach

Agenda:

Session 1 – Overview of planning process
Session 2 – Prioritize as a group
Session 3 – Feedback on the priorities

Figure 23. Spring planning agendas.

These are then collated by the business development teams (users) into a single list and submitted to a senior leadership team for prioritization. This activity involves all initiatives being discussed and reviewed based on the units needs and the value to the total business. The leadership team then prioritizes all initiatives from 1 (the highest) through to 25 (the lowest).

The prioritized list is then sent to the various system Product Owners (PO's) who then work with their teams to determine the final priority list for their respective system. To do this they will evaluate the task complexity, time and resources needed to complete it. They will also evaluate their existing backlogs and then establish a final priority list which is then managed in an online project management hub called Azure DevOps. Once the list has been prioritized, Objectives and Key Results (OKR's) are established, and the development work will commence in the new sprint. The identification and prioritization process as observed, lasted for approximately 4 weeks each.

Insights

The prioritization is a lengthy process that involves a numerous team across various levels of the business, from development teams to leaders. Having the active involvement of the leaders is excellent as it helps maintain focus and engagement throughout the business, however it was difficult to understand how certain initiatives were selected and why. Essentially the initiatives that are selected by the PO's not always match the list prioritized by the leadership team. After discussing this one with one of the PO's it was discovered that there are many reasons for this, however it is not a transparent process.

If requested, access to the platform where all the various initiatives are stored can be provided however, it is extremely difficult to understand what is being worked on and why, as there is a high number of improvement initiatives detailed in the system. A reviewer would need one of the POs to take them through it, however if someone were to work in an area that uses multiple systems, they will need to get each PO to update them.

The nature of the super sprint process was also very product focused. For example all units submitted the development needs they had for each specific system that they used. This approach works well if a team is only using one specific system, however there are instances where they may need to use multiple systems. This means that to improve a specific process, a request needs to be made with all the relevant PO's. This is a time-

consuming activity, and each PO will evaluate the request separately. For example a request to upgrade and automate an external registration form needs to be submitted with two different PO's. The PO who upgrades the registration form may prioritize the work but the other PO who handles the automatic registration does not. This results in nothing being completed as both pieces of work are required to make the process work. Essentially teams have invested considerable time and effort that is wasted because of this process.

It was also apparent that the work was prioritized based on volume. This means that if one teams system had a high volume of work, it was likely to be prioritized over another area that had less. The issue with this approach is that it does not consider the value of the improvement opportunity.

4.3.2 Workshop – Agile functionality

At the completion of the first sprint prioritization observation session, a workshop was set up to determine if the issues identified were common to other users in the business. An unstructured approach was used to collect in depth information regarding the agile process and how well it was performing from the user's perspective. Ideally this activity would be conducted face to face (Stickdorn, et al., 2018c) however, a number of the participants were located in different countries, so it was organized via Microsoft teams.

Session plan



Purpose: To determine how effective the digital development program was using agile.



Participants: Business developer – Norway (x2), Business developer – Sweden (x2), Development manager – Finland.



Agenda: Refer to appendix E.



Time: 90 minutes



Location: Virtual using MS Teams.

Method

The workshop included a number of business developers that were familiar with working with digital development requests and was retrospectively conducted after the first super sprint planning activity. The reason for selecting this group was that they are internal customers for the digital development team. This means that they identify issues on behalf of their operative unit, that need development and then submit them for prioritization. The focus for the workshop was:

1. How well was the agile process working?
2. Were their development needs being met?
3. What are the strengths of the process?
4. What are the limitations of the approach?

No icebreaker activity was used as the team already knew each other well and were comfortable with discussing the various issues related to this process.

Insights

Overall there was a consensus that the digital development process was better organized than it was in the past. Prior to using agile, the business used traditional project management to develop their systems. Although there was improvement, the business developers found that it was difficult to know who to contact in the agile teams. A business developer that was part of an existing initiative with one of the PO's would have a good understanding of how things worked, however those from areas that did not get a lot of digital development work done, would find it difficult to know who to talk to or how the various processes worked. There are contact details on the intranet site but many of the teams have names that are not intuitive as to what they do, for example 'Remedy', so it was difficult to contact the right person.

All contact is also one way. This means teams need to contact the relevant squad or PO to get information. A PO will not proactively reach out to the different operational teams if they are not working on a specific development need for them. Another potential issue with this approach is that the teams are limited by their own ability to identify improvement opportunities. The POs do not identify opportunities or improvement ideas for the teams. If a team lacks the vision, creativity or understanding of a system, it is unlikely that they will submit any initiatives for development.

The team also felt that there were items being prioritized that were not officially submitted by an operational unit. Teams that had people already allocated to a squad or knew the PO well, were able to bypass the system to get work prioritized. The author followed up on this topic with other business development teams who agreed that this was the case however, no definitive documented proof was found to verify that this happened.

The research also identified instances where several teams had submitted the same development request however, because they did it separately, they were reviewed and prioritized as separate developments, not as one change that would positively impact multiple areas. This resulted in them not being prioritized at all in the sprint.

All the information collected was added to an adapted force field matrix which can be seen in figure 24.

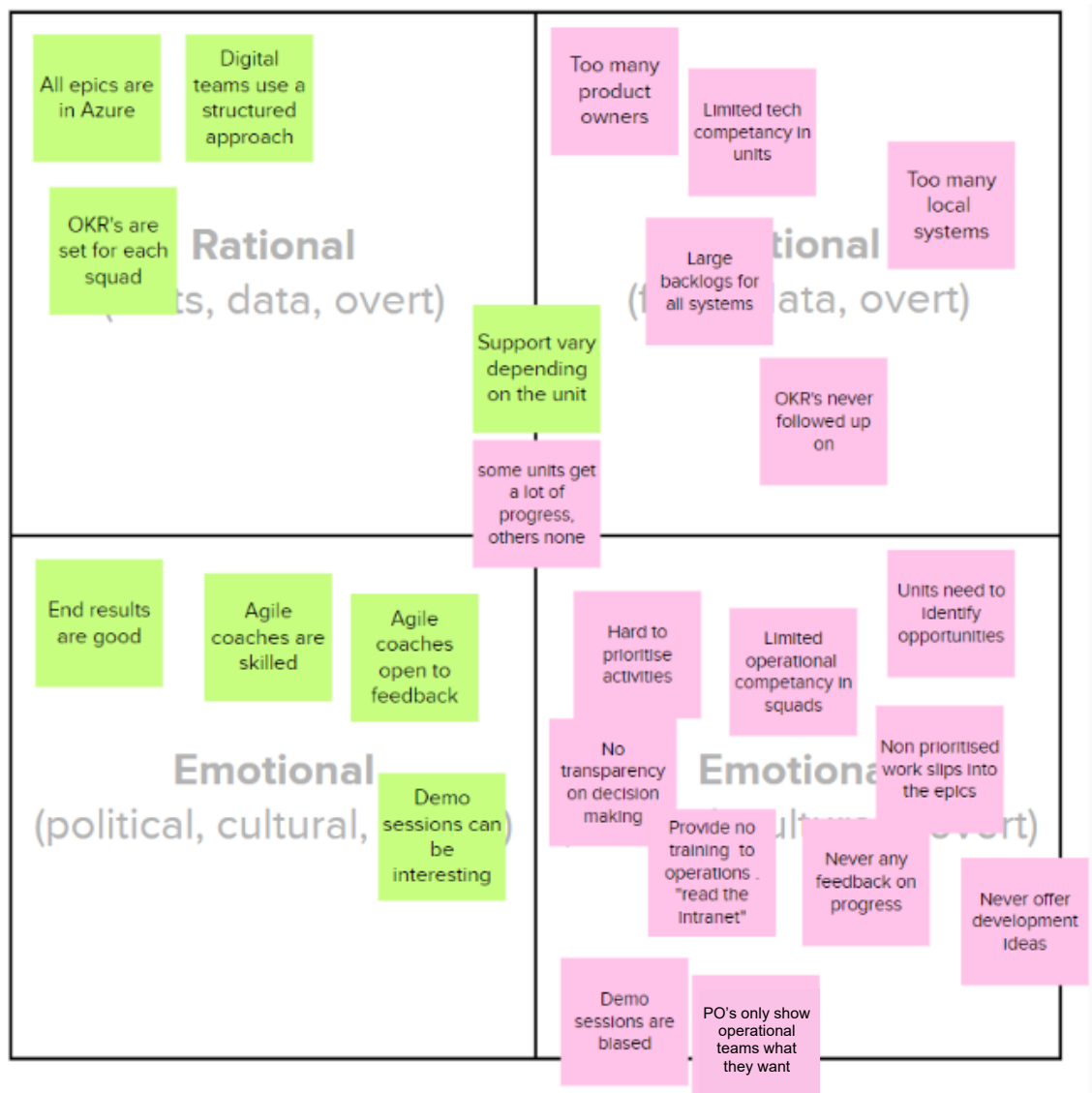


Figure 24. Agile workshop 1 review.

The force field matrix captures the positives and negatives associated with a process. The adaption to the process was to break the diagram into 'Rational' and 'Emotional' categories. The purpose of doing this was to determine whether the positive or negative experience was the result of the process or due to the culture of the business.

4.3.3 Workshop – Heads of business development

To verify the information provided from the workshop and the observation session, a meeting was set up with the Heads of Business Development from various operational teams to determine if they had experienced similar issues. As it is a large company it is important to understand whether the issues raised were localized to certain teams who may not be familiar with the agile working or whether it was common across all areas.

These different perspectives were also important as within the different operational teams there are different systems used in some countries. Depending on the unit, teams could use Nordic based systems whilst others used local ones. The reason for this difference was related to local regulatory requirements and the use of legacy systems that had not yet been replaced.

This means that resource prioritization and allocation may be different for them as part of the activity is based on the available time and resource that each squad has. For those units using larger Nordic systems, the amount of development needed may be considerably more complex and time consuming than a smaller, local system. Getting these different perspectives was therefore important.

Session plan



Purpose: To verify the issues identified in the sprint workshops to ensure that unbiased insights were collected.



Participants: Head of Business Development Motor, Head of Business Development Claims Center, Head of Business Development Personal Injury, Head of Business Development of Property, Head of Business Development Digital Development.



Agenda: Refer to appendix F.



Time: 90 minutes



Location: Virtual using MS Teams.

Method

A similar workshop plan that was used in the first workshop was used and was retrospectively conducted after the first super sprint planning activity. The group selected included the Heads of Business Development who were responsible for submitting the priority lists for their operational areas.

Insights

In general it was felt that the agile journey engaged more employees in not only generating improvement ideas but also included some of them to create improvements. There were also clear signs that the approach had evolved and was improving each year. The agile coaches took an active role in working with the various teams to identify pain points and modify the various processes to improve them.

There were however some issues raised. As had been observed in the super sprint process earlier, the prioritization process was described as being difficult to understand. Senior leaders were prioritizing all improvement needs based on the strategic direction of the business and then submitting them to the various PO's. These lists however only appear to be recommendations with the PO having the ability to select other activities based on backlogs, size of the work, volume involved and available resources. Many teams often submitted the same list over many sprints as their initiatives were never prioritized, which was seen as a disengaging activity for them. As mentioned in the business development workshop, the team felt that there was considerable 'lobbying' of PO's that went on outside of the official super sprint planning process. This was considered 'below the table' with many participants voicing their opinion that the process needed to change.

It was also felt that the agile development teams were too distant from the operational teams. If an employee was not involved in a squad, it was difficult to know what was been worked on. There are 'demonstration' sessions each quarter however these only showcase key areas that have been successful. Linked to this issue it was felt that the PO's were not always close to their key internal customers. Operational teams needed to find the PO's and contact them to discuss progress.

The last topic raised by the team concerned the use of resources. Due to the nature of the agile approach, squads were often made up of different business developers and operational employees. This is an effective approach as it ensures experienced employees are integrated into the squad, however the issue raised related to the fact

that some of these employees are never released from the squad. What should be a part time role ends up being full time and results in other teams losing their resource as it is not replaced. Refer to figure 25 for the results of the workshop.



Figure 25. Agile workshop 2 review.

At the completion of both workshops the information was collated into an affinity diagram to highlight key areas that were common across both workshop groups. The affinity diagram can be seen in figure 26 and is a method used to arrange ideas into common groupings. The aim was to look for common areas in the process that could be improved. Using the pink cards for negative feedback and green cards for positive also helped identify the problematic areas.

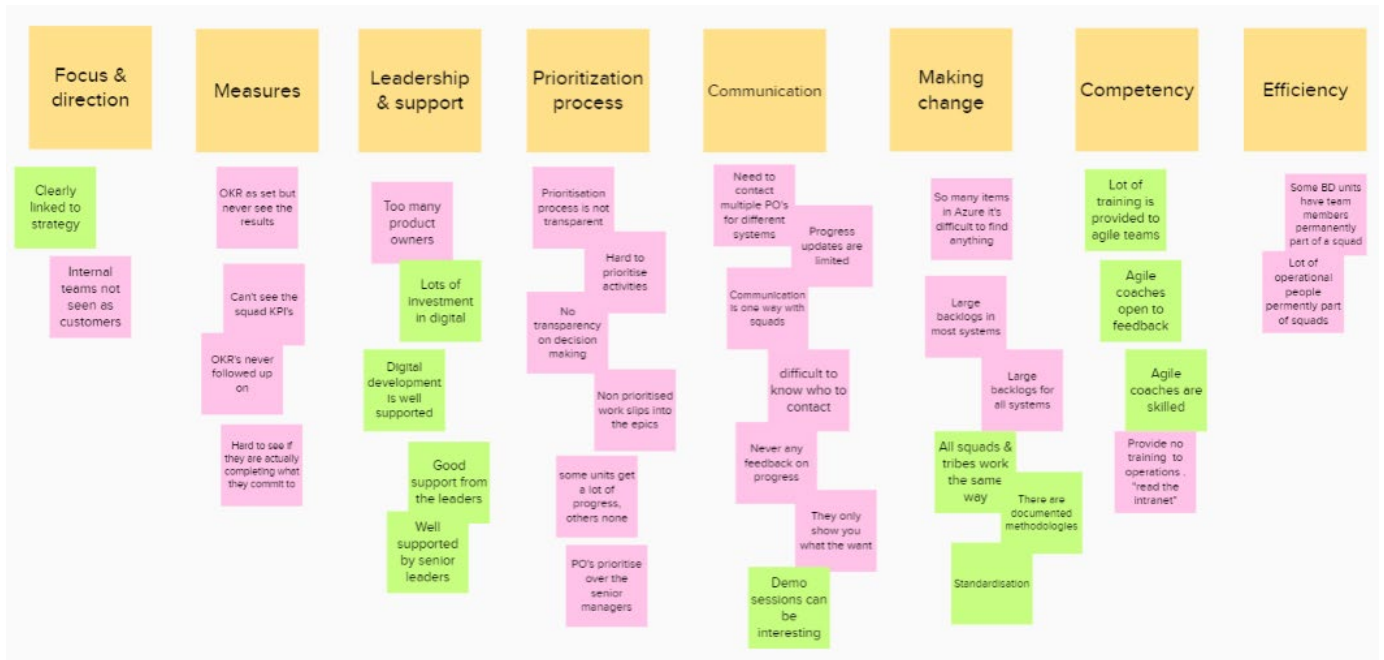


Figure 26. Affinity diagram from agile workshops.

From the affinity diagram there were 8 groups identified. The largest was focused on the agile communication process which the workshop teams highlighted as having several improvement opportunities such as improved contact lists and more engaging communication between the agile squads and operational teams. The second largest group of opportunities related to the agile prioritisation and planning process which the work groups highlighted as not being very transparent or easy to understand. Focus areas that were working well included good leadership support for the agile processes and a high level of competency with the agile teams.

4.3.4 Force field analysis

At the completion of the workshops and observation sessions the information was reviewed to establish the relative strengths and weaknesses associated with the agile approach. This was conducted using the force field analysis method that visualises the positive and negative forces associated with a specific topic, problem or situation. In order to help drive change, teams can either increase a positive affect or reduce the negative ones. Using this method provides a high-level overview where both positive and negative effects can be easily compared (Westcott, 2006a, pp. 329-371).

In order to compare the effects of each positive or negative outcome, each opportunity raised in the workshops was scored by the author based on the number of times it was

identified and the impact it had on the effectiveness of the program being reviewed, in this case agile. To do this, a 5-point scoring system was used, where 5 represented a strong influence, and 1 represented a weak influence. The scores for both positive forces and negative forces were then added together to determine which force was stronger. The results of the analysis can be seen in figure 27.

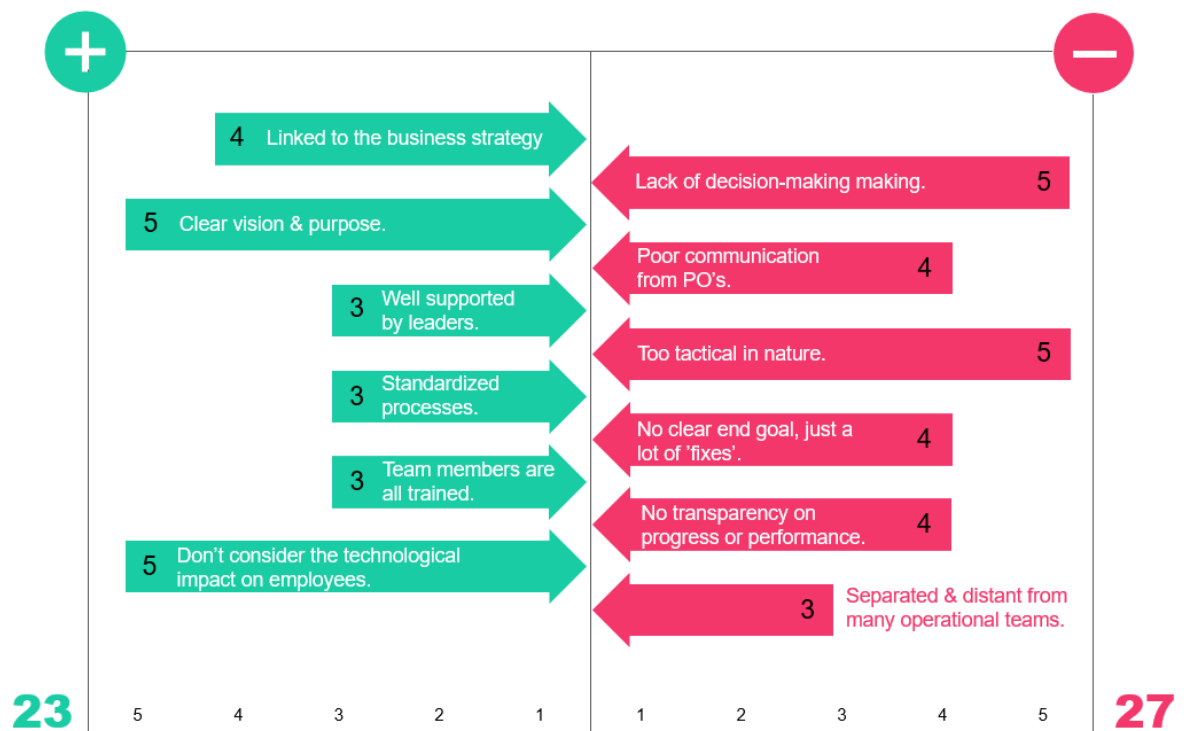


Figure 27. Agile force field analysis.

There were a significant number of both positive (23) and negative forces (27) identified for the agile approach being used in the case study. In order to improve the effectiveness of the approach, the negative influences would need to be addressed, particularly those related to the lack of transparency surrounding decision making and communication. If these were resolved the negative score of 27 could be significantly reduced and would represent an improvement in the agile approach.

4.3.5 Scope and focus

The information collected from the agile research methods was also reviewed to clearly identify the scope and focus of the agile projects as they were applied within the business. The scope and focus can be summarised as follows:



SCOPE

All development is focused on digital development only and does not consider people development skills outside of the agile users.



FOCUS

Dependant upon the tribe, however most are internally focused on meeting user system needs and they have limited interaction with customers.

In relation to the scope there were some squads that work with the service designers to improve the customer experience however the majority of work was targeted at improving the systems used to managed 'backstage' activities. In general both the scope and focus of the agile teams was narrow and limited.

4.4 Lean journey

As with the agile review, an online review was undertaken to determine the history behind lean being used in the business. Unfortunately there was no documented history or guidelines online. There were some process maps found in Norway as well as an online lean 'stand up' board in Microsoft planner, however the information found was ad hoc and not very detailed. There were not any detailed guides or methodologies available for teams to use and a center of excellence had not been established to centralize any information or provide training.

4.4.1 Interviews

As there were limited examples of lean being used in the business a number of retrospective interviews were set up to better understand what was originally undertaken. This information was also important as the business was interested in trying to launch a new lean deployment process in early 2023.

Session Plan



Purpose: To understand the previous lean deployment process, what worked, what did not and why.



Agenda: Refer to figure 28. The interview questions can also be seen in appendices G and H.



Time: 60 minutes per interview.



Location: Virtual using MS Teams.

Method

All interviews were scheduled several weeks in advance to ensure the participants availability and included an agenda so that they were clear on its purpose. Once the interviewed started, a structured set of questions was used for each interview however some flexibility was also incorporated so that the session could be adapted based on the answers provided.

Open ended questions were used, and all answers were written down and then paraphrased back to the interviewee to ensure that the information provided had been adequately captured.

INTERVIEW 1	INTERVIEW 2	INTERVIEW 3
<p>Participants: Head of commercial & industrial claims</p> <p>Agenda:</p> <ol style="list-style-type: none">1. Introductions2. Why did they use Lean?3. What worked?4. What didn't work & why?5. Summary <p>1</p>	<p>Participants: Head of Norway commercial & industrial</p> <p>Agenda:</p> <ol style="list-style-type: none">1. Introductions2. Why did they use Lean?3. What worked?4. What didn't work & why?5. Summary <p>2</p>	<p>Participants: Claims Management Group – Head of claims, Head of Property, Head of Motor, Head of L&I, Head of Personal Injury, Head of Controlling, Head of Quality, Head of Digital Development</p> <p>Agenda:</p> <ol style="list-style-type: none">1. Introductions2. Why do they want to use Lean?3. Summary <p>3</p>

Figure 28. Agendas for each lean interview.

4.4.2 Interview 1

The first interview was conducted with the leader of a Nordic operational group that had tried to implement lean in their respective area of the business in 2018. It was initially deployed in Norway and in order to help get the journey started they had engaged the services of an external lean consultancy that specialized in providing guidance in this area to various global businesses.

This interview was scheduled as a physical meeting with the aim to determine why the business originally thought lean was needed. As the initial deployment was not successful the secondary aim was to determine why and whether there were any learnings that could be used if they were to try again. Specific interview questions are in appendix G.

Insights

The initial deployment and training had gone well with progress being shown across different teams. Many processes were visually mapped, and improvement ideas were identified. Overtime however the progress slowed, and it required leaders to push their teams to continue to use the approach in order to maintain any momentum.

“Too localized for a unit like ours. We need to work Nordically to drive change”

The initial purpose of using lean was to help the teams drive process improvements across their respective area. Many of the processes that were used by the teams were undocumented which then made it difficult to train new people. There was also an interest in ensuring costs were kept low as the unit was experiencing inflation in many areas, particularly when using partner services. For example building costs had risen 3% above the predicted increases. One of the major disappointments of the work done was that there was limited sharing of ideas across the other countries. The lean deployment was managed as a localized activity with everything being documented in the Norwegian language. Documenting the work in Norwegian then disengaged teams from other countries as they were not able to easily use it. Overall it was felt that the deployment did not add the expected value and there was no interest in trying the same approach again as it was felt that the results would be the same.

4.4.3 Interview 2

The second interview was conducted with the country level leader whose team was specifically responsible for undergoing the lean training and then deploying it. This interview was important as he had direct responsibility and was also close to the deployment. It was determined that he could provide specific insights into what worked and what did not. As with the first interview the aim was to determine why the business embarked on the lean journey and to determine what went wrong. Also to gather more specific details regarding the resources used and the expectations for the initial deployment.

This interview was scheduled via outlook and conducted on Microsoft Teams due to his location being in Norway. Specific interview questions can be found in appendix G.

Insights

Key team members had undergone training, including managers and there was significant support early in the deployment. There were a few key reasons the approach never fully succeeded with the most significant one being the improvement teams moving quickly from one project to the next. As soon as the project was completed the team would commence working on the next improvement initiative. This meant that the focus changed quickly and often.

"A great start but we just couldn't sustain the change"

Due to this lack of focus it meant that the teams found it difficult to sustain the improvements that they had made. The teams would develop new ways of working but over time employees would revert back to their previous habits. The team did not feel like they had the resources or practices to sustain the improvements that were made. No process audits were conducted as part of the lean deployment.

Although the lean deployment was part of the strategy the aim was simply to deploy it. There were no specific problems or issues that lean was specifically tasked to fix. This may have resulted in it being seen as additional work for the teams with little relevance to their daily role. Linked to this was the fact that there were no progress measures set

in place to track what the initiatives were delivering. The work was also too reliant on key people to progress it. If they were away or focused on other activities the momentum would drop.

4.4.4 Interview 3

The third interview was with the operational group leadership team who were now interested in embarking on a broad lean deployment across all the Nordic countries. Refer to appendix H for the interview agenda. This deployment would be on a much greater scale than anything previously attempted and the aim was to determine what the motivations for the initiative were particularly in light of the failures in areas of the business. Additionally it was important to understand why the leadership team felt lean was needed when there were already a large number of business development and agile projects being undertaken across the business. This interview was part of a physical meeting conducted in the Espoo, Finland office and lasted for 60 minutes.

Insights

From the group interview there were three main drivers that were identified for why lean was needed in the business. The first was the need to drive improved efficiency across all the teams. It was felt that many of the processes were still managed manually by employees and used considerable time and effort. It was felt that the employees' skills and knowledge could be better used interacting with customers rather than handling manual administrative tasks.

The second driver was the need to eliminate complexity from the existing processes. Not only did the complexity slow the service handling time, but also made it difficult to automate various steps. The third driver was the need to engage with employees to better identify and then lead improvement changes in their respective area. The team felt that improvements were too dependent on specialist teams that were not always close enough to identify and understand some of the operational issues.

Overall the leadership team believed that lean would be a good approach to use to meet their requirements. They had not however reviewed previous lean deployments to determine what worked and what did not.

4.4.5 Force field analysis

From the different research methods used to review the lean deployment approach, the relative strengths and weaknesses of the approach were visualised using a force field analysis. This approach was the same that was described in section 4.3.4. and also used the same 5-point scoring system. Five represented a strong relationship, whilst 1 represented a weak relationship. The results of the analysis can be seen in figure 29.

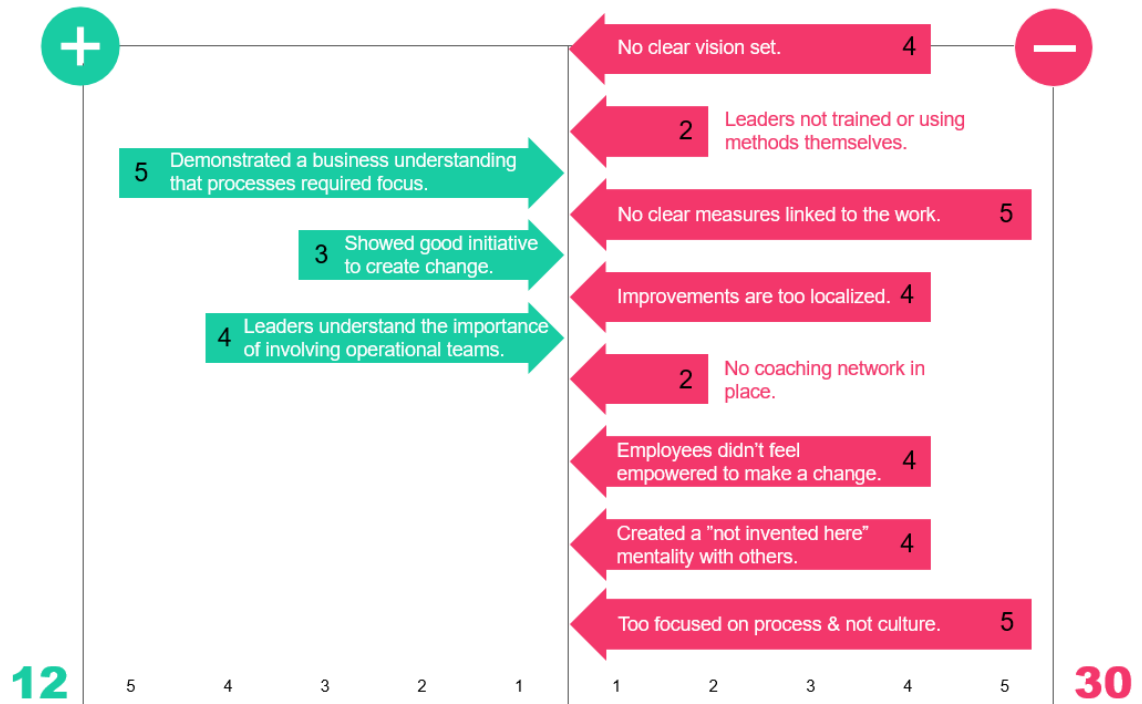


Figure 29. Lean force field analysis.

The negative forces that were identified totalled 30 points which is significantly higher than the positive forces that scored just 12 points. This is not surprising as the initial lean deployment was not successful. The main issues highlighted related to the scope of the work being limited, too high a focus on process improvement and a lack of performance measures being used to identify any progress made.

4.4.6 Scope and focus

From the interview information the scope and focus of lean projects, as they were applied within the business, was summarised as follows:



SCOPE

Development was predominantly focused on internal process improvement however there was training to improve the operational team engagement & problem-solving.



FOCUS

Internal focus on improving process efficiency with no customer interaction or involvement.

Similar to the agile teams, the majority of the improvement activities were focused on improving internal processes only. This in itself is not necessarily a problem as the most significant issues for the operational teams deploying lean may actually have been caused by internal problems which can then impact on customer services. However there was no specific focus on the customer's needs. It also should be noted that the deployment time of the lean approach was also considerably shorter than with agile and over time its focus and scope may have expanded to include other areas.

4.5 Service design journey

Service design was informally started in the business in 2021 with the hiring of a service design expert. Since this time, the number of service designers has increased and there were now a number of specialist teams established across the business, predominantly in Finland, Sweden and the Baltics.

4.5.1 Nonparticipant, covert observation

The company service design days were held on the 15th and 16th of November 2022 and offered the opportunity to learn more about the service design history within the business. It also provided an opportunity to listen to different service design teams highlighting some of their initiatives and practices. The group runs two sessions each year to help promote service design and share the work that has been done.

All communication during the two days was one way, meaning that various presenters provided content that could be heard and viewed by the participants. There was the opportunity for questions at the end of each session depending on the amount of time available.

Session plan



Purpose: Gain an understanding of how service design is used across the company.



Participants: The event was open to all employees in the company.



Agenda: Refer to figure 30.



Time: Day 1, 10:00 – 15:30; Day 2, 10:00 – 14:00



Location: Virtually via MS Teams.

Method

During the session notes were taken to capture key insights but unfortunately due to the nature of the event it was not possible to observe body language of the participants or their level of engagement. Note taking whilst being covert was a simple activity due to the remote nature of Microsoft teams.

Insights

There was a small but highly skilled group of service designers within the business. Predominantly they all work in the sales side of the business and have been using service design for the past 3 or 4 years. Being located in this part of the business makes sense as the sales side is customer facing and provides the service design teams with good access to the customers.

There was also good cooperation amongst service designers irrespective of the unit that they worked in. They had both a centre of excellence and a service designers guild set up to share ideas, agree on standard ways of working and learn from one another.

Service Design Days

Agenda:

1. Introduction
2. Our journey & future hope
3. Customer centric work
4. Customer research insights
5. Community first approach
6. Service blueprinting
7. Behavioural groups
8. Service design & agile
9. Research types
10. Case studies
11. Close



Figure 30. Service design days agenda.

There was good evidence of knowledge being transferred across the different service design teams and they seemed supportive of one another. (Not competitive) All teams used design thinking which is summarised in figure 31 and described in section 3.4.1, to help guide their thinking and they worked closely with the digital development teams. As the services being developed were primarily digital this was an important working relationship as they would not be able to make changes to the various platforms and interfaces themselves. From the examples provided in the sessions over the 2 days, there was significant co creation of new service ideas with both partners and customers.

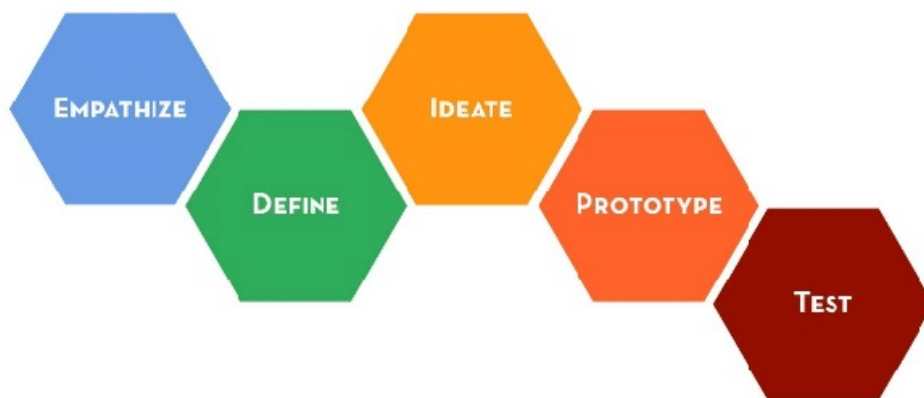


Figure 31. Hasso-Plattner 5 steps to design thinking (Traifeh, 2019, pp. 165-169).

4.5.2 Interview – Centre of Excellence

During the observation session it was identified that there was a number of centres of excellence being used for both agile and service design. In order to better understand why these were set up and how they functioned, an interview was organised. This interview was not initially planned as part of the study and was a late addition. Due to availability issues the interview was conducted with an agile coach not one of the service designers. The agile coach however knew the service design centre of excellence program well as it was modelled on the agile centre of excellence, and she was the one that had set it up.

Session plan



Purpose:

To better understand how service design was being used and how the center of excellence worked.



Participants:

Agile center of excellence owner and coach.



Agenda:

Appendix I



Time:

60 minutes



Location:

Virtual – MS Teams and mural.

Method

The same approach to setting up and managing the interview was used as that conducted for the lean interviews. The agenda was sent to the participant prior to the meeting so that she was clear on its purpose. A set of structured questions as detailed in appendix I was used. All questions asked were open ended and all answers were written down.

Insights

The centre of excellence engages employees working within the business as service designers, UX designers and UX researchers. At the time of the interview the centre was still being developed. This means that there were common meetings where they caught up to discuss various topics but the online centre where all the various methods, ways of working and programs, had not yet been completed. One of the main aims of the centre was to ensure that there was a common approach to service design across the business and to share ideas.

“We’re customer focused to ensure we can meet both their current & future needs”

An interesting finding from the interview was that the service designers, UX designers and UX researchers are organised under the agile framework. The group works as a

'chapter' which was essentially a collection of similarly skilled employees who were then allocated to different systems within the business to add their expertise. Refer to figure 22 for an example. This approach is also used with other skillsets such as data analysts. The value of this approach is that they are close to the teams developing the services and systems, however the downside is that they do not work together. This was one of the reasons why the centre of excellence was seen as being so important as it was a way for, them to share knowledge in a structured and organised way.

Although integrated into the agile framework, the designer's virtual team meetings do not follow the same cycles. For example the agile coaches meet every second day to discuss common topics, problems or ideas, whereas the design team meets every two or three weeks to discuss the same topics.

4.5.3 Force field analysis

At the completion of the research, the different methods used were analysed in order to determine the strengths and weaknesses associated with the service design approach. This was done using a force field analysis as described in section 4.3.4. It also used the same 5-point scoring system, with 5 representing a strong relationship, and 1 representing a weak relationship. The results of the analysis can be seen in figure 32.

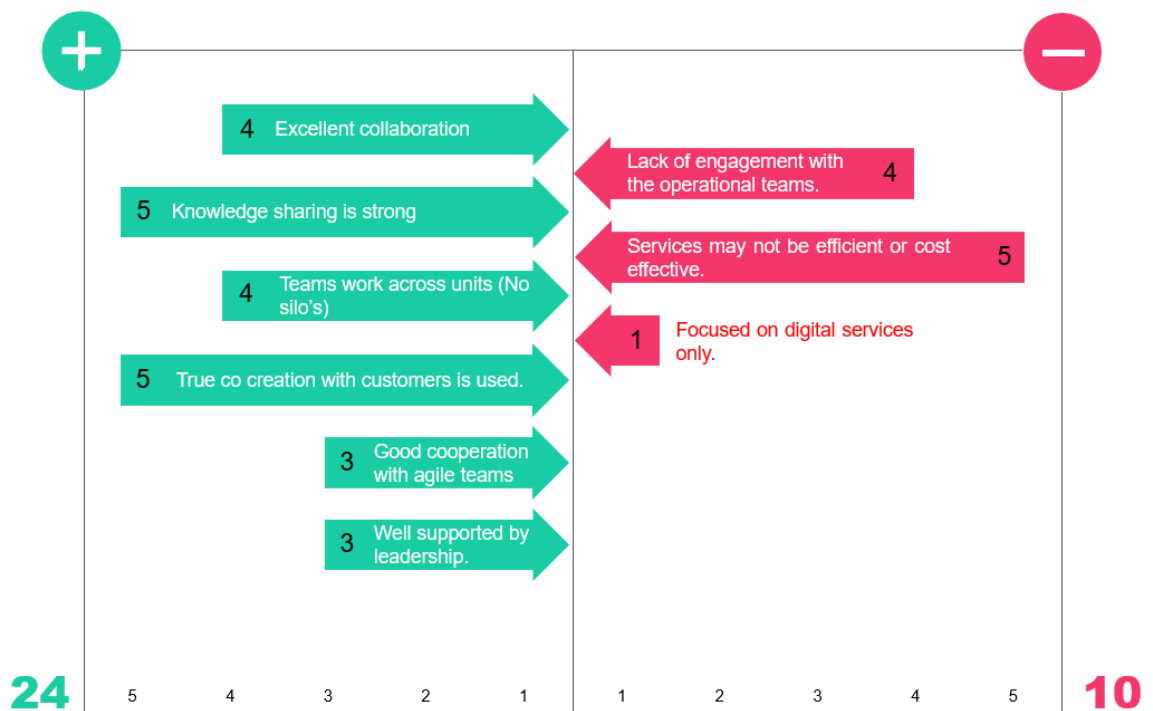




Figure 32. Service design force field analysis.

The positive influences for service design related projects were significantly higher than the negative forces (24 versus 10). The main strengths of the approach as used in the case study company was its focus on collaboration and networking, along with a strong emphasis on co-creation. Based on these results it indicates that this particular improvement approach was working effectively.

4.5.4 Scope and focus

The information collected from the observation session and interviews was collated and reviewed to identify the scope and focus for service design projects as they were applied within the business. The scope and purpose can be summarised as follows:

 SCOPE	All development is predominantly focused on digital development with a small group of service designers leading internal awareness training with employees.
 FOCUS	Customer centric focus with high degree of customer interaction to understand their wants & needs

There was a high customer focus with the service design teams however their scope was limited to digital systems. There was an opportunity to increase their scope to focus on other areas particularly in the customer contact centres to improve telephone services.

4.6 Business development

Business development is an overarching term used by the company to define the approach taken towards improving its business processes and systems. There was no set improvement philosophy used and the type of work varied depending on the unit and their focus. To illustrate this the motor vehicle business development team was focused on automation as they deal with high-volume processes and they would predominantly use agile as their improvement approach. The property business development team was primarily focused on process efficiencies and as a result would use lean as their improvement method. As can be seen in figure 33 some teams may use a combination of approaches and in general it was dependent upon the history of the department and the type of skills the business developers had.

Generally business developers commence their career in an operational unit and then if they have the aptitude and interest, transfer to the business development units when there is an opening. There was no formal or certified training program for people who are new to the area.

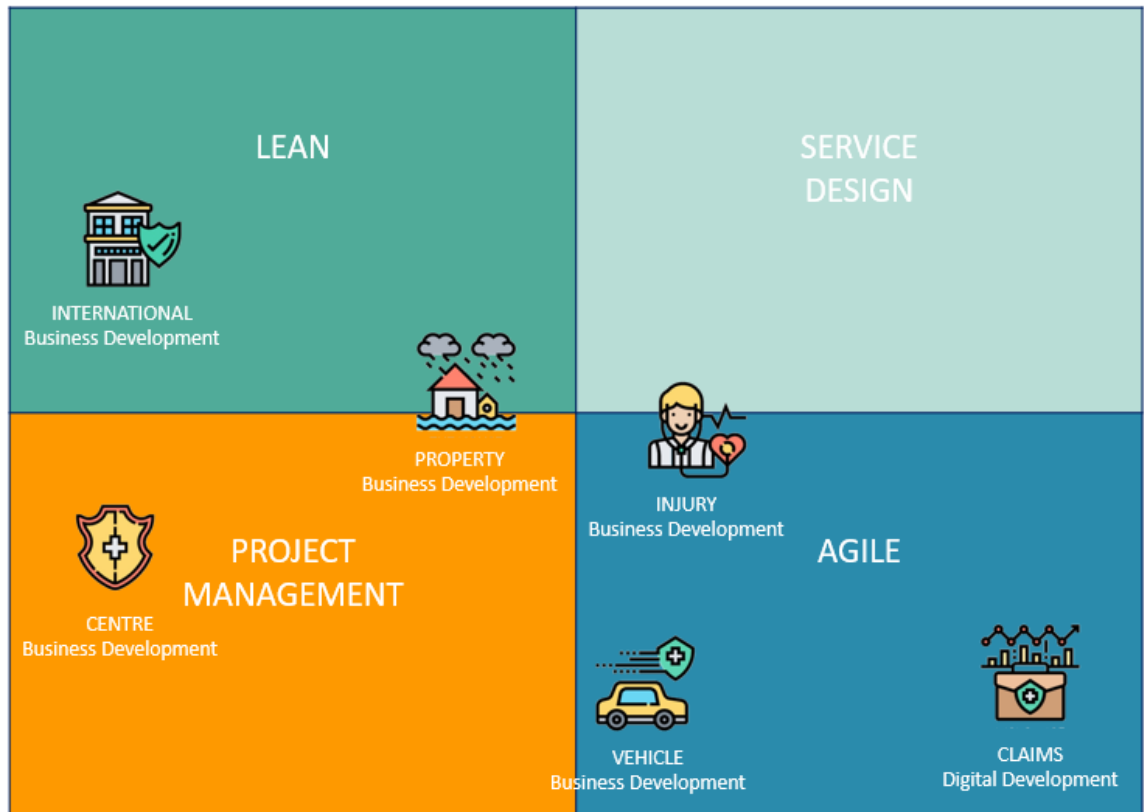


Figure 33. Improvement methods used by development teams.

Understanding how this approach to business development works for the company is important to determine if an operational excellence approach were used, how could it positively impact overall business improvement. To collect the necessary information a cause-and-effect workshop was run.

4.6.1 Cause and effect diagram

In this study a cause-and-effect diagram was used to identify the current issues with the existing approach to business development. In order to collect this information a virtual workshop using Microsoft Teams was run with a number of business developers.

Session plan



Purpose:

To review the concept of business development as it was being run by the company to determine what improvement approaches were being used.



Participants:

2 x business developers (Norway), 1 x business developer (Finland), 1 x development manager (Finland), 1 x learning development manager (Sweden).



Agenda:

1. Introduction to the session, 2. Explain the diagram, 3. Start the activity, 4. Summaries and close the session.



Time:

90 minutes



Location:

MS Teams and mural.

Method

Prior to starting the workshop the group was taken through the purpose of the session and to help improve engagement levels the two lies and a truth icebreaker activity was used. The cause-and-effect diagram covered the focus areas visualized in figure 34.

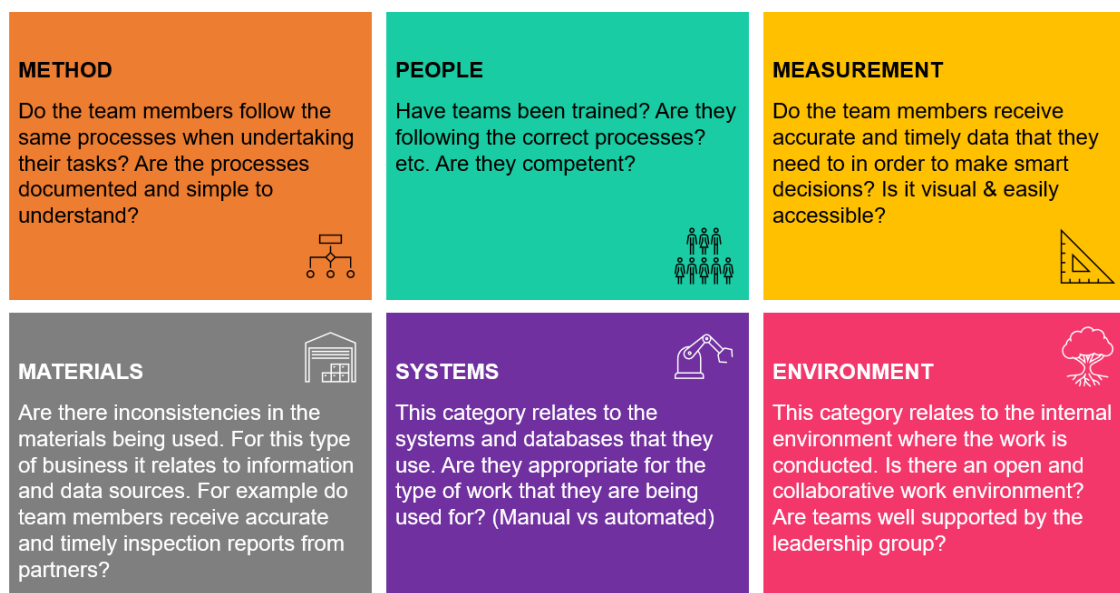


Figure 34. Cause and effect diagram categories (Westcott, 2006b, pp. 329-371).

When working through the diagram the systematic approach was used where each category was discussed one at a time. When reviewing each category the group was first reminded of the problem statement. At the end of the activity the team reviewed the

diagram to ensure they were happy with the content collected, and the Mural board was left open for a week in case they wanted to add any additional thoughts.

Insights

From the cause-and-effect diagram described in figure 35, it can be seen that the feedback on how useful the business development approach was, varied considerably depending on the person. Breaking the information down into the 6 areas of the diagram the following insights were collected.

Method – There was no common improvement method used. This was a result of all team members having their own unique way of deploying and managing projects. Some used a structured and traditional project management style whilst others adapted their methods depending on the type of work they were doing.

Environment – The workshop participants identified that one of the biggest issues they faced related to the lack of focus and support they received when running projects. There was also an issue when the projects that were successfully completed and transferred back to the regular operations of a particular team were not sustained and within 6 months returned to the previous state. This was attributed to a lack of follow up from leaders but also that the project teams were too distant from the operational teams. This meant that the operational teams felt that an external group had made changes to their way of working without consulting with them. A positive to this approach, however, was that there was no pressure put on the business developers and they appreciated the autonomy that they had to run improvement initiatives in the way they wanted to.

Measurement - Few business developers were given deadlines for their projects and quite often the scope of the project changed as the sponsor or steering committee changed their minds on what they wanted. This then meant that projects took considerable time to complete, often over a year and many “died off” due to a lack of engagement or progress.

People - The majority of the improvement team members were not dedicated to the projects as they had a regular operational role within the business, so the length of time the project ran for had an impact on their ability to do their regular job. Many of them also did not volunteer for the project and were simply told to participate. Engagement of the team members was also not helped by the fact that there was virtually no recognition by the business for the work that they completed.

Materials – This topic related to the information used by teams during the improvement activities. The feedback varied from teams in terms of how useful it was but from the numbers of issues raised this is not a high priority area.

Systems – There was frustration with the difficulty in getting digital development work prioritized. Multiple system platforms used by the business resulted in a high demand of improvements from the different operational teams, and it can take time to make the necessary changes. One positive was when items had been prioritized with the digital development teams, they were very easy to engage with and they were clear on their requirements.

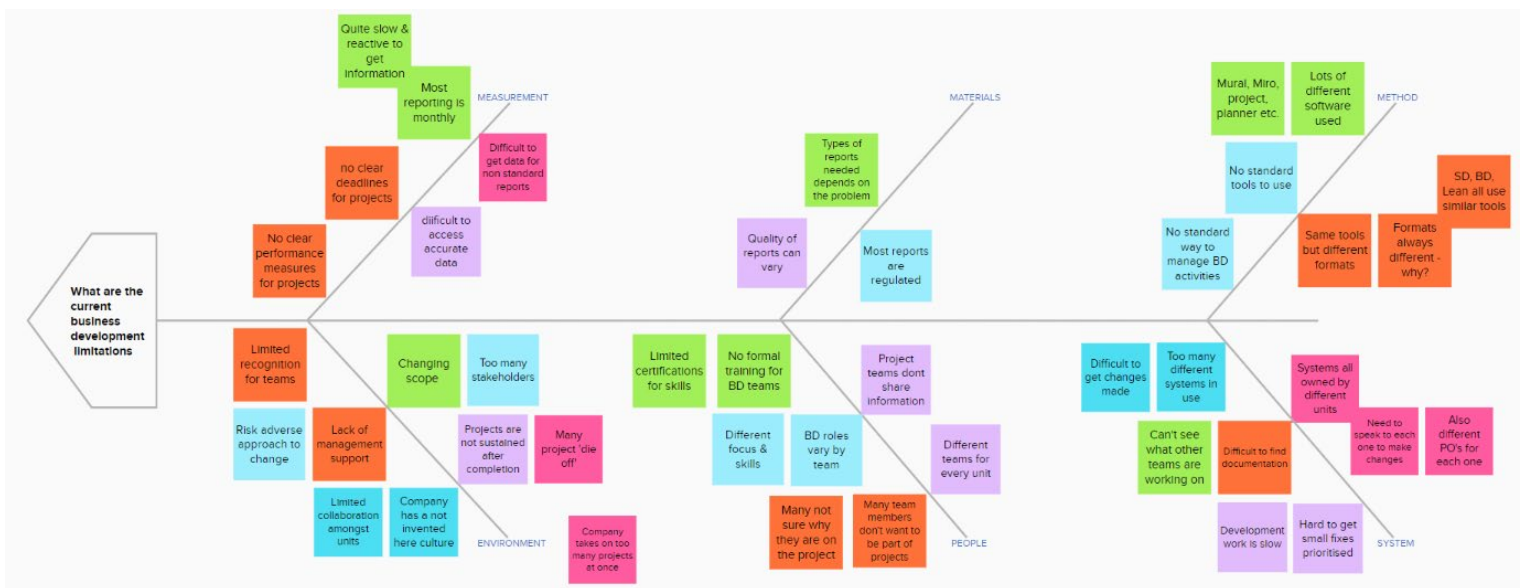


Figure 35. Cause and effect diagram.

4.6.2 Lesson learnt workshops

There were good insights collected throughout the cause-and-effect workshop however it was important to determine how big an impact these potential issues had on the actual delivery of the improvements. To establish this two different 'lessons learnt' retrospective workshops were run to get direct feedback from the teams on how effective their project had been and if they were to run it again, what would they do differently. The criteria for selecting projects were:

1. The project had to be recently completed (Within the past 6 months). This was to ensure that the details were still fresh in their minds.

2. They were separate activities. Different participants were involved and there were no inter dependencies between the projects.

Session plan



Purpose: Conduct a project review to identify what improvement approach was used and how effective it was.



Participants: Claims specialist (Norway), claims specialist (Sweden), claims specialist (Denmark), claims specialist (Finland), project manager, and business developer.



Agenda: Refer to appendix J.



Time: 60 minutes



Location: Virtual – MS Teams and mural.

Method

In order to break the approach down several different categories were reviewed to provide guidance to the discussion. These were:

1. Vision – Was there a clear vision for the project? For example was the end state or future clear? Was the vision the same for everyone?
2. Focus – Was it clear what the team needed to do and were they singularly focused on the project to ensure it met all necessary timelines?
3. Resources – Were the right people involved in the project? Did they have the necessary skills? Was the team size too big or too small?
4. Tools – What methods did they use and were they useful when working through the problem and coming up with solutions?
5. Engagement – How engaged were the team members, the stakeholders and steering committee? Were they actively involved or passive?

6. Communication – Was the project communication adequate? Communication can have a big effect on whether the project is deemed successful but can also affect how well the local teams implement the changes and sustain them in the future.
7. Success – Did the team feel the project was a success based on the objectives?
8. Process – What improvement process such as lean or agile was used and was it useful?
9. Other – This was open to any other general thoughts, ideas, or comments that the team members wanted to make and could be both positive and negative.

Each one of these topics was worked through independently and so that the participants do not just focus on the issues or problems with the project, they were also asked to think about what worked well with the improvement.

Lessons learnt 1 - Project code

This was a digital development project focused on eliminating infrequently used claim codes from the system in order to reduce the number that the claim handlers had to sort through to find what they needed. Basically the project was trying to improve the efficiency of the claim handlers. The secondary benefit was to improve the quality of the data being stored and used by the business for analysis. The project was run across the Nordics and had been completed one month prior to the session being held. The team was made up of 4 specialist claim handlers, one from each country, a project manager, and a business development manager. All claim handlers had extensive experience working with the system that was being reviewed.

Insights

Overall the project was deemed successful as the key deliverables had been met, however the project had taken 6 months longer to complete than planned. This was due to delays with necessary IT development to the systems.

The team was well set up and had the necessary skills to complete the project however there was considerable discussion regarding the project communication both internally within the team and externally with stakeholders. It was felt this was an area that could be better structured and managed.

There was also considerable discussion regarding the scope of the project. The company typically runs larger projects with a very broad scope however this one had been quite clearly defined. That being said it was still felt that it could have been split into two different projects to try and shorten the overall time required.

In terms of the way the project was managed it did not use any of the key improvement methodologies such as lean, agile, or service design. It was however well structured and followed the Plan, Do, Check, Act (PDCA) methodology. All activities were managed using a Microsoft planner board that the team members and stakeholders could access. Full results of the workshop can be seen in figure 36.

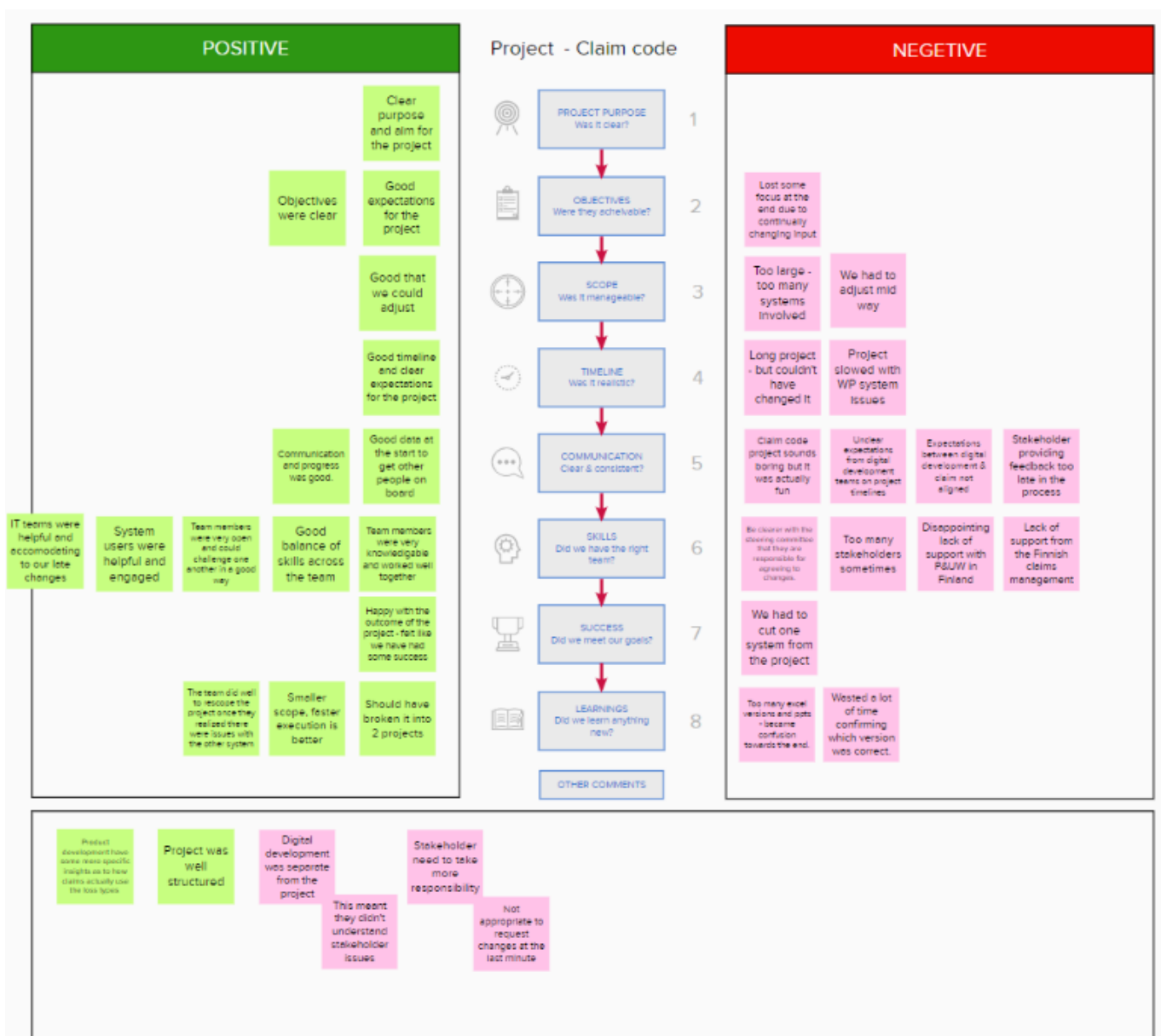


Figure 36. Claim code lessons learnt session.

Lessons learnt 2 – Pay Back

This was a cost control project being run across all Nordic countries and had been completed in October 2022. The project was run for 6 months, and its aim was to look at improving the recovery of money owed to the company from various third-party companies. This was a large project that had several reference groups to support it and all project team members were recovery specialists. In total there was 1 from Finland, 2 from Sweden, 1 from Denmark and 2 from Norway. The project was run by a project manager and was supported by a learning development manager and an analyst. None of the team were full time project members and aside from the project manager, none had any formal training in project management.

Insights

All ideas and issues identified were captured in the lessons learnt template that can be seen in figure 37. The key insights from the session were that this was a large project that involved 7 different stakeholder groups. There were also another 15 reference groups that were consulted during different parts of the project. This made it difficult to balance the needs of the different groups even though there was a clearly defined charter. Overall the project team also felt that it was too big a project and should have been split into several smaller ones. There were also a number of improvement initiatives that required action and the team members found it hard to keep up with what was required and when. A planner board was used for these tasks however multiple people had been allocated to the same activity which made it difficult for them to know who was actually responsible.

This particular project required considerable data and digital support. Although resources had been allocated the team found it very difficult to monitor what progress was being made in these areas and as a result key deadlines were missed. Overall the project was deemed successful as it met the Objectives and Key Results (OKR's) that had been set, but due to the digital development needs not being completed, a lot of the work is still manual and requires significant number of resources to manage the process.

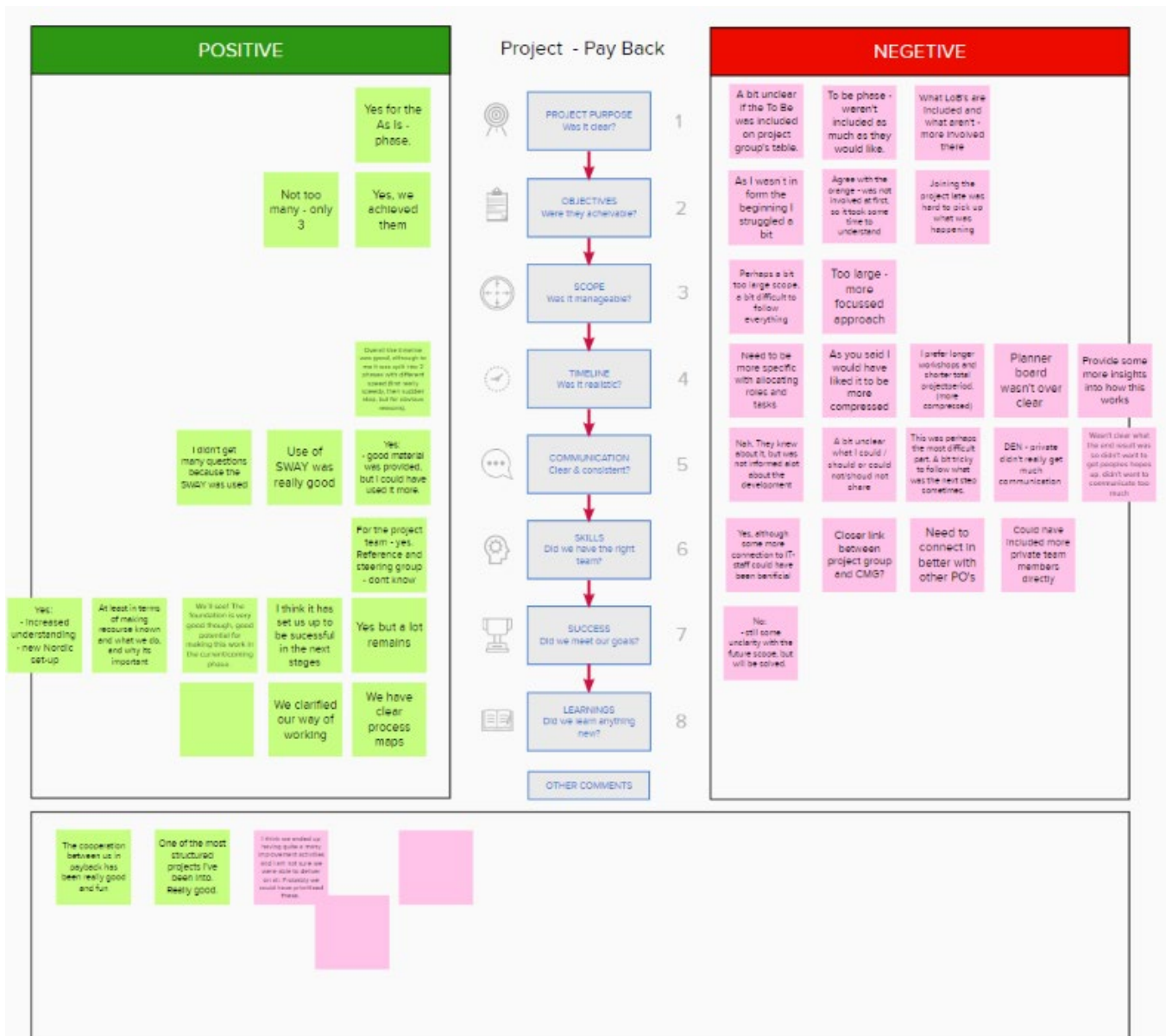


Figure 37. Pay back lesson learnt session.

4.6.3 Force field analysis

From the results identified using the different research methods, the strengths and weaknesses associated with the business development teams was visualised using a force field analysis. This approach is the same that was described in section 4.3.4. and also used the same 5-point scoring system. Five represented a strong relationship, whilst 1 represented a weak relationship. The results of the analysis can be seen in figure 38.

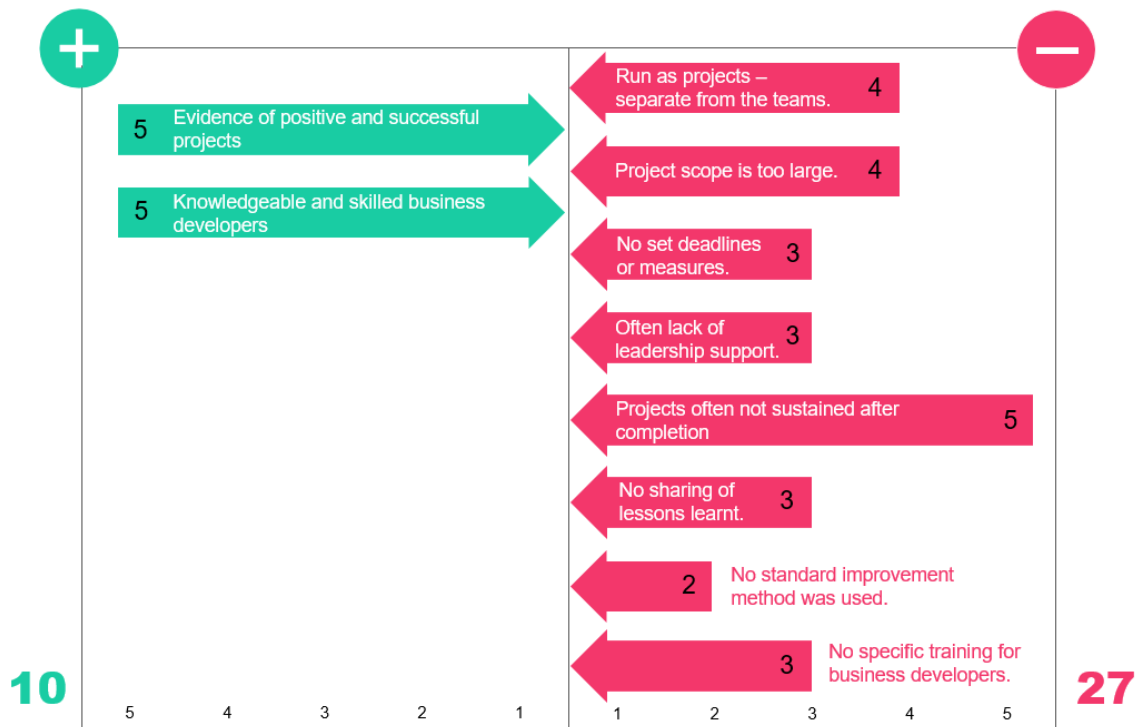



Figure 38. Business development force field analysis.

The negative influences related to the business development improvement approach were significantly higher (27) than the positive influences (10) which reinforces some the results from the other research techniques. The most significant issues relate to the limited business development project scope and lack of sustainability of completed projects. These issues will be discussed further in the section 5.1.

4.6.4 Scope and focus

All the information collected from the workshops was collated and reviewed to identify the scope and focus for business development projects as they are applied within the company. The scope and focus can be summarised as follows:



SCOPE All development is focused on internal business or digital improvements and is led by a select department using project management skills.



FOCUS Dependant upon the type of projects being run but in general there is very limited (if any) contact with customers directly to understand their needs.

The business development teams are internally focused however they have a much broader scope of work than other improvement teams. Depending on the problem they are trying to solve they may cover digital improvements, customer contact times, cost reduction projects or training support for operational teams. All their work is however focused on resolving internal issues.

4.7 Benchmarking

An internal benchmarking study was undertaken on the different improvement methods to determine if there were any measurable results that could be used to indicate how successful the different methods were. Although there was feedback from different employees collected through various workshops regarding how well the different approaches were using, reviewing the value delivered through performance measures was also identified as important.

4.7.1 Agile success

Data was collected from the previous sprint directly from the Azure system and then manually graphed in figure 39 to visualize the data. In total there were 144 items prioritized and although limited in scope the data does validate the information collected in the interviews and workshops. For example it was indicated in the workshops that the majority of digital development was focused on volume related initiatives. This was evident by the center and motor units having the most items being worked on. They are high volume units, whereas the international unit involves high complexity, low volume work.

The prioritization process is the same for all units so it can be concluded that the decision making is volume related. It is interesting that both the property and international units had a small amount of items prioritized as they both represent areas that cost the business a considerable amount of money. If a less volume focused approach was taken to prioritization it could provide significant savings to the company.

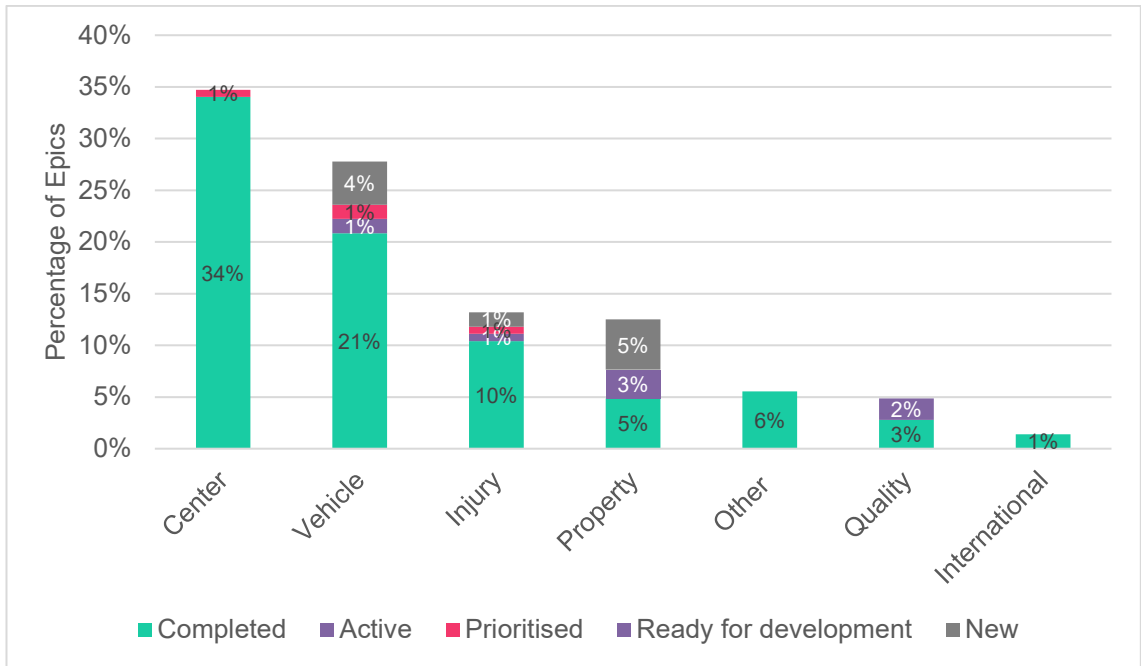


Figure 39. Agile focus by unit in 2022 (Company X intranet, 2022).

When looking at the execution rate for the agile teams in figure 40, it is exceptionally good. In the previous sprint 92% of all initiatives that were prioritised for the sprint were completed. This also compares to two previous sprints were both above 86% and indicates that the process they use is effective.

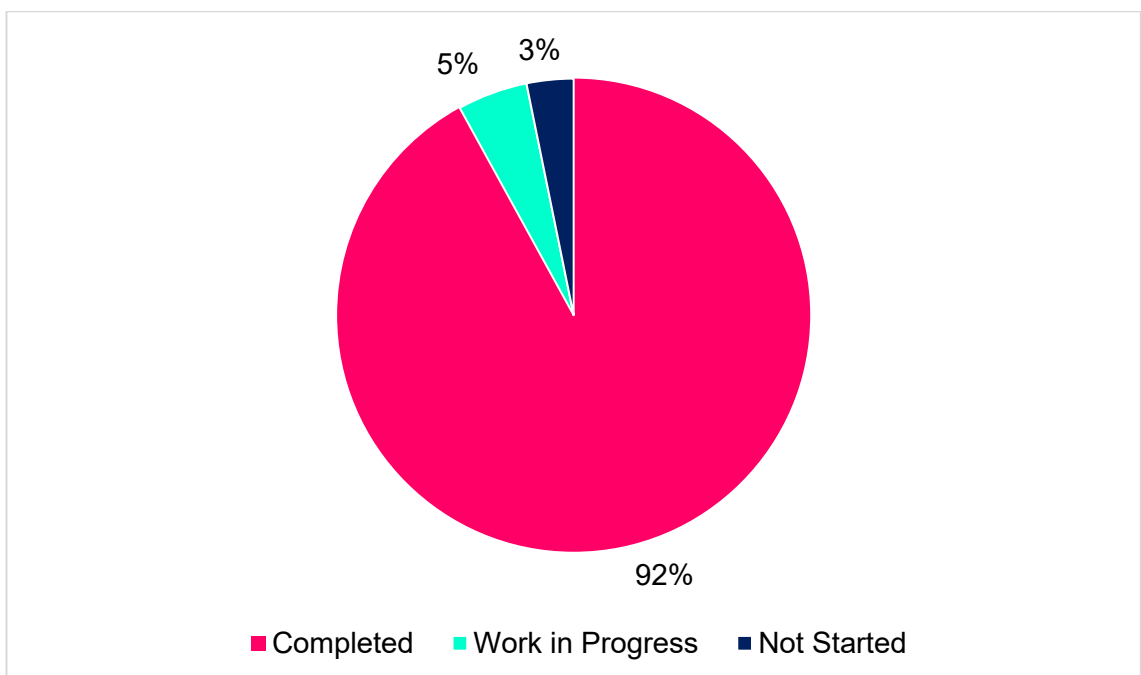


Figure 40. Agile completion rate in 2022 (Company X intranet, 2022).

4.7.2 Business development success

A review of the success rate of the various business development teams was also planned but due to the limited tracking of activities across some of the units the only information that could be sourced was from the international team. Part of the reason for the lack of available information was a large restructure that took place in 2021. This has resulted in teams having to recruit new members and also identify new ways of working which has taken precedent over other areas such as this.

The overall project completion for the international team in 2022 was 60% as depicted in figures 41 and 42, which is lower than the agile team who achieved 88% on average. It should be noted that these projects are not all run by the business development team. At least 50% are led by the operational teams and are coached by the business developers.

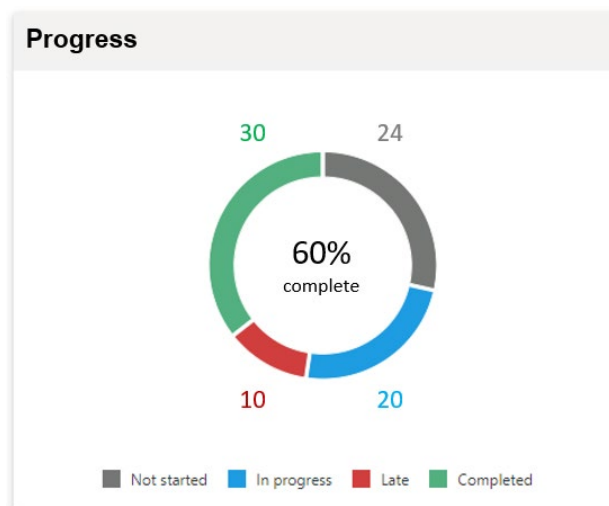


Figure 41. International project completion rate in 2022 (Company X intranet, 2022).

Many of these projects are larger and more complicated than the agile initiatives, however this is one of the strengths of the approach. Agile teams are skilled at breaking larger activities down into smaller initiatives that they can compete within their super sprint cycles. This is an area where the business development teams who typically use traditional project management could learn from.

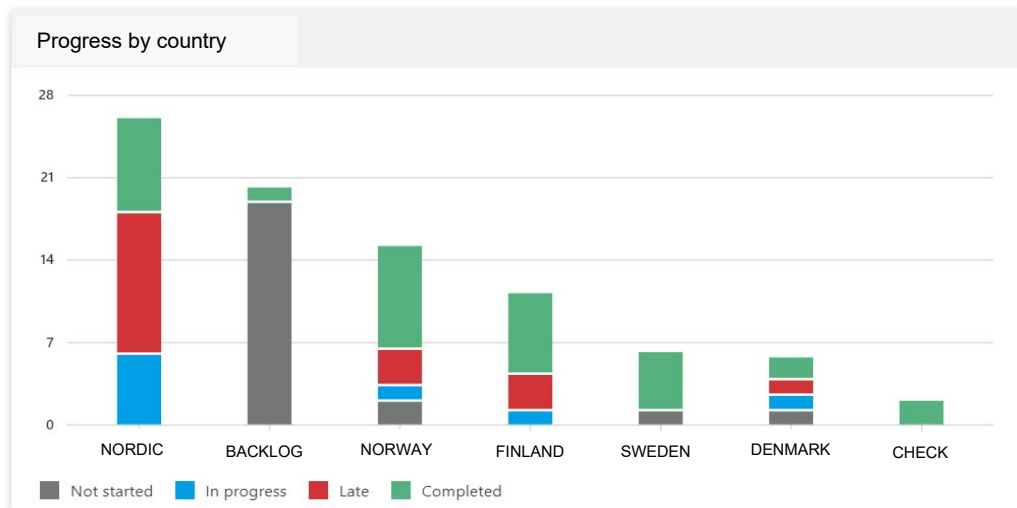


Figure 42. Completion by country in 2022 (Company X intranet, 2022).

Ideally it would also be optimal to measure the value of the initiatives that were deployed across the business however as mentioned earlier in the study in section 5.1.4, the OKR's are not actively tracked. Many of the OKR's are also behavioural which means that they track whether an activity was completed rather than if it derived any value or time savings to the business.

5 DELIVERING EXCELLENCE

5.1 Operational excellence model

The key idea behind using the proposed operational excellence system is to get the business to think differently and more holistically about improvement than they currently do. Operational excellences aim is to deliver sustainable and continued improvement across all aspects of a business and at every level, in order to deliver services that go beyond the customers' expectations. Ideally, the aim is to establish a solid foundation that can be leveraged to develop innovative processes that enable the business to be considered 'world-class' in its sector. This means a company that others use as a reference to aspire to. To do this however, there needs to be a clear and unified approach to improvement.

As identified in the service methods, section 3 of this document, all of the improvement approaches, lean, service design, and agile come with their own set of principles, tools, and team structures. This approach in itself can be considered as non-value adding as there is a duplication of effort. An even worse aspect associated with this is that it can leave employees that need to work regularly with the different improvement approaches to become either confused or 'burn out' with having to adjust to all the different requirements (Hadid & Mansouri, 2013, pp. 750-783). It also makes it very difficult to deliver a 'step change' in business performance as there are internal barriers caused by the way different teams work.

Operational excellence on the other hand is seeking to build a unified approach to improvement. It aims to establish a single-minded focus with its employees to continually strive to be better in all aspects of their work, each and every day. To do this a business needs to provide their employees with the necessary skills and then empower them to be able to lead and drive change in their respective areas. It also requires a clear and consistent business framework that facilitates the changes that need to be made in the most effective and efficient way possible. The proposed operational excellence framework for this thesis is made up of 4 key operational areas that are supported by 2 cultural enablers. These are illustrated in figure 43. The cultural enablers cover the needed improvement vision and business values to enable the improvement approach to work.

The idea behind establishing 4 key operational areas is to ensure that there is a balanced approach to improvement. One of the drawbacks to using an improvement approach such as lean is that it can become heavily focused on process improvement only (Neuhol, 2020). Although the voice of the customer is a central part of the lean approach, often teams quickly forget this need and focus on using the different tools and methods to drive internal process improvement only (Kolko, 2015). It was also identified during the research that the agile approach used by the business also creates this problem as it focuses heavily on system development with little consideration for people development. For a more detailed breakdown of the operational excellence system refer to appendix B.

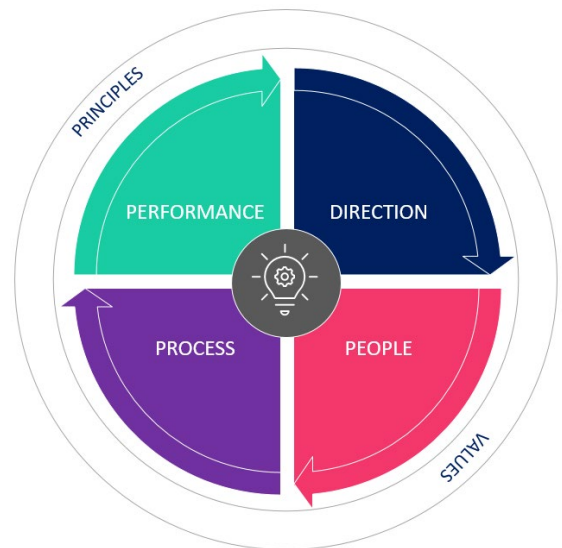


Figure 43. Operational excellence framework.

5.1.1 Direction

The operational excellence framework starts with direction setting. This section focuses on the development and deployment of a strategy with its aim being to help the business define what they want to become and how they will achieve it. The businesses strategic direction can vary over time and can be heavily influenced by both internal and external factors. Internal forces include things such as company culture, finances, and employee skill levels. External factors cover customer needs, political, environmental, social, technological, legal, competitors, and ethical forces (Håkansson & Snehota, 2006, pp. 256-270). Having a structured and consistent approach helps ensure greater clarity for teams to understand how the strategy development and deployment process works and what steps are required. This then allows them to become more familiar with the process, its intent, and its execution. For leaders, the process provides them with the necessary principles, programs, and tools to carefully align key objectives across different business areas or departments. It also allows them to balance the strategic needs of the business with the operational risks they are periodically faced with. It also allows leaders to extend the responsibility for strategy execution and tactical decision-making to their teams to help provide greater ownership and empowerment (Bregman, 2017). To help drive a balanced focus during strategic development and deployment the direction component

of the operational excellence system can be broken down into 4 key areas. These are illustrated in figure 44.



Figure 44. Elements of direction setting.

Strategic direction

Having a clear strategy would help prevent one of the main issues identified from the research relating to agile where the majority of the improvements were too specific and tactical in nature. From the research, it was identified that specific improvements were identified for each system and then prioritized for development. Making improvements to a particular system is a logical approach as the work is focused on resolving current issues however, the downside is that the teams are constantly refining and improving existing system functionality rather than determining whether a completely different approach would provide a better long-term option. The term ‘paving the cow path’ is often used to describe this approach. Essentially the teams begin automating parts of a process based on an existing poorly defined process without a clear endpoint or direction. This then results in a process that is automated, but not very efficient or effective (Schmarzo, 2019).

The current approach using scaled agile also did not appear to address the inefficiencies caused by having multiple systems that need to be managed and upgraded. The number of systems is driving complexity across the business and ties up considerable resources. It also means additional time and money is required to train people to use the numerous platforms. Operational excellence could enable the agile group to think more broadly rather than in the product focused silo’s that it currently does.

Alignment

Establishing clearer strategic alignment could help eliminate waste within the business. For example, agile is focused on delivering fast digital improvements, whilst service design is focused on establishing a customer-centred service experience. As there is no

lean understanding or awareness within either of these teams it means that there is no process efficiency focus. Lean tools and techniques can improve customer service by reducing non-value-added activities such as the number of call transfers or unnecessary information requests. It can also reduce errors and improve service quality (Elias, 2016). However, as there is no lean awareness within the agile or service design teams the concepts need to be applied by operational teams after a product or service has been established (Neuhol, 2020). This then results in the operational teams, usually the business developers, trying to streamline the 'backstage events' that were described in section 3.4.1, to deliver improved effectiveness and efficiency. This is a slower approach to driving improvement as the lean concepts need to be retrofitted to the service or digital solution after it has been deployed to the market. It also means that some of the design features will be removed in order to make them more efficient without understanding why they were there in the first place. There is generally always a service productivity trade-off between customer satisfaction and service efficiency (Carlborg, et. al., 2013, pp. 291-304). Applying a simple concept such as the eight wastes to a service would add value during its initial design. The 8 wastes are a traditional a lean tool used by teams to identify improvement opportunities within their processes. The 8 wastes identify common process-related problems such as over production, over processing, wasted talent, motion, transportation, waiting, defects, and inventory (Westcott, 2006b, pp. 329-371). This would also enable the business to improve its services to better meet customer expectations which then leads to a competitive advantage (Neuhol, 2020).

Engagement

Having a clearly defined strategy helps ensure that all improvement work in the business is clearly linked to either strategic objectives or operational risk-related issues. Doing this prevents units from establishing project teams tasked with working on small, low-level changes that do not add any value to the business. This was one of the issues identified from the research into the original lean deployment. Teams dedicate resources to resolve these issues that can then impact customer service or tie up resources that are required for larger strategic improvement activities. It was found from the research that teams often take this approach because the local issues solve problems specifically related to them, whereas the strategic initiatives are seen as somebody else's work and do not always resonate with them. Essentially there is a lack of engagement with the strategy. (Bregman, 2017).

It should be noted that the lack of focus on the end-to-end process from teams is not always a result of a lack of strategic understanding. Often the improvement teams do not have the authority to work across departments due to the various departmental boundaries and hierarchies that exist within a company (Neuhol, 2020). These boundaries inhibit the effectiveness of processes and teams (Snook, 2012), and can lead to increased waste, duplicated work, and poor customer service (Neuhol, 2020).

From the research it was seen that the multiple improvement approaches used across different units did inhibit the businesses overall improvement. The business development teams worked predominantly in their own operational areas and had limited transparency or involvement in other areas. In instances where they did work across operational areas such as the Pay Back and Claim Code projects, there was evidence of them being delayed due to indecision or lack of support. Both of these projects were targeting specific operational improvement areas. Project Payback for example was looking to improve third party legal liability recovery, whilst project Claim Code focused on improving data quality within one of the business systems. It was also evidenced from the agile teams that only worked with specific systems or functions. For example there was a different squad for each system used in the business. To help prevent these types of issues, operational excellence would drive a common purpose, improve cross-functional collaboration, and provide a greater focus on delivering improved business performance (Saxena, 2021).

Progress

Within operational excellence there is a clear focus on ensuring the business and its subunits periodically monitor their strategy deployment progress. This topic was not specifically covered in this case study. The results of different improvement units were reviewed but not the group's overall strategic progress. This would need to be reviewed as part of a separate study.

5.1.2 People

The heart and soul of the operational excellence program is centred on people. It does not matter how great the strategy nor how well-developed the improvement framework is, there is little possibility of establishing sustainable improvements if employees are not engaged and motivated to make the change (Durin, 2012). The companies that are the leaders in their industry are the ones that first and foremost recognize the importance of their employees as valuable assets that contribute to their future development. They

strive to find and recruit the right people, invest in the training and development of their teams and then create a healthy and competitive culture. Finally, they encourage their teams to strive for excellence each and every day, not to increase profits or shareholder value but because it makes their job easier and improves their customer's experience (Irwin-Szostak, 2020.). The aim of this operational excellence section is to establish a workforce that is autonomous, engaged and collaborative. To help ensure that this happens the 'People' component of the operational excellence system can be broken down into 4 key areas that are illustrated in figure 45.

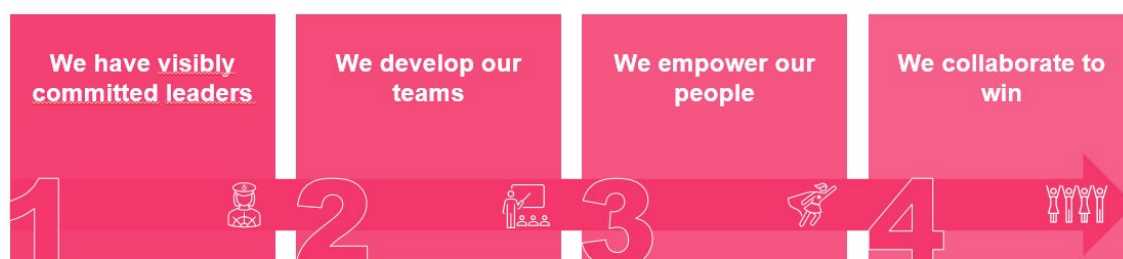


Figure 45. Elements of the people section.

Committed leadership

An effective operational excellence program must permeate all levels of a business. Leadership is therefore a key enabler that determines whether it is established as a culture within a business. Leaders need to develop a clear vision for operational excellence, communicate it effectively to their employees and empower them to adopt it as their own mission. They also need to ensure that the strategic direction of operational excellence is aligned to the strategic direction of the company to ensure that the improvement work adds value to the business.

Leaders also need to demonstrate commitment by actively engaging in operational excellence and instilling a “can-do” attitude throughout the business. The improvement approach cannot be something that is deployed only to the ‘front line’ workers. Leaders need to be trained, actively involved, and demonstrate the various tools and methodologies in the way that they themselves work. Operational excellence requires leaders to be part of the cultural change journey. This was an issue that was identified from the research into the business development teams, section 4.6.3. It had been identified that support for various initiatives varied heavily depending on the leader's interest. The interest could also change over time as new projects were started or there

were new ideas. Many of the changes required from an improvement project also focused on the teams and how they worked, but often did not require any change in behaviour from the leaders. It was also identified during the lean projects that although leaders were often tasked with running an improvement activity, the changes were always specifically related to their team and how they operated or interacted with a system. There were limited examples where the changes impacted the leader directly. In general the scope of improvement was always narrow.

Skills

One of the key areas that all improvement approaches neglect is the importance of people. Internal systems or processes are often developed and improved without consideration for the skills needed by employees to use them. This can result in the changes never fully realizing their potential as the users cannot fully leverage the new capabilities (Koch et. al., 2013). It was identified from the research that all agile training was limited to those employees that were part of an agile squad or tribe with its focus being on improving their knowledge of the methodology. The potential issue with this is there is no focus on developing the capability of other internal users within the business. This can result in functionality being deployed that they cannot fully understand or utilize. Operational excellence places an emphasis on the business thinking about what skills employees need for the future and then proactively preparing them. An example of this comes from previous experience working for the Japanese beer company Asahi, which has transitioned from a factory workforce of predominantly low-skilled employees to one where in 2018, engineers ran many of the manufacturing lines due to the complex robot and automation that had been installed.

The training and development of employees also needs to extend to the improvement teams, particularly the business developers. From the cause-and-effect research in section 4.6.1, it was identified that the business developers did not use any common framework for improvement which then resulted in them being provided with no formal training when they took on their roles. Many relied on what they had learned in previous companies or from being guided through on-the-job training. Not only is this approach time consuming but without a clear framework being in place it can lead to new business developers learning the errors and habits of other employees. Standardized training programs could be developed and used, across different areas of the business rather than the approach currently used which is for every improvement team to develop their own ad hoc training. Over time as the business matures and the business developer

skills grow, the training could be supplemented with external certifications in other advanced improvement approaches such as six sigma or theory of constraints, that would complement the existing skills within the operational excellence system.

Another focus area of operational excellence is the emphasis on helping employees acquire additional knowledge so that they can become multi-skilled to perform different tasks. This provides the business with greater flexibility and also helps expand its focus and awareness (Hadid & Mansouri, 2013, pp. 750-783). As was demonstrated in the super sprint planning process there was waste in the agile processes being used, specifically the amount of time used for prioritization and planning. Although some of these issues have been subsequently identified and improved, applying a toolset such as the lean 8 wastes that was described in section 5.1.1 would make this task faster and simpler. Providing basic training to the agile teams could help improve their awareness of waste which could ultimately be used to improve the way they work.

The operational excellence system can also challenge the business to have a clearer focus on what future system development means for not only employee skill and competence levels, but also team structures and resourcing. A greater focus on automation and artificial intelligence can mean that fewer employees are required in the future or that their current roles need to be modified to focus on new or different activities. As depicted in figure 46, as the technological capability of a business grows, so too should the skills and focus of the teams (Piwiec, 2022). For this to happen a clear strategic direction would need to be in place that specifically identifies this.

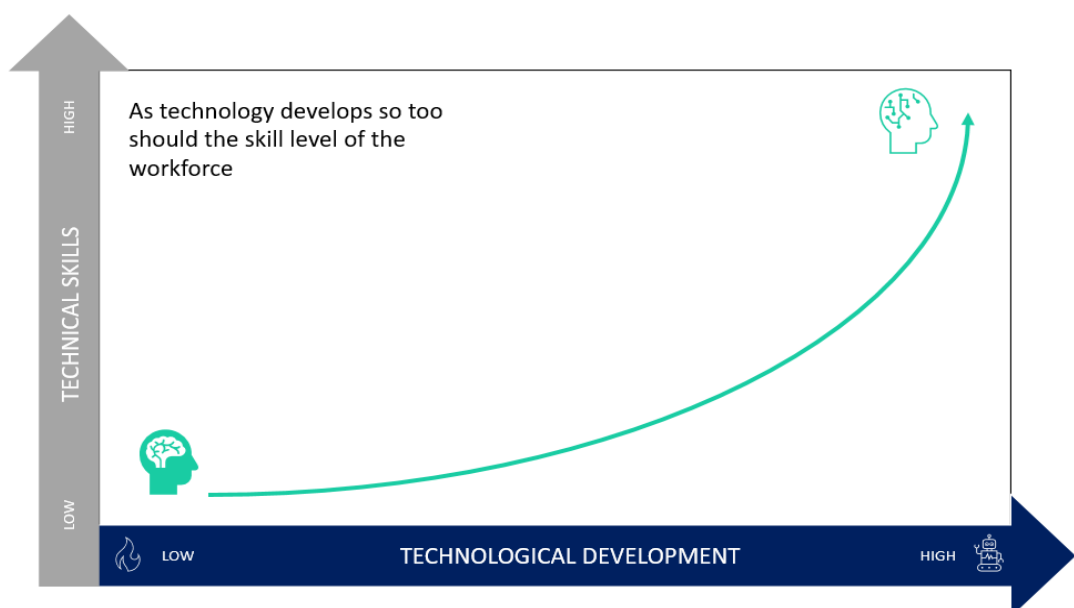


Figure 46. Employee skill migration (Piwiec, 2022).

Empowerment

A key focus area within many improvement approaches such as lean, agile and operational excellence is the empowerment of people. The aim is to move away from having specialist teams lead all the improvement activities to an environment where the operational teams can identify and then resolve issues themselves through basic problem solving. To enable this, employees of all levels are trained and then empowered to make changes rather than needing management or project teams to lead initiatives. The emphasis is to establish the improvement capability where it can make the most difference and to improve engagement (Miller, 2005). From the research into business development projects, it was identified that there was an issue with the sustainability of the projects once completed. This can be partly attributed to the project management style that was used by many teams. This approach involves enlisting a key member or two from the operations team to be part of the project group. This group then works on developing the necessary changes, but it is done in isolation from the majority of the operational team members, so they do not feel like it is theirs. This lack of co-creation with the end users inevitably inhibits the sustainability the improvement. This is not to say that the business development group was not effective. There were excellent examples of projects that have been well-run and produced good results, however, it was raised as an issue by various teams in the research. Another important consideration is that improvement resources across the business are limited, so it is important that the changes are sustained into daily practice. To enable this change in approach the operational teams need to have the skills to identify and solve problems without always requiring a specialist improvement team.

Collaboration

From the research conducted with the business development teams, there was a siloed approach to improvement activities. There was limited interaction between business developers from different units and although the leaders periodically met to discuss activities, it was at a high level with no specific detail provided. Some of this may be related to organisational changes that took place in March 2022 and teams were still finding the best way to work with one another. However another cause for this was the different focus areas and methodologies used. For example, one group was focused on process improvement through project management versus another focused on digital development with the agile teams. Operational excellence pushes for a standardized approach to improvement in order to make it easy for employees to understand. It also

aims to identify and resolve issues faster and in a more structured way by using formalized methods to identify and then eliminate problems. This ensures that people identify and solve problems using the same approach. It also makes the change management process simpler as employees become familiar with the approach being used. As a structured approach is used, the outcomes are also more effective as less trial and error is required, and the results are easily shared with other teams which then facilitates collaboration.

5.1.3 Process

This section is focused on business process improvement. Established companies with a large number of employees can have complex organizational structures, systems, and processes, covering many different industries and spanning many countries. Companies need to develop reliable processes to ensure that they can deliver the highest levels of service to their customers. Ideally, they should also be focused on servicing their customers in the most efficient way possible, with minimal waste, and with enough flexibility that it can be adapted to deal with any unexpected delays or issues (Vincent & Manos, 2012, pp. 45-276). The process component of operational excellence aims to ensure that where improvement opportunities are identified, structured problem-solving techniques are used to eliminate them. To help drive a balanced focus for improvement the 'Process' component of the operational excellence system can be broken down into 5 key areas that are illustrated in figure 47.

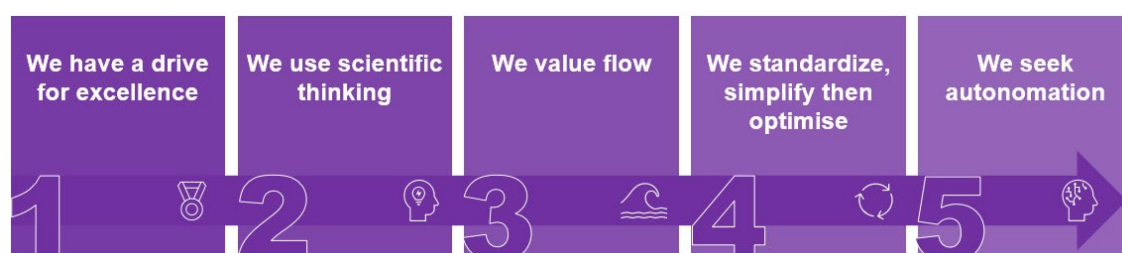


Figure 47. Elements of the process section.

Driving excellence

It is evident from the research that the company already has a drive for excellence. The number of different improvement teams whether they were focused on digital, or business development, is testament to their desire to improve. However activity does not always translate into demonstrated performance improvements. A more focused and coordinated approach across the different teams that targets delivering measurable

performance improvements would add value to the business. Operational excellence would help provide the overarching framework needed to do this as it has a clear focus on ensuring improvements deliver measurable results.

Scientific improvement

One of the key fundamentals behind the scientific method is that teams fully understand the current state or environment that is creating the problem. When reviewing the business development projects being run and the length of time they took, it could be seen that one of the issues was that there were no transparent and standardised programs in place across various areas of the business. This means that significant time was taken process mapping and documenting the current state. It also meant that there were potentially some teams making changes without fully understanding the current state of a process or how effective it was. Not only does a lack of standardization create issues for the improvement teams but it also causes daily problems for the operations teams. Issues such as long processing time, communication breakdowns with customers, and inadequate support from other functions are all a result of this issue (Maleyeff, 2006, pp. 674-689).

Another strength of operational excellence is its use of data which is due to the concept being an extension of pre-existing manufacturing improvement approaches such as lean and six sigma. These improvement approaches place a high importance on using verified and validated data however from the research it was found that there was limited use of statistics and validated data by any of the improvement teams.

Flow

Improved process flow can potentially improve both efficiency and customer satisfaction (Carlborg, et. al., 2013, pp. 291-304). One of the issues with having a localised improvement approach that was seen in the research with the teams using lean, is that the improvements can optimize one area but not the end-to-end process. Even worse, the optimized sub-area may adversely impact performance in another part of the business. This occurs as the improvement teams do not have full visibility or understanding of the total end-to-end process (STR Team, 2013). For example, some of the business development teams were focused on reducing employee handling time in specific tasks however, they did not focus on the total handling time of the process. This means that they are looking to save seconds in a process step when the total process takes hours.

Standardising, simplifying, then optimising

A key requirement for any improvement team is to first establish stability within a process prior to making changes. The purpose of doing this is so that any changes that are made during the improvement initiative, good or bad, will be easily identified. In order to first stabilise a process, teams need to clearly document it and then provide training to the relevant employees. This helps eliminate the variation caused by different team members executing the process steps differently. It also makes it easier to identify problems and the approach is based on the idea that “*Without a standard, there can be no improvement*” (Saxena, 2021).

Operational excellence looks to ensure that processes are made up of specific and repeatable steps that have clear inputs and outputs (STR Team, 2013). The aim of this focus is not to lock processes down and inhibit innovation but to ensure that processes can be easily replicated. This is a focus that service design and agile do not have. Standardised processes can also act as a way of driving increased efficiency and customer satisfaction (Carlborg, et. al., 2013, pp. 291-304), as teams would then begin to focus on simplifying the various business processes to make them more efficient.

The last phase is to try to optimise the process. The logic is that once the teams have a complete understanding of the process, its inputs, its outputs and what is needed for it to function effectively, they can begin to look at optimising the total process. This would involve looking for ways to eliminate or streamline tasks. It could also involve automating a process or using artificial intelligence to drive improved performance.

Autonomation

A lack of documented processes also creates problems for the agile teams as there is not always a clearly defined and effective process for them to evaluate. Robotic Process Automation (RPA) when applied to certain areas of a service business can create value by reducing the need for human interaction with mundane and repetitive tasks. It also frees employees' time to allow them to focus on more value-added activities such as problem-solving. In order to support the RPA development process it is important that the existing processes are well understood, documented, and easily repeated. It is also important that non-value-added steps and high amounts of variation are eliminated (Neuhol, 2020). Improved process transparency through documentation would help the digital development teams develop RPA processes in less time.

5.1.4 Performance

The increasing global competition faced by service companies is forcing them to eliminate non-value-adding activities from their business (Rusev & Salonitis, 2017, pp. 272-277). Research has also identified a correlation between increasing costs and declining service quality (Piercy & Rich, 2008, pp. 54-76). It has been estimated that companies that can optimize their internal processes can deliver between a 10% to 30% reduction in their expenses (STR Team, 2013). The increased profit margins that result from these improvements can then be used to enhance service quality or reinvest into new markets (Research and Markets, 2021).

It should be noted that if something cannot be measured it cannot be improved (Carpi, et al., 2017). Measurement is therefore the basis of all improvement and without it, it is impossible to know how effective or efficient a process or system is. Due to the repeatability of the processes that have been established using operational excellence, it allows a business to set clear performance measures that can be tracked and analysed over time (STR Team, 2013). This can then be used as another source of information to help drive future improvement. It also allows teams to benchmark one another to find the best practices which then reduces the learning cycle and allows teams to develop at a much faster rate.

To help drive a balanced focus when deploying the 'Result' component of the operational excellence system, there are 4 key areas that teams should focus on. These are illustrated in figure 48. A more detail explanation of each component can also be found in appendix B.



Figure 48. Elements of the results section.

Measuring what matters

A key criterion of this section is to ensure that the business improvements that were made actually add value to the business. There is a high focus within the operational

excellence system to ensure that all improvement work is focused on driving improved business performance that is aligned to the strategy. This ensures that initiatives are prioritized based on the value that they deliver to the business and ensures that teams do not invest valuable resources into nonvalue adding initiatives. During the agile research it was raised in several business meetings that customers were not using some of the online functionality that the company had developed. There was even an OKR established to help drive the operational teams to guide customers to use these new channels. This approach suggests that customers were not engaged or involved in developing this functionality. It could be questioned whether this was a good use of resources as further time and effort on top of that used in the development, was required to redirect customers.

Ensuring accountability

A successful implementation of the 'Performance' section helps increase performance by utilizing high-quality data at its source to drive smarter decision-making. It also improves employee engagement as teams gain significant control over their process which then helps create a culture of continuous improvement, where employees are actively engaged in suggesting and implementing improvements on an ongoing basis. This is a change from how things have typically been done in the past where performance measurements have been historically focused on the management teams. Basically "what do they need to know to be able to plan, organize and control their teams?". This approach creates a reactive environment where the people responsible for the process are not responsible for controlling it or making the necessary decisions. Improved ownership of performance measures also helps prevent the issue that was experienced previously in the lean deployments where changes were made that were not sustainable. Essentially there were no performance measures, and no one was following up on the changes that were made. This was also identified as a problem with the sustainability of business development projects. By establishing clear and relevant measures to track performance the business could ensure they identify and resolve issues quickly. They can also ensure that they react in a structured way to solve problems and implement improvements.

Visualising the results

From the research it was identified that there was a lack of performance measures being used to track the progress being made by the business. Initially, it was planned to do an in-depth benchmarking activity to look at different teams to determine how effective their

projects were, however, there was limited standardized data that was readily available for review. Different operational teams were beginning to use OKR's however these were not always actively tracked. For example during the research it was identified the agile teams were using OKR's however it was never clearly communicated to the operational teams how successful they were in actually meeting their objectives from the previous sprint. As of February 2023 this issue has now been rectified and there are quarterly progress updates provided across the business. It has also been communicated that there is a plan to automate the reporting process to allow teams to have even clearer insights into the OKR progress without having to wait for a quarterly review meeting. By using operational excellence the next improvement opportunity for the agile team would be to have real time, visual updates available across the business.

Evaluating progress

Activity does not always equate to improved performance. This refers to another issue related to the teams using different improvement approaches that was discovered during the research. The issue particularly related to teams using lean whereby they over focused on deploying the different tools and methodologies (Piatt, 2012). Essentially, they became more focused on undertaking value stream maps rather than delivering improved business value. They also missed the importance of cultural enablers that are vitally important in order to sustain the progress that was made.

By using operational excellence, teams would be required to set clear performance measures for all improvement initiatives prior to starting. This information would then be used to measure the 'before' and 'after' state of the area being targeted for improvement. It should be recognised that the inherent nature of the different improvement methods is based on the concept of experimentation, so not all activities will translate to business improvement. However even if an improvement initiative is deemed unsuccessful once it has been completed, teams can still learn from the activity and make any needed adjustments for future initiatives. For this to occur they first need to ensure they have established clear measures of success for their improvement initiatives, visualise the progress being made, and then periodically review and discuss the results. Ensuring improvements are value-adding and transparent would help lead to greater collaboration and to increase the overall likelihood of success (Neuhol, 2020).

Another area that would need to improve is the availability of data to track progress. From the benchmarking results it was found that outside of the agile teams, it was difficult to get any results related to the improvement initiatives being run. The difficulty in

accessing data may be one of the reasons the teams were not using performance measures.

5.1.5 Cultural enablers

Although discussed as the final component of the operational excellence, the cultural enablers are the most important component of the system, as they detail the vision and values needed to successfully implement the system. Throughout the research some of the key findings regarding the different improvement approaches used related back to a lack of communication and collaboration across different teams. This is not unusual in large multinational companies due to the number of employees located across different countries. Operational excellence aims to drive a cultural transformation throughout the business and to do this, employees need to embrace the appropriate vision and values.

Vision

Generally when discussing a new system or approach, it is important to first identify the vision and purpose. However in the context of the operational excellence system discussed in this thesis it fits within the cultural enablers section. The vision for operational excellence system being used in the case study is detailed in appendix B and its purpose is to provide a simple and clear explanation of what operational excellence will deliver to the business.

Values

It is important for all employees to work within an established set of values. This ensures that work is done in an ethical way and that teams work with each other not against one another to succeed. It is proposed that the current business values of company X would form part of the operational excellence system. The values would help guide employees' actions and underpin strong operational excellence performance. Essentially teams should never disregard business values in order to achieve results.

5.2 Summary

The Toyota Production System (TPS) which was created in Japan in the 1950's was a truly innovative approach to manufacturing that led to the lean movement that is now used globally. However it is unlikely that replicating lean in a service company can create a similar step change in the way service businesses perform (Kolko, 2015). This is not

because the two industries are significantly different, in fact an analysis of 60 service systems in 2006 identified that there was a significant overlap in the process focused systems used by both manufacturing and service companies (Piercy & Rich, 2008, pp. 54-76). Roger Martin in his book, *“The Design of Business: Why Design Thinking is the Next Competitive Advantage”* also suggests that future problems cannot be solved using yesterday’s methods (Snook, 2012). Like Toyota, businesses need to identify their own opportunities, understand their own unique markets and then continually strive to improve the way they work. The TPS approach used by Toyota directly challenged the car industries established thinking and practices to create a new approach that was counterintuitive to the thinking at the time (Kolko, 2015.). A similar approach is needed for the service industry and operational excellence can help do this.

It could be argued that the majority of issues identified throughout this research are related to how the different improvement approaches are actually used in the business and in fact, if they were improved, the issues would be eliminated. This however does still not resolve the issue of different approaches being scoped to only cover certain parts of the process or business. For example in figure 49 illustrates that the service design teams are working in the ‘Design’ phase of the process, the agile teams in the ‘Realise’ phase, and the lean teams would cover the ‘Optimize’ phase.

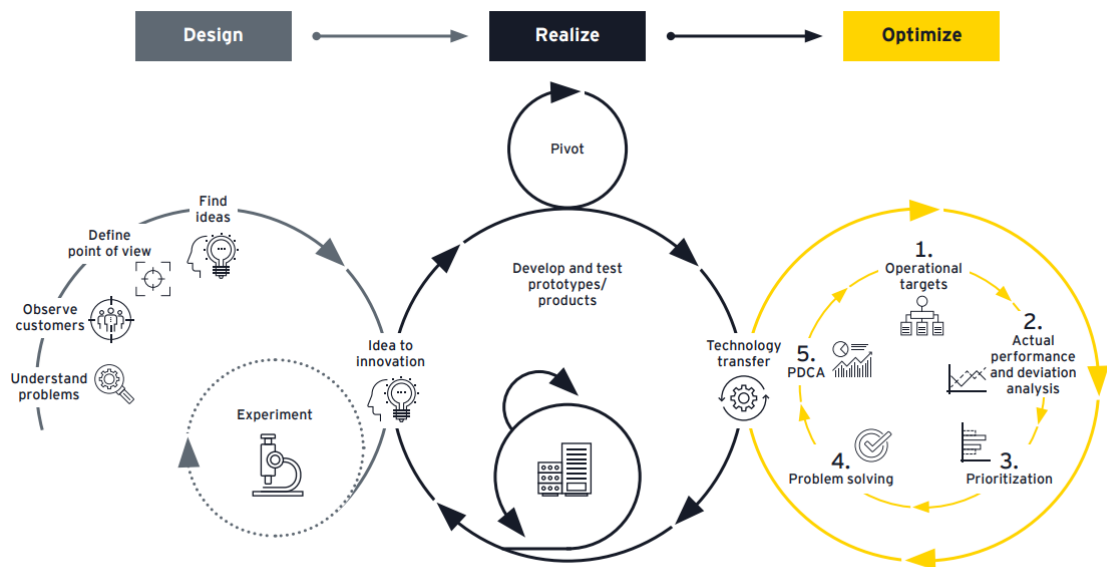


Figure 49. Focus of improvement approaches (Neuhol, 2020).

Each approach if appropriately focused and coordinated could lead to significant improvements however, they would still be independently managed and would not fully

leverage the full benefits of a combined approach. For example expanding the service design scope and providing the designers closer engagement with the operational teams would help provide greater insights into the benefits of service design. During the research the operational teams talked a lot about the importance of customer journeys but when pressed for examples and details on how they collected this information, it was discovered that most teams had not actually engaged with the customer. The information they received was feedback from different internal groups such as call centre employees or the sales teams. Service design could help improve the operational teams' knowledge and understanding of what customers actually wanted from them. It would also help spread the use of service design tools in new areas of the business. For example, the double diamond process is a simple and logical tool for developing a business strategy, however after discussing the method with the business strategy team it was identified that it is currently not employed in this area due to a lack of awareness regarding the method.

The strength of operational excellence is to share ideas and different ways of working across a business in order to broaden peoples understanding and challenge the status quo. For example the main focus of the lean improvements identified from the research was narrow and centred on improving process efficiency only. This is a common issue with lean deployments and misses the importance of other areas such as people development and performance monitoring. This was essentially the same issue across the agile teams as well. All the approaches were too focused on the specific need to which they have been applied. This limits their true capability and isolates the benefits of the different approaches.

A broader knowledge of different approaches would also help ensure that the improvement approaches do not become stagnant and fail to evolve. One of the criticisms of lean in particular is that it creates standardized processes that lack flexibility. This then leaves the business susceptible to the impact of external market changes (Afmann & Topolansky, 2014, pp.18-24). It is also too inwardly focused on resolving a specific problem (Hadid & Mansouri, 2013, pp. 750-783). Service design with its focus on co-creation and engagement with customers could help broaden the focus of the operational improvement teams when developing new ways of working (Snook, 2012). By engaging with customers, both internal and external, the lean-focused teams would gain a better understanding of their needs, provide better solutions and enhance customer satisfaction (Carlborg, et. al., 2013, pp. 291-304.).

One area that was not specifically addressed in this thesis that could be further investigated is whether or not a business leadership team would want to combine the different improvement approaches. Although it would make sense from a resource perspective and there would be benefits from the cross pollination of ideas, it would also mean that some internal groups such as IT or operations would need to give up ownership of their respective improvement approach. Some may not be willing to do this.

In respect to the validity of the results presented in this thesis the methods used were appropriate for this type of case study and involved a number of different people from distinct areas of the business such as business development, digital development, service design and the leadership group in order to ensure diversity of thought. All interviews and workshops were structured to ensure the necessary information was collected and to ensure there was no bias. The methods used such as affinity diagrams and cause and effect diagrams also helped ensure that a structured and deliberate approach was used when conducting the research.

Like all case studies the research collected in this thesis reflects the circumstances and situations related to a specific business. Not all the issues identified will relate to other large multinational service providers, however from the authors experience working in a number of different countries, a significant number of the issues identified in this case study did exist in other companies that he had worked for. Specifically those issues relating to a narrow focus that the different improvement approaches used, and the lack of collaboration. In order to validate whether operational excellence could provide a more holistic and aligned approach to business improvement, further case studies would be required to confirm whether other companies running multiple improvement approaches experienced the same issues as the one identified in this study. Ideally to fully test the operational excellence concept it would also need to be deployed in a number of service-related businesses and then evaluated for effectiveness. Ideally the types of businesses selected would be those that already have different improvement approaches in place, this way a before and after examination could be conducted.

6 CONCLUSION

Since 2013, medium to large service providers have become faced with increasingly complex challenges that more traditional problem-solving approaches have not been able to deal with. There are many different improvements approaches that businesses can use to help reduce this problem. Lean, agile, and service design have all been successfully deployed in a range of different businesses and market segments with good results. However a quick search of the internet will also reveal limitations with each approach. When well executed each improvement approach has the potential to reduce waste, unleash a team's creativity, fully understand and engage with customers to provide an innovative process, product, or service. At its worst they can be expensive to manage, create waste, generate poor quality services and be unsustainable over time.

The aim of this case study was to determine whether a more coordinated approach to business wide service improvements could be made by medium to large service providers in order to maintain their competitiveness. Establishing and then maintaining different improvement approaches such as agile, lean, and service design can result in a duplication of resources and even confusion with employees as different areas of the business use different approaches. In reality there is no silver bullet to solve all a company's problems. The most appropriate approach is the one that best suites the maturity of the business, its culture, and the type of services it provides.

Research question 1 – How can an overarching operational excellence framework be used to make better use of improvement resources and capabilities within a service business?

By combining the different improvement approaches, companies would be able to maintain their strong customer focus but also ensure that all unnecessary process steps, activities and systems are eliminated in a structured way. This would then allow them to provide a more consistent, higher quality product or service at a lower cost.

The real benefit however to using operational excellence is that it helps 'fill the gaps' between the different improvement methods used. As they are focused on specific areas such as service design or service delivery it means that there are natural boundaries that exist. Process steps, roles or responsibilities that fall between these gaps are unlikely to ever be addressed. This could be prevented if the improvement approaches were owned by one group within the business, however from the authors experience, they generally never are. IT or digital teams will own the agile framework and the operations teams

generally own the lean deployments. This exacerbates the issue as not only is their scope too narrow, but their purpose will be focused on improving issues within their own respective areas.

The challenges to using an operational excellence approach is how to create a workable model. For many businesses this may seem like a daunting task as there is limited frameworks that they can simply purchase and use. However if the company has pre-existing knowledge of existing improvement methodologies and is willing to invest time in developing an operational excellence framework, it is achievable. In fact it can be a useful development approach for the business where teams are empowered to develop and create something unique for their company.

Research question 2 - What benefits does the operational excellence framework bring to a service provider?

Operational excellence can help companies to generate the truly innovate thinking that is required in today's business to improve their products and services. In its simplistic form it is an approach that can be used to eliminate waste and improve the effectiveness and efficiency of the products and services being developed.

The most significant benefits for the business are a reduction in complexity caused by running multiple improvement approaches. Each system requires its own framework, principles, terminology and training which is expensive to maintain and can be confusing to a business employees. Simply collaborating on developing consistent training for the various methodologies would prove beneficial to not only the business but also the improvement 'practitioners' that are tasked with developing and managing the material. They would be able to spend more time delivering training and supporting teams rather than creating their own training programs.

By cross 'pollinating' improvement methodologies across different teams it could also help develop the business at a faster rate. Some of the lean concepts that are not understood by the service developers could change their approach which could then further improve the services they provide. Likewise having a better understanding of co creation in the lean focused teams could ensure that they deliver higher quality and more sustainable process improvements. It is important to remember that all the improvement approaches are an evolution of one another. For example lean has used concepts from Total Quality Management, agile has used lean concepts. None of them are perfect for all situations so teams should take the best of them and develop their own approach.

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APPENDICES

Appendix A – Common agile methods

Table 1. Agile method comparison (Rigby, Sutherland, & Takeuchi, 2016, pp. 40–48, 50).

Topic	Scrum	Kanban	Lean Development
Guiding principles	Empower creative, cross-functional teams.	Visualize workflows and limit work in process.	Eliminate waste from the system.
Favourable conditions for adoption	Creative cultures with high levels of trust and collaboration, or radical innovation teams that want to change their working environment.	Process-oriented cultures that prefer evolutionary improvements with few prescribed practices.	Process-oriented cultures that prefer evolutionary improvements with overarching values but no prescribed practices.
Prescribed work rules	Sprint planning. <ul style="list-style-type: none"> Fixed time sprints of consistent duration (1–4 weeks). Daily stand-ups of 15 minutes to review progress and obstacles. Sprint retrospectives for the team to inspect and improve itself. 	Start with what you do now. <ul style="list-style-type: none"> Visualize workflows and stages. Limit the work in process at each development stage. Measure and improve cycle times. 	None
Advantages	<ul style="list-style-type: none"> Facilitates radical breakthroughs while operating as part of the organization. Delivers the most valuable innovations early. Rapidly increases team happiness. Builds general management skills. 	<ul style="list-style-type: none"> Avoids clashes with company culture. Maximizes the contributions of the team through flexible structures and work cycles. Facilitates rapid responses to urgent issues through flexible work cycles 	<ul style="list-style-type: none"> Optimizes the system as a whole and engages the entire organization. Provides the ultimate flexibility in work practices.
Disadvantages	<ul style="list-style-type: none"> Leaders may struggle to prioritize initiatives and relinquish control. New matrix - management skills are required to coordinate dozens of multi-disciplinary teams Fixed iteration times may not be suitable for some problems. Some team members can be underutilized in certain sprints. 	<ul style="list-style-type: none"> Practitioners must figure out how to apply agile values and principles. Wide variation in practices can complicate the prioritization of initiatives. When initiatives do not succeed, it can be hard to determine whether teams selected the wrong tools or used the right tools in the wrong ways. 	<ul style="list-style-type: none"> Novices may find the lack of prescriptive methodologies frustrating. Evolutionary improvements can make radical breakthroughs less likely and major improvements less rapid. Leaders need to make the grind of continuously eliminating waste feel inspirational and fun.

Appendix B – Operational excellence

Operational Excellence aims to deliver sustainable and continuous improvement across all aspects of a business and at every level, in order to deliver services that go beyond the customer expectations. It aims to get a business to think about improvement differently and more holistically than they would normally. Essentially, it is trying to better utilize the resources a company has to drive improved results. However, it is also looking to change the culture of how improvement is driven across a company. Ideally, there should be a culture where every single person is engaged every day, in a consistent and structured way. (Operational excellence consulting, 2022)

Component	Purpose	Detail
Cultural enablers	Vision	<ul style="list-style-type: none"> Details what are we are trying to achieve by using operational excellence and what needs to change in a business. It also highlights what the future for the business looks like.
	Values	<ul style="list-style-type: none"> Company values guide actions and underpin strong operational excellence performance. Business values are never disregarded in order to achieve results.
Direction	Strategic development	<ul style="list-style-type: none"> There is a clear strategy focused on creating sustainable value. There are standardised and clear processes for developing it. It balances the operational risks vs strategic initiatives.
	Drive alignment	<ul style="list-style-type: none"> The strategy clearly links all improvement initiatives to the strategy. All initiatives are prioritised, scoped appropriately and resourced, with no duplication of work.
	Drive engagement	<ul style="list-style-type: none"> Teams are actively engaged in identifying the tactical execution of the strategy. Clear, consistent communication is provided.
	Monitor progress	<ul style="list-style-type: none"> Progress deploying the initiatives needs to be constantly monitored, communicated and discussed. Completed initiatives need to be evaluated to determine the impact on business performance.
People	Visibly committed leadership	<ul style="list-style-type: none"> Leaders need to develop and maintain a clear vision for operational excellence. Leaders actively communicate and empower their teams to adopt operational excellence and its principles. Leaders show a willingness to seek input, listen and continuously learn from their employees. Leaders provide teams the necessary training and time to work on operational excellence so that it becomes part of their everyday work.

Component	Purpose	Detail
People	Develop teams	<ul style="list-style-type: none"> Personal development is expected from all employees. The business is committed to developing its employees through learning and development. Learning and development aims to increase the flexibility, skills and capabilities of its teams to meet current and future demands.
	Empower people	<ul style="list-style-type: none"> Employees fully understand their role. Employees have the ability to impact results through their role. Employees and teams are empowered to drive improvement activities aligned to the strategy. Teams are multi-disciplinary and multi skilled.
	Drive collaboration	<ul style="list-style-type: none"> There is active and open collaboration across teams, countries, and units. There is evidence of learnings being transferred across different areas of the business with key partners and customers. Collaboration has led to improved performance.
Process	A drive for process excellence	<ul style="list-style-type: none"> The continuous improvement journey has no end. The goal is to make things easier, better, faster and cheaper. The business embraces the need to improve and does it on a daily basis. Teams and individuals are empowered to identify waste and make improvements. A structured and consistent approach is used to making improvements.
	Scientific thinking	<ul style="list-style-type: none"> Scientific thinking provides a common understanding, approach and language regarding improvement. Direct observations are used to understand the process being studied. Data is used in the pursuit of continuous improvement. The data used is accurate and applicable to the situation where it is being used.
	Total process flow	<ul style="list-style-type: none"> The business understands the end-to-end process and has process owners. Teams do not optimise one area at the expense of another. Teams utilise flow thinking to shorten lead-time from the beginning of the value stream to the end.
	We standardise, simplify then optimise	<ul style="list-style-type: none"> The business has clear, visual, documented standards for all processes. Standardization is not static and requires continuous improvement using structured tools / methods. Teams are focused on reducing variation from our processes. Teams optimise only after we have standardised.

Component	Purpose	Detail
Process	Autonomation	<ul style="list-style-type: none"> Clearly identify and optimise all process inputs and outputs. Clearly define system vs human roles. Business systems can identify abnormalities.
Performance	Measure what matters	<ul style="list-style-type: none"> Performance measures are set on business or process improvement needs. (Not historical) Measures are balanced. (i.e. quality, cost, satisfaction, etc.) The measures selected are directly tied to the strategic objectives. Set clear measures of success with defined targets. Set targets in a consultative way. (I.e. not cascaded down)
	Ensure accountability	<ul style="list-style-type: none"> Employees share one common responsibility, they are all responsible for results. Teams are clear on what they are being measured on and <u>why</u>. Teams can directly control the measures they are set. Teams are provided the autonomy to achieve their results. Results are only validated when they have been achieved according to the company values.
	Visual results	<ul style="list-style-type: none"> Key information and data are made visual (charts not tabular data), to allow teams to easily identify what is important. Visual data provides teams with quick and accurate feedback on their current performance. Teams can address issues in a controlled and structured way.
	Continually evaluate our performance	<ul style="list-style-type: none"> Use real-time performance data to guide instantaneous front-line decision-making. (Situational thinking) Analyse key trend data to identify improvement opportunities. (Systematic thinking) Teams are trained to collect, analyse, and react to data to drive performance improvements from the lowest level of the business.

Appendix C – Observation Guide

Description of the event	
Activity	What are people doing?
	<ul style="list-style-type: none"> • Prior to formally starting?
	<ul style="list-style-type: none"> • During the event?
	<ul style="list-style-type: none"> • At the completion?
Environment	How are people using the environment?
	Digital or physical?
	What is the role of the environment?
	Are there any barriers?
Interactions	Are there specific / unique interactions?
	<ul style="list-style-type: none"> • Interactions between people?
	<ul style="list-style-type: none"> • Interactions between objects?
	Are there routines?
Objects	What objects or tools are used?
	<ul style="list-style-type: none"> • Are they used or ignored?
	<ul style="list-style-type: none"> • How do they use them?
	<ul style="list-style-type: none"> • Are there any work arounds?
	Skilled or novice users?
Users	Whom are the users being observed?
	What are their roles?
	Level of seniority?
	Motivations or expectations?
	Regular or infrequent users?

(Zuzarte, 2020)

Appendix D – Sprint process

The sprint planning process used by the company can be seen in figure 50 below. The process flow has been illustrated using a swim lane diagram to show the different teams involved for each in the various process steps.

The pink magnifying glass icons designate the sessions that were part of the participant observation process.

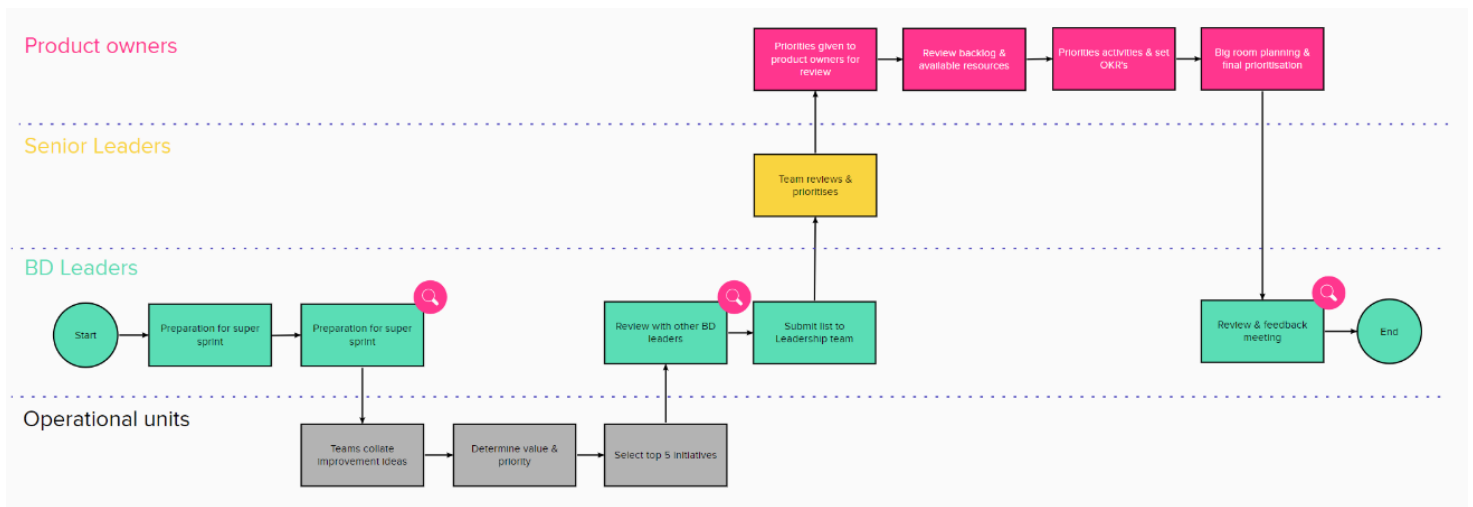


Figure 50. Sprint planning process.

Appendix E – Agile workshop 1

Topic	Time	Session Intent	Detail	Responsibility	Resources
Pre-Work					
Preparation	30 mins	Schedule the workshop	1 Identify participants	Facilitator	Stakeholder map
			2 Send out invitations	Facilitator	MS Outlook
Session					
Kick-off	15 mins	Welcome and introductions	1 Detail the agenda 2 Introductions 3 Expected outcomes of the session	Facilitator	Session 1 ppt
History	15 mins	Gain an understanding of the current agile relationship	4 What level of interaction do they have with agile? 5 How often would they work with an agile squad? 6 What type of initiatives do they work with?	Facilitator	
Performance	15 mins	Determine how well the agile process working from a business development perspective	7 Are their development needs being met? 8 What are the strengths of the process? 9 Are there concrete examples?	Facilitator	
	15 mins	Determine what the limitations are	10 What are the limitations of the approach? 11 Are there concrete examples? 12 What do they feel could be improved?	Facilitator	
Skills	15 mins	Are they provided with the appropriate skills?	13 Are the agile teams skilled and competent? 14 Do the business development teams have the necessary skills? 15 Do the operational teams have the necessary skills?	Facilitator	
Close out	15 mins	Open 'mic' Session ends	16 Is there anything else to discuss? 17 Thank the team for their input and discuss any next steps.	Facilitator	
Post Work					
Review notes	60 mins	Collate ideas Survey data	1 Collate all information generated. 2 Follow up via email or separate meetings if additional information is required.	Facilitator	Mural

Appendix F – Agile workshop 2

Topic	Time	Session Intent	Detail	Responsibility	Resources
Pre-Work					
Preparation	30 mins	Schedule the workshop	1 Identify participants	Facilitator	Stakeholder map
			2 Send out invitations	Facilitator	MS Outlook
Session					
Kick off	10 mins	Welcome and introductions	1 Detail the agenda 2 Expected outcomes of the session	Facilitator	Session 1 ppt
Background	20 mins	Determine how well the agile process is working for their unit	3 Are their development needs being met? 4 How successful are your initiatives at being prioritized? 5 What type of systems do you use? 6 Do you have any teams' members in squads? If yes – how much time do they spend in a squad? 7 Do the squads understand the operational needs?	Facilitator	Notes
Performance	15 mins	Determine what the strengths are	8 What are the strengths of the agile approach? 9 Are there concrete examples? 10 Was the initiative completed as expected? (i.e. did it meet your needs?)	Facilitator	Notes
	15 mins	Determine what the limitations are	11 What are the limitations of the approach? 12 Are there concrete examples? 13 What do they feel could be improved?	Facilitator	Notes
Feedback	15 mins	Determine how well squads communicate	14 Do you know what the agile teams are working on? 15 Do you get updates from the squads? 16 Do you know how successful they are?	Facilitator	Notes
Close out	15 mins	Open 'mic' Session ends	17 Is there anything else to discuss? 18 Thank the team for their input and discuss any next steps.	Facilitator	Mural
Post Work					
Review notes	60 mins	Collate ideas Survey data	1 Collate all information generated. 2 Follow up via email or teams if additional information is required.	Facilitator	Mural

Appendix G – Lean interview guide (1 and 2)

Focus area	Time (mins)	Question
Introduction	5	Welcome and quick catch-up.
		Discuss the agenda and clarify any questions on the session.
Purpose	10	Why did they decide to use lean?
		Was there a specific problem to solve?
		Had they tried anything similar in the past?
When	5	When did the deployment take place?
		Was this a quiet time of year? (Volume-wise)
		Were there any other major changes occurring at the same time?
Deployment	5	Where did they deploy it?
		Was it a specific area or team?
		Why was the deployment focused on that team or area?
		Was it internally or externally led?
Who was involved	5	Was there a sponsor?
		How many people were involved?
		Did the teams involved have any previous experience?
		Was the employee's time allocated to this initiative 100%?
Change Management	10	How did they deploy it?
		Was formal training provided?
		Was there a communication plan for the deployment?
		Was it conducted internally or externally?
		How long did the deployment last?
Outcomes	10	Were there any benefits to using lean?
		Were the benefits measurable?
		Did you see an increase or decrease in employee motivation?
		What were the limitations of using lean?
		Would you try and deploy it again?
		What would you do differently?
Close out	10	Summarise the discussion
		Thank the participant and end the session.

Appendix H – Lean interview guide 3

Focus area	Time (mins)	Question
Introduction	5	Welcome and introductions.
		Discuss the agenda and clarify any questions on the session.
Purpose	10	Why did they want to use lean?
		What is the specific problem to solve?
		What is the issue with the existing practices?
		What is the vision?
When	5	When do they want to start?
		Are there any other major changes occurring at the same time?
Deployment	5	Where do they specifically want to deploy it?
		Down to what level of the business?
		Is the deployment internally or externally led?
Who will be involved	5	Who is the sponsor?
		How many people will be involved?
		Will the employee's time be allocated to this initiative 100%?
Change Management	10	How will they deploy it?
		Will formal training be provided?
		Who will manage the communication plan for the deployment?
Outcomes	10	What are the expected outcomes?
		How will they measure success?
Close out	10	Summarise the discussion
		Thank the participant and end the session.

Appendix I – Centre of excellence interview

Focus area	Time (mins)	Question
Introduction	5	Welcome and introductions.
		Discuss the agenda and clarify any questions on the session.
Purpose	10	What is the centre of excellence?
		Why is it needed?
		What is it? (Teams site, SharePoint site?)
People	15	Who manages it?
		Is there a steering committee?
		Is it a full-time job?
Governance	15	How do you ensure the quality of the content?
		How does it evolve and improve?
		Is the development internal or external?
		How do you notify people of the changes?
		How do you ensure they follow the changes or updates?
		How often are changes made?
Training	10	What type of training is provided?
		How often does it occur?
		Is it internal or external?
Close out	5	Summarise the discussion
		Thank the participant and end the session.

Additional notes:

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Appendix J – Lesson learnt workshops

Topic	Time		Detail	Responsibility	Resources
Pre-Work					
Workshop Preparation	60 mins	1	Identify participants	Facilitator	Stakeholder map
		2	Develop the lessons learnt template	Facilitator	Mural template
		3	Send out invitations	Facilitator	MS Outlook
	30 mins	4	Participants to review questions and bring ideas to the session	Participants	
Session					
Welcome and introductions	10 mins	1	Detail the agenda	Facilitator	Lessons learnt ppt
		2	Introductions		
		3	Expected outcomes of the session		
Project review	5 mins	4	Review the project purpose – was it clear what they were working on and why? - Cover positive and negative comments	Facilitator	Mural template
	5 mins	5	Review the project objectives – Did the team know what they needed to achieve and were they realistic? - Cover positive and negative comments	Facilitator	
	5 mins	6	Review the project scope – Was the scope manageable? - Cover positive and negative comments	Facilitator	
	5 mins	7	Review the project timelines – Was the time provided for the project realistic? Was it completed on time? - Cover positive and negative comments	Facilitator	
	5 mins	8	Review the project communication – Was the communication clear and helpful? Did it meet team member or stakeholders needs? - Cover positive and negative comments	Facilitator	
	5 mins	9	Review the project team skills – Did we have the right skills on the team? Were we missing a skillset? - Cover positive and negative comments	Facilitator	
	5 mins	10	Review the project's success – Were the objectives met? Was the sponsor happy? - Cover positive and negative comments	Facilitator	
Close out	10 mins	12	Other comments or feedback?	Facilitator	
		13	Thank the team for their input and discuss any next steps.	Facilitator	
Post Work					
Review notes	60 mins	1	Collate all information generated.	Facilitator	Mural
		2	Follow up via email or separate meetings is additional information is required.		

Appendix K – Cause and effect workshop

Time	Topic	Detail	Who	Resources
Pre-Work				
60 mins	Preparation	1 Schedule workshop and send pre-work	Facilitator	
60 mins		2 Review the cause-and-effect diagram methodology so that the process is clear	Participants	
Session				
5 mins	Cause and effect diagram	1 Confirm team have reviewed the cause-and-effect methodology	Facilitator	Introduction ppt
10 mins	Ice breaker	1 Conduct the ice breaker activity with the team 2 Confirm workshop expectations	Facilitator	Introduction ppt
60 mins	Cause and effect activity	1 Work through the pre-prepared template 2 Review the problem statement with the team 3 Identify potential causes for each of the 6 categories 4 List causes and then begin to prioritize	Facilitator	CE template
15 mins	Closeout	1 Confirm the team is aligned with the outcome 2 Discuss the use of the information and the next steps	Facilitator	
Post-Work				
30 mins	Collate ideas	1 Collate all information generated.	Facilitator	
30 mins	Survey data	2 Follow up via email or teams if additional information is required.	Facilitator	