Quality Assurance Process Development and Improvement

A case study Evaluating and Proposing Improvements in a Complaint Handling Process within Product Quality Assurance

Master's Thesis in Quality and Operations Management

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CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2024
www.chalmers.s

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SUMMARY

As established by existing research, effective complaint handling is crucial for maintaining high product quality and customer satisfaction in product quality assurance. This thesis report adds to this research topic by investigating how to improve a case specific complaint handling process by connecting observations found with principles and concepts in knowledge sharing, information handling, change management, and organisational structure and design. The goal of this thesis has been to identify the challenges in the complaint handling process studied and to make use of the above-mentioned principles to provide recommendations and improvements for the same. This has been achieved by performing a single case study wherein both qualitative and quantitative data was collected in connection with a participation approach. As a result of utilising a combination of qualitative and quantitative research, cross checking between findings was enabled and researcher bias could be mitigated.

Various challenges facing the complaint handling process studied could be found, including inconsistency in response times, lack of standardised procedures, and inadequate communication channels. Understanding these operational challenges was found crucial for identifying opportunities for improvement. Furthermore, it was found that designing a structure that aligns with the complaint handling goals and customer centric values of the company is essential for enhancing responsiveness and problem-solving capabilities. Moreover, knowledge sharing and continuous improvement were, through the case process studied, shown to be integral to optimising complaint handling processes and embracing a culture of continuous improvement. The case study performed, coupled with established research, further indicated that such quality and customer-oriented cultures within complaint handling processes further enable organisations to evolve and adapt to changing customer needs and market trends.

Furthermore, findings successfully allowed for recommendations to be formulated on how complaint handling processes experiencing similar process environments, to that of the one studied, can promote improvement initiatives and drive performance improvements. It was additionally found that by leveraging insights from the above-mentioned principles, it is possible for organisations to enhance complaint resolution efficiency, elevate customer satisfaction, and drive overall operational success. Lastly, it has been established in this work that since this thesis has been limited to a single case and its operations, generalisation is limited. Thus, some conclusions that have been made in this work are acknowledged limited in their usefulness outside of complaint handling. However, as stated, findings are believed to be of use in those specific cases experiencing similar characteristics to the one studied. As a next step, avenues for future research have been identified, and the findings presented in this work are believed to be promising for the purpose of presenting future research with an additional source to stand on in areas of continuous improvement and complaint handling.

Keywords: Complaint Handling, Complaint Management, Quality Assurance, Knowledge Management, Change Management, Organisational Structure and Design, Continuous Improvement

Acknowledgement

Throughout the writing of this report and for the entire duration of our studies, let alone this thesis project, we the authors have experienced great generosity and support, and the individuals and organisations around us have greatly motivated us. The outcome of our studies and this thesis would not have been the same without it.

First and foremost, we would like to express our gratitude to our supervisor Petra Bosch-Sijtsema who's constant and selfless support, guidance and flexibility has aided this work massively. She has inspired us throughout the entire project to make it our own, and her insightful contributions to our discussions have led our interest in the field of operations, knowledge and change management to deepen further.

We would also like to extend our gratitude to our onsite company supervisor as well as the employees and company behind the alias Company X, for providing their support with the study's scope and data collection within the process. We felt very accommodated during our stay with them throughout the entire case study, and they were all a pleasure to work and interact with.

Additionally, further thanks go out to those family and friends, professors and fellow students, that have enriched our time throughout our studies and along this thesis project. Their never-ending support and the enrichment of our lives around our work and studies is truly theirs to thank for.

At this point, we wish to state our thanks to our opposition who peer-reviewed our thesis. Your feedback and comments have brought much value to our work, and we cherish the improvements that it has brought, and how you have helped improve our methods and conclusions.

Neeraj Karande & Carl Troiza
Gothenburg, May 2024

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List of Abbreviations

Process Owner - PO

Complaint Coordinator - CC

Complaint Management - CM

Complaint Handling - CH

Complaint and Failure Management - CFM

Product Quality Assurance - PQA

Supplier Quality Assurance - SQA

American Distribution Centre - ADC

International Distribution Centre - IDC

Knowledge Management - KM

Key Performance Indicator - KPI

Service Level Agreement - SLA

Define-Measure-Analyse-Improve-Control - DMAIC

Root Cause Analysis - RCA

1. Introduction

In this section, the background to complaint management (CM) will be presented along with the formulation and definition of the problem covered by this thesis. Additionally, this section will cover the research aim and questions that are covered, as well as the delimitations that were established to focus the scope of this work.

1.1. Background and Problem

CM is a form of systematically handling objections or dissatisfactions expressed by the consumers or clients, utilising contracts or arrangements established by the company (Pramono and Suryanto, 2023). Customer complaints are seen as a potential benefit to the company in the form of quality improvement and seen as a way of receiving feedback from customers and converting that feedback into actionable improvements plans. Besides that, they are also a way of measuring performance and providing adequate resource allocation for areas needing improvements (Linder, Schmitt and Schmitt, 2014). According to Jeanpert et al. (2021) the role of complaint handling (CH) involves a series of events in which a process generates a wide number of interactions through which a decision and a relative outcome occurs. Furthermore, Razali and Jaafar (2012) state that complaints are a valuable source of information as a method to identify effectiveness and efficiency through services, and that reliable information systems would benefit the organisation in controlling quality of service, alongside benefiting involved customers.

Lam and Dale (1999) point out that the level by which complaints are dealt with is crucial, and that CH systems are an efficient and effective way of recovering customer loyalty. The purpose of such CH systems is not only to recover the situation, but also to enhance the level of customer satisfaction. Complaint and failure management (CFM) is another aspect used to deal with product failures and nonconformities about a complaint or external data collected. CFM identifies external failures, creates clarification of root causes and implements effective measures to eliminate root causes (Ruessmann et al., 2020). Additionally, maintaining the producer-consumer relationship hinges on crucial factors like the nature of service, the management of handling customer-disrupting issues, and the effective handling of customer service (Pramono and Suryanto, 2023).

Filip (2013) states that the CM system should have some clearly defined objectives that cover both the internal and the external service recovery strategies. The internal objectives should be informing employees about the CM procedures, policies and rules of handling complaints, training and motivation, etc. While the external objectives must include regaining customer satisfaction, maintaining strong business relationships, collecting customer complaints to improve the service overall.

In this study, CH, and its correlation to operations management, change management, and knowledge management (KM) as well as organisational design will be covered to elevate important theories and methods that when implemented in practice enhance a company's Product Quality Assurance (PQA) efforts. The purpose of performing this case study will be to establish a perspective, based on practical realities, on how CH processes can be managed and improved in a way that allows for an improved stakeholder experience, by investigating the way a company shares knowledge, distributes responsibilities, and structures their work methods.

Furthermore, it has been identified that empirical evidence on operations management related concepts being applied to CH processes, covering recent practical cases, are limited in availability. This is seen to especially be the case regarding that of organisational structure and design. Thus, a research gap is identified that as it stands is limiting organisations' capabilities to continue to adapt their CH processes to internal and external changes and demands.

1.2. Research Aims and Questions

This thesis project will aim to dive deeper into the system of CH, and how a CH process can be improved as a focus within operations management and with the support of empirical results. Aiming to do so in a way which allows for future implementations and improvement projects within CH to be better informed. To achieve this aim, the following research questions have been established:

1. What are challenges involved in CH processes from an operations management perspective?
2. How can organisational structure and design affect CH processes?
3. How can learning and continuous improvement be promoted in a CH process?

1.3. Delimitations

The delimitations listed below were not only established because of time constraints and the set deadline of project completion within five to six months, but also established to focus research and mitigate implications during formulation of conclusions. These delimitations further serve to simplify project planning and to make the achievement of created aims and objectives more feasible.

a) Research and investigations will be conducted with a focus on the processes in place at Company X and their Swedish and Polish CH offices. Thus, research and analysis elements will be based upon a single case study in the machinery manufacturing industry, and the thesis will not draw upon other companies.

b) Work will be based on processes and company structure surrounding CH and the implications these processes have on quality aspects. Therefore, other aspects than these will be neglected during this project in favour of enhancing the quality of findings in the focused area.

c) Qualitative investigations will be limited to collecting information and observations surrounding wishes and concerns surrounding the process, and thus mainly record those interactions that show a desire for change to occur or stop. Otherwise, the qualitative investigation will also be used to confirm quantitative results and to help establish an accurate image of the current state of the process.

d) Qualitative data will only originate from internal sources to the CH process studied in the single case study and will not account for potential information and opinions existing in surrounding departments or actors.

e) Research and theoretical comparisons to the findings of the case study will have the main focus of CM and handling as a field within operations management and be limited to lending connecting theories and concepts from KM and change management, and organisational design. Thus, other theoretical fields or topics within these specified fields not connected to CM or handling will therefore not be pursued and investigated as they are beyond this scope.

2. Theoretical Framework

In this section, CH as a main focus within operations management will be presented, alongside knowledge and learning, organisational structure and design, as well as change and improvement. All these theories and concepts, as well as their respective effects on the outcome of the quality delivered. This is in line with Slack's (2018) description on what operations management can be defined as respective impacts on operational activities and CH. In other words, the management of process activities and organisational structures to support the delivery of higher quality outputs while utilising less or equal amounts of resources.

2.1. Complaint Handling

The act of CM as a means to provide customer service and identify areas for improvement in organisations can be related to the 8 dimensions proposed by Garvin (1984). The 8 dimensions relate to CH as the input gathered from external and internal sources which will inform future quality and operations improvement efforts, and thus improve performance and reliability. However, Garvin's model (1984) also notes that increased interaction with customers and suppliers will further increase the potential of a product or service in the other dimensions too, thanks to increased communication and shared views on what defines superior quality in the situation faced. According to Johnston et al. (2001), a good CM process involves having a strong core of operations like design, planning, execution, and control of processes including clear procedures, speedy response, making sure that the staff understand the complaint process, employees are empowered to deal with the situation etc. Greater engagement, stronger and more plentiful communication channels, which are all achieved by the leadership styles raised from Northouse (2022), further support the development of a quality-oriented culture which in turn further contributes to the company's ability to anticipate and adapt to change Alavi et al. (2014). Moreover, it can also be noted that, by having a dedicated system to approach and resolve complaints, the perceived quality of the product or service, as well as its durability in some cases, will be improved (Brady and Cronin, 2001). As Brady and Cronin (2001) explains through their evaluation of different service quality models, dimensions of perceived quality can be found in the outcome, interaction, and environmental quality.

According to Bakar et al. (2008), a responsive complaint system is key to ensuring customer satisfaction while managing complaints and that this system is a means of useful information and feedback for continuous improvement. Furthermore, Behrens et al. (2007), Cambra-Fierro, Melero and Sese (2015) mention timeliness as one of the benefits of CH, referring to the speed by which an organisation responds to or handles a complaint. The authors continue with that fast responses often lead to economic benefits like increases in efficiency of the CH process and saving additional effort and resources on the customer's side. Simultaneously, the authors state that fast responses lead to social benefits like reputation of the company, and the customer feels taken care of. To complement the above arguments further, Linder, Schmitt and Schmitt (2014) explain why a good organisational structure and process control is needed for root cause analyses and deployment of countermeasures in CM. They state that to successfully handle the CM process, roles and responsibilities need to be defined clearly and relevant key performance indicators (KPI) like lead time of complaint acceptance and complaint resolution are vital in maintaining efficiency in the system.

Taking some additional views into consideration, Linder, Schmitt and Schmitt (2014) propose a three-dimensional target system which includes customer relation, finance orientation, and quality. The customer relation dimension focuses on response times and immediate interaction which can restore customer's satisfaction. Linder, Schmitt and Schmitt (2014) stress further on the aspect that the more dissatisfied customers complain,

the more opportunities the company gets to satisfy the customer and gather more information on product failures. The finance dimension focuses on internal and external failure costs, where internal costs include scrap and rework detected within the company, and external costs include costs for claims, product recalls, and ex-gratia payments. Lastly, the quality dimension focuses on the feedback information which is viewed as an important aspect for future product development projects. the model proposed by Ellouze (2010) which highlights failure identification, classification, roles, corrective measures, preventive measures, implementation, controlling and motivation. According to Ruessmann et al. (2020), adding a whole managerial and support level perspective to the CFM process is beneficial in providing a holistic view of the process. It involves data collection and organisation, failure valuation and elimination, and knowledge transfer. The first step of the model involves collecting quality relevant data which should be stored and consolidated, and that by introducing a failure coding system, could lead to a failure language for company-wide segregation of failures. The second step is valuation which involves pre-analysis of urgency and resource allocation. Failure elimination includes failure analysis, problem description and measures for failure elimination which requires organisational structures and IT-system to be in place. The knowledge perspective as presented by Ruessmann et al. (2020) is highlighted in the later knowledge and information section.

Lastly, Stauß and Seidel (2019) state that the quality of the CM process will have an influence on the company's success and do this by proposing that out of Porter's competitive strategic positions, a robust CM process will add insights necessary for impactful cost leadership strategy and differentiation strategy. Consequently, by complementing other information gathering activities with effective CH, the competitive ability of the company will increase by having more informed strategic decision making.

2.2. Change and Improvement Management

When connecting CM with improvement processes, continuous training, empowerment, and extra-role behaviours, these concepts align well with the internal environment faced within CH and help improve employee relationships (S.Phabmixay et al., 2018). On similar lines, Homburg and Fürst (2005) explain how the aspect of supportiveness of internal environment to CH is defined by how organisational culture favours effective CH. Homburg and Fürst (2005) move on to highlight how personnel-related activities like professional training and leadership nurtures employees' perception towards customer orientation. This customer orientation then involves having a positive approach towards complaints and constructive approach towards failures.

Furthermore, empowered employees create stronger organisational flexibility in terms of decision making which leads to enhanced prevention and recovery strategies, but also provides the employees themselves with a stronger sense of autonomy, responsibility, and improves well-being (S.Phabmixay et al., 2018; Freeman, Kleiner and Ostroff, 2000). This is something which in turn resembles the points presented by the integration aspect as mentioned by Lawrence (1968) and in this way the organisation will, according to the author, promote shared values and involvement from its employees by basing decisions on collaboration and discussions. Moreover, as a consequence of increased interactions and creative freedom, employees will be enabled to work proactively and with higher motivations (Devadasan, Goshteeswaran and Gokulachandran, 2005).

S.Phabmixay et al., (2018) support concepts on empowering employees by presenting training aspects of employees to acquire new skills. The authors state this as a means to effectively deal with conflictive and stressful situations, as those found within CH, and how to find optimal and unique solutions to complaints. Hussain et al. (2016) goes on to present the same argument mentioned above about how the model of organisational change affects change implementation. This model comprises a few key factors like employee

involvement and knowledge sharing in the change process. Hussain et al. (2016) elaborates further, the employee involvement approach describes the act of taking the employees inputs into consideration in the decision-making process. Which in turn could affect organisational performance and employee well-being (Hussain et al., 2016). Hussain et al. (2016) further mentions that employee involvement is the most effective strategy in planning and implementing the change and overcoming resistance. In doing so, there will be multiplicity in idea generation and innovation leading to employee motivation and commitment in implementing the change.

The focus of empowered employees to promote and make change more feasible, as presented above, is further discussed by Northouse (2022). The author states that different forms of leadership structures provide good alternatives to amplify the effectiveness of certain operational activities and processes. The author further elaborates on the topic and points out *Shared Leadership* and *Transformational Leadership*, as well as *Transactional Leadership* as structures of interest for operational activities that share characteristics with CH. Characteristics such as high complexity and variety of challenges face, dynamic work environments, as well as geographically split processes. While the author mainly uses transactional leadership as an example of a limited structure, the author elevates transformational and shared leadership by making comparisons. The main one being that transactional leadership only can achieve what it specifically sets out to do and bases itself on a form of trade between manager and worker. Meanwhile, shared, and transformational leadership creates the potential to go above and beyond specified targets and improves long term capabilities by putting emphasis on growth and mutual benefits. On similar lines, Morgan and Zeffane (2003) go on to point out that a leader's transparency reaffirms and increases the trust between the employees during discussions and meetings allowing for their opinions to be heard and gaining more control.

2.3. Knowledge and Information

Mjahed and Triki (2009) state that KM offers a competitive advantage within a high-pressure competing market and increasing customer expectations especially relating to product/service delivery quality. Additionally, they stress on the aspect that data and information management should be implemented through computer technologies and that e-knowledge management will play a major part in CM. In correspondence to this, Bosch and Enríquez, (2005) mention that if complaints are transformed into knowledge about customers, they can be a source of capital for enterprises. Moreover, Mjahed an Triki (2009) mentions that the strategy of service recovery should be to capitalise on CM by making use of the learning opportunities from failures and taking proactive action.

On the topic of learning and working proactively, according to Behrens et al. (2007), information flow management is also a key concern in CH and management. They argue that standardisation of information flow in CM helps reduce incomplete and unclear fault descriptions, and reduce time spent on manual work in processing of the complaints. Moreover, they argue that information received from the complaint, the way it is solved, and the steps taken to solve it, needs to be documented and saved for future evaluations. Lawrence (1968) further supports this line of thinking as he presents that knowledge transfer and information diffusion are vital capabilities of a process, necessary to be in place for differentiation of operational activities to take place, and to ground decision making in the organisation.

Hellebrandt, Heine and Schmitt (2018) present how companies can implement a conceptual process model for long-term knowledge transfer on some of the KM activities like: identification, acquisition, development, distribution, and protection of knowledge. This model is further based on the foundation given by Linder, Schmitt and Schmitt (2014) on long-term complaint knowledge transfer: data organisation, failure identification, and

failure correction. Figure 1 gives a clearer understanding of this model. Hellebrandt, Heine and Schmitt (2018) continue to describe that the aim of this model is to find out all the relevant complaint information to generate a comprehensive information basis that can be relied on. This ability to store and transfer knowledge, further supports sustainable operational practices put forth by Alavi et al. (2014) states that the most appropriate method for survival and long-term success is increasing the learning capability and organisational knowledge of the workforce.

Mjahed and Triki (2009), put forward various aspects, particularly on competence. Where competence focuses on understanding customer knowledge whether it is implicit or explicit to undergo their tasks in different processes. They further go on to highlight some key high-quality CH attributes like keeping the complainant informed, empowering the employees to handle the situation, having follow-up procedures in place with the customers after complaint resolution, and identifying measures to reduce causes rather than reduce volume of complaints.

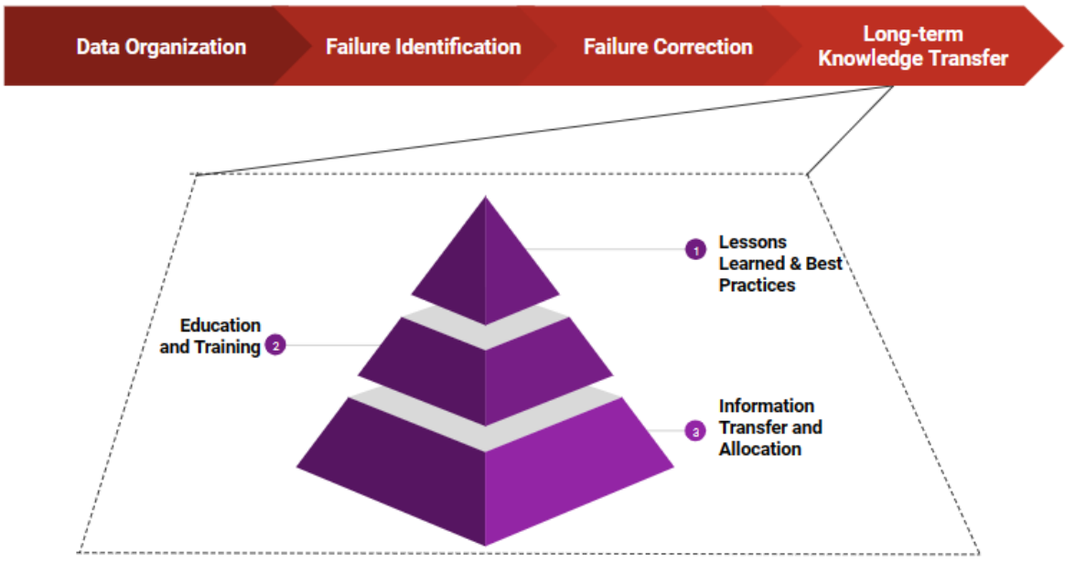

Figure 1: Conceptual process model for long-term complaint knowledge transfer to product development

Adapted from Hellebrandt, Heine and Schmitt (2018)

According to Ruessmann et al. 's (2020) model of CFM, implementing failure elimination steps helps in initiating continuous improvement measures in the near or immediate future. The authors further describe that doing so creates knowledge that can help put up a basis for future failure elimination strategies. To support this line of thinking, Linder, Schmitt and Schmitt (2014) also emphasise the importance of long-term knowledge transfers by highlighting the transferring of knowledge from failure corrections to parallel product lines. Furthermore, according to Linder, Schmitt and Schmitt (2014), the transfer of this knowledge or solutions helps in effective product quality control, and the authors press the matter that it is absolutely necessary to link the CM process to a centralised KM system. Lastly, Bosch and Enríquez, (2005) state that excellent service is the key for a better future, for both customers and suppliers, and that it can only be achieved by profound knowledge of evolving customer needs. They go on to state that this knowledge will be generated through a functional customer CM system irrespective of company's size, structure, or products.

Another aspect of knowledge is brought up by S.Phabmixay et al., (2018) who highlight that a company needs to be more customer and innovation oriented. They continue by saying that it is a knowledge structure that guides all organisational strategies to promote innovative thinking to compete in dynamic markets. They go on to state that the starting

point for designing a CM system is in the company culture, and as a result the knowledge structure must be connected and aligned throughout the entire company and its processes.

Zhang (2010) makes a distinction however, as the author highlights the key difference between knowledge and information, stating that knowledge is context dependent. The author continues with that knowledge is not merely acquired, and states that it's co-created through social interactions, shaping the very understanding of reality. Zhang (2010) further explains that having knowledge can be exercised for problem-solving and brings up the scenario where two employees with identical information may not demonstrate equal proficiency in utilising it to address complaints effectively.

2.4. Organisational Structure and Design

McMillan, (2002) states that organisational structure and design is closely interlinked with human resource management, and human dimension plays a key role in an organisation. McMillan, (2002) further goes on to define an organisation's structure as an architecture that is both visible and invisible which connects all aspects of organisation's activities for it to function as a complete dynamic body. Organisational structure and design have a wide impact on performance through various aspects of operational activities and structures (Homburg and Fürst, 2005; Lawrence, 1968; Godwyn and Gittell, 2011). Ashton (2004) found through his research that the way organisations structure and design themselves impact individuals differently depending on what roles and positions within the operational activities and organisational hierarchies they have. Ashton (2004) found this to be especially the case in the topic of learning and communication and went on in his work to further promote companies to consider the consequences of their adopted structures and designs.

Role Theory as presented by Homburg and Fürst (2005) describes how employees with customer contact must have a strong clarity on how managers and customers expect them to perform their jobs and that a lack of role clarity can lead to a negative impact on job performance. Moreover, role clarity is described by the authors to be the highest when there is a high focus on both standard operating procedures and a supportive cultural environment, respectively. Lawrence (1968) on the other hand presents the effects of process and company structures in a way where antagonistic relationships between operational *Differentiation* and *Integration* are presented and connected to performance. More specifically, the author states that higher differentiation leads to many benefits related to specialisation, but that the ability to communicate and collaborate cross-functionally is hampered, which in turn would be one of the benefits with higher levels of integration. Furthermore, it is stated that with higher differentiation the level of conflict will rise as a consequence of not understanding one another fully, and thus there will be a need for competent conflict resolution, which is a strength of high integration. Both these authors present valuable insights into the effects of establishing operational activities in a certain way, as well as to which extent those within them should be connected to one another through collaboration and communication. All of which correlates to the concepts presented within organisational structure and design as originally presented by Burns and Stalker (1994) and Godwyn and Gittell (2011).

Burns and Stalker (1994) proposed through their work on organisational structure and design a view where effective organisational structures could be seen inside a spectrum of mechanistic or organic designs. This concept assumes that where an organisation places itself in this spectrum relies on the situation at hand and the organisation's ability to read their environment. Mechanistic designs are characterised by Burns and Stalker (1994) and Godwyn and Gittell (2011) as broken-down functional tasks, hierarchical interactions, precise definitions of rights and obligations, as well as technical methods attached to functional roles, among other forms of clear structure and clear demands. The authors

continue to describe that employing more mechanistic designs can be greatly beneficial and appropriate in stable conditions. Organic designs on the other hand are characterised by Burns and Stalker (1994) and Godwyn and Gittell (2011) as showing a contributive mindset, having realistically established tasks, continual re-definitions of tasks through interaction, a flexible outlook on obligations and methods, as well as lateral communications and a lack of prestige, among other similar characteristics. The authors present that suitable conditions for this design exist are those that show recurring change, unforeseen requirements for actions. Whereas the authors highlight that especially those tasks that cannot be broken down or automatically distributed from functional roles as they are defined within the hierarchical structures present, are suitable for organic work methods.

The practicality of organisational design and its potential for being applied to operational rather than organisational structures have been investigated by Kessler, Nixon and Nord (2016). The authors successfully connected the theory to operational practices and efforts, and through their work argue that while relevant, the theory in itself is incomplete without being grounded in operationalisation, and that there is still more to learn from the theory in operational aspects. Their work has thus contributed to the image of a concept that has high research potential when applied to operational practices, while still providing areas for future implementation. This potential has been partly explored by S.Phabmixay et al., (2018) who in their research effort apply the concept to CM, finding connections and usefulness to structure and design processes of this nature. In addition to this, Behrens et al. (2007) connect the concept further to CH as they share their findings indicating that a mechanistic approach enables more efficient resolution of complaints, whereas an organic approach allows for a more flexible CM system.

3. Methodology

In this section the methodology carried out throughout this research effort is presented. The section will present various sub-sections presenting different elements and considerations which the methodology contains. The research approach and design, research structure, methods of data collection and analysis, ethical considerations which were taken into account, aspects of reliability, validity, and researcher bias, are all covered here.

3.1. Research Approach

For this research project, observations contributed to the making of predictions and assumptions on how to combine theory with reality. An abductive research approach as described by Douven (2011) was adopted and it was aimed that working in an abductive manner would create the potential to validate and add to existing research material. An abductive approach entails combining elements of deduction and induction to come to reasonable justifications for observations, or proof of hypotheses, made (Douven, 2011). Practically for this research effort, this means that empirical results and observations gathered throughout the case study are connected to theories in relevant topics to advise further evaluations of the case study. This follows that of Awuzie and McDermott (2017) definition of the abductive approach, which is further promoted by the authors as a research approach especially well-suited for case studies, as experienced by this research effort.

To achieve this, a combination of qualitative and quantitative research methods was relied upon to create a strong and general overview of Company X's situation, as to create a reliable basis upon which conclusions could be made. Qualitative research methods appear in the shape of established semi-structured interviews and discussions held with employees at Company X, as well as own observations and evaluations gathered from a participation approach.

Quantitative research methods drew from provided data originating from the existing CH system present at the case company, and the data sample spanned a period of six months. Quantitative research covered historical data collected in the form of relevant KPIs and statistics. This data was then evaluated qualitatively, but also placed into data evaluation software such as JMP to provide quantitative results fit for further qualitative evaluations. Before the conduct of the case study, methods and approaches were evaluated on their fit to the case study and their implementation and suitability were based on qualitative knowledge throughout the research project.

3.2. Research Design

For the purpose of this thesis, it was identified that a case study is relevant to contextualise theoretical concepts with processes and systems used for the purpose of CH, as well as to provide an opportunity for connections between these and existing CM processes to be made. Change and improvement management, knowledge, and information transfer, as well as organisational structure and design, are all concepts which will be explored.

By adopting a single case study as research design, findings provided practical insights into a realistically implemented CH system and process, making this achievable in a research project where time and resources are limited. Gustafsson (2017) states that single case studies are not expensive and time consuming, and that they generate high-quality theory. Furthermore, the researcher can have a deeper understanding of the topic under exploration (Gustafsson, 2017). A potential downside to single case studies, as mentioned by the same author, is that there is no guarantee that insights will be generated when conducting a single case study. This thesis project based the research methods used, on achieving such insights, and connections were further enabled by gaining audience and experiences from professionals in the field. This had a positive impact on research findings, something that

further validated the choice of conducting this thesis in a case study setting. Furthermore, it was identified that the research effort would benefit from covering a case where effective communication with suppliers and clients was present. As a result, the industry of machinery manufacturing was selected for investigation.

The studied case was a company that utilised its CH processes in order to satisfy their stakeholders, as well as external clients, with the aim to achieve quick response and resolution times, combined with effective corrective actions. The case studied is an international machinery manufacturing company that values customer relationships and satisfaction as important pillars on which the brand stands. Thus, the quality of the delivered products, as well as the perceived quality of business made with the company is also of high importance. Additionally, since the company was undertaking development efforts to their CH process during the case study, they have allowed for the study to make further connections. For the purpose of this report, they will be referred to as Company X.

3.3. Research Structure

The research effort was structured and planned with inspiration from the Define-Measure-Analyse-Improve-Control (DMAIC) structure (de Mast and Lokkerbol, 2012). While these phases guided focus and application of literature collection and theory utilisation, work mainly revolved around Defining, Measuring, and Analysing the process in the case. As DMAIC provides a clear framework for how to understand and achieve sustainable and well-founded solutions to a practical problem (de Mast and Lokkerbol, 2012), it was seen as a good fit for a single case study research project. This was seen to be especially the case as the aim of this research project spans not only identifying issues and opportunities found from the case study, but also aimed to portray a series of recommendations for sustainable CH. Furthermore, it is worth noting that previous experience with going through the DMAIC process was believed to enhance the efficiency of the research activities and ensure that work was done in a structured approach.

3.4. Data Collection and Analysis

Historical data and statistics acted as quantitative data for this research project. The historical data collected appeared in the shape of: Number of complaints handled and by who, and what department, occurrences of service level agreement (SLA) violations and in what complaint cases, number of interactions between agents and other actors within specific cases, response, and resolution times, as well as predefined complaint case categories and priority levels. This information was collected from an internal data collection system already in place at Company X, throughout this thesis this software system is presented under the alias of Freshmate.

Meanwhile for the collection of qualitative data, semi-structured interviews follow an exploratory structure and are frequently used for qualitative research purposes and allows a structured method while also providing options for topical trajectories as conversations progress (Magaldi and Berler, 2020). As this aligned well with the qualitative data required for the exploration of unforeseen topic areas, qualitative information collection was mainly conducted in the shape of semi-structured interviews. In addition to this, the qualitative data collected was done so through members of the studied company, who belong to one of three roles existing in the CH process. These roles are used to explain steps in the studied case process throughout this work and are necessary to be understood to see the relevance of the qualitative data collected. These roles were predefined by Company X and are explained as follows:

1. Agents have been denoted as complaint handlers responsible for handling the complaints and conducting the root cause analysis (RCA) and carrying out the

corrective and containment actions for that complaint and assigned to them by the complaint coordinator (CC) and will be referred to as agents throughout.

2. The CC is one of the managing members within the team who receives the complaint from the originator and is responsible for categorising and distributing the complaint among the agents based on its severity.
3. The originator is an entity or individual who sends in an observed complaint regarding a particular product or component, sharing their dissatisfaction. To add to this, originators can be both internal or external to the organisation and therefore complaints can originate from both these directions as well. Examples of internal originators could be other company departments or individuals who have identified defects or mismanagement. External originators could occur in the shape of the final business to business customer, or a supplier for example.
4. Finally, the process owner (PO) is the final managing member of the entire CH process who is responsible for overlooking the smooth running of the process.

The qualitative data collection format included conducting 8 semi-structured interviews, 6 of them were with agents, 1 with a CC, and 1 of them was with the PO. Each interview lasted for a duration of approximately 1 hour, and the main topics have been highlighted in table 1 and appendix z. However, semi-structured interviews were complemented by informal discussions and observations made throughout this research project gathered through a participation approach. This participation approach gathered informal dialog and provided opportunities for observations to be made. This approach was performed by participating in the everyday work activities existing in the studied case process, such as attending meetings, discussing work over fika breaks, or simply by getting insight into the ongoing complaints and their handling. Sandiford (2015) highlights the importance of participant observation by mentioning some key advantages like, rich and contextualised data, but also highlights that this approach allows for a deeper understanding of cultural and social dynamics to be picked up on.

The adoption of this qualitative research structure and its flexibility helped mitigate negative impacts originating from limited time constraints and negated some of the undesired effects caused by having to design interviews without absolute understanding of all relevant topics. Furthermore, as explained in the delimitations chapter, recorded data originating from the qualitative investigation mainly covered those topics that relate to wishes or concerns within the system, or communication that indicated a desire for change to occur or stop. This information helped establish a more accurate current state image of the process by allowing for cross checking results with those found in the quantitative investigation. Additionally, the semi-structured interviews were conducted with agents and managers being the interviewees.

The semi-structured interview guideline created for this research project can be found in Appendix X. This guideline was created based on literature review on the creation of semi-structured interviews and was heavily inspired by Naz, Gulab and Adam's (2022) guideline for how to make a robust interview. Furthermore, the semi-structured interview was in its final form presented in suitable time to all interviewees before interviews were held, allowing questions, preparations, and objections to be made. The semi-structured interviews themselves focused on: Experience and role, onboarding process, process perception, work methods and workload, training and feedback loops, pain points, as well as opportunities and wishes. These topics were decided upon after evaluating the process and actors within it by qualitative means.

The empirical data collected from the semi-structured interviews has been displayed in the form of categories. The analysis of data collected was done in the form of category development, as is described by Ghauri, Grønhaug and Strange (2020) as the act of breaking down data, identifying relationships between data and the assignment of categories through common factors. These categories were thus created through researcher

evaluation while considering suitability for categorical comparisons to be made between quantitative and qualitative results. The categories are visualised in table 1 below with which topics these categories represent. According to Castleberry and Nolen (2018), a theme, or category in this case, highlights relevant data in relation to the research questions, and highlights a response pattern within the data set. Furthermore, these themes encapsulated the core aspects of the phenomenon being examined, in alignment to the research questions of the purpose of the study.

Table 1: Category Identifications

Category	Empirical Topics
Method/freshmate	Work instructions on individual and process level, role of the process software
Training/Teamwork	Skill, capabilities, team collaboration.
Feedback	Internal feedback structure for process improvement, opportunities for future improvements.
Workload	Experienced workload of the interviewee.
Change Inflicted Pain Points	Frustrations or issues created by a changing process.
Cross-functional collaboration	Level of collaboration between different departments and actors within the organisation and in supporting processes.
Knowledge Distribution	Knowledge and skill distribution
Parent/Child Pain Point	Work procedure employed in the current process is a targeted method statistic.
Onboarding Pain Points or Concerns	Current onboarding process.
Language Differences	Language and culture differences experienced by the process.
Administrative Workload	Workload only relates to reporting data and progress within the system.
Demotivation	Demotivation as a pain point and barrier to the process.

For data analysis, observations were evaluated using the above highlighted main topics by the researchers. The findings and results of these analyses were then presented and verified in their connection to reality and further theoretical applications by having a continuous discussion with Company X and attached research supervisor. The quantitative data was analysed using statistical software to conduct graphical analysis of this data to support and provide backbone to the empirical topics categorised from thematic analysis as highlighted in table 1. This was used as an analysis method so as to allow for adaptation of work methods, while aiding the applicability of conclusions made.

3.5. Ethical Considerations

As this project relied upon professional interactions, dialogues, and potentially company sensitive data, caution must be taken when facing ethical concerns. Primarily, the company was protected through non-disclosure agreements and by allowing the company to be anonymous throughout the entire research effort. Furthermore, any company sensitive

content will be censored and used with aliases to protect, and to achieve the wishes of Company X.

Similarly, specific individuals were protected to the same extent and only referred to by alias and department names common in the industry, did this ever prove to be important knowledge to the final report or during the conduct of the case study. In other words, Individual privacy was highly prioritised, and all information gathered from any employee at Company X was protected and only discussed in anonymous terms both throughout the conduct of the study and in the final results.

The qualitative study followed an approach of active discussion and interviews with the company personnel and the data gathered from these interactions was collected by avoiding any invasion of privacy and after taking consent from said personnel. In order to ensure that there was trust between the participants and the researchers, there existed high transparency about the aim and purpose of the interviews and discussions. Furthermore, to mitigate the risk of possible deduction of the origin of individual statements a purposefully lack of background questions and discussion points were recorded from any member of Company X.

Lastly, research methods and use of collected information followed a transparent communication method, where frequent consultations with company contact persons will be held to provide ample opportunities for interference.

3.6. Reliability, Validity, and Researcher Bias

Validity and reliability of the quantitative data used throughout this research project was quality checked by Company X. While a prominent level of trust was placed into this data, continuous scrutiny of how Company X collected said data was made, with the understanding that should data be found to be corrupted, unreliable, or lacking in detail, new collection methods would be designed and employed. While such actions ending up not being necessary, reliability, and potential bias of the data could not be fully guaranteed due to lack of insight and time constraints. However, the processes and company structures in place to ensure a prominent level of data accuracy and the achievement of industry standards means that the provided data, in combination with reasonable believability, can, and was assumed for this research effort to have been reliable. Another aspect that allows the use of historical data, is that the data will only act as a supporting tool for qualitative evaluations. Therefore, even if the data is found to be corrupted, findings and conclusions will still be possible without its influence, thanks to other sources of information.

Bias has been attempted to be mitigated in the research by utilising already established categories and definitions found in the case studied in the quantitative investigation, while categories established throughout the qualitative investigation has been done by grouping observations and data with common factors. Thus, while researcher bias will be present, especially in the qualitative investigation, it will not be allowed the same level of freedom to affect results as otherwise would have been the case.

The effect of this bias was further mitigated by consultations with other researchers and supervisors to confirm the reasoning for the choice of structure and methods. In parallel to this structured approach, a validation method with the company covered in the case was used where discoveries and observations were frequently validated through dialog with the attached supervisor and with Company X employees. This was employed in the research structure to ensure that findings were in line with other discoveries and that, should inconsistencies be found, further investigations could be made in a targeted manner.

4. Empirical Results

In this section empirical results of the current state (as of the first half of 2024) of the process studied through the case study will be presented in sub section 4.1. where the process will be visualised and further described. The empirical results gathered from the qualitative and quantitative study will also be presented in this section through the sub section 4.2. and 4.3. respectively. While the categories presented in the quantitative results will be taken directly from the data sample provided to the study by Company X, the qualitative results will be presented using categories that have been created from analysing and evaluating the results gathered throughout that investigation, their respective explanations can be found in Appendix Z. With the help of these results, some apparent differences and similarities can be identified, which while being presented here, will be analysed more in depth in the later discussion section.

4.1. Current state of the process

The CH process is a vital part of Company X's quality assurance effort and acts as a means for the company to improve customer and supplier communication and relationships. The CH process itself works in several directions of the supply chain and handles issues relating to production, suppliers, logistics, and customers under the same roof of CH and quality assurance. The process communicates with other departments of the company as well, such as with sales, marketing, production, and logistics. Additionally, the process spans across international borders, with Company X being an international company and thus has implemented a CH structure that has a local presence to most of its facilities. In the European part of the operations of Company X, CH activities can be found in Poland and Sweden.

The CH process, as can be seen visualised in Figure 2, involves several CH groups who take responsibility for implementing corrective actions and damage mitigation in the areas relating to their respective expertise. The agents within these groups are further responsible for mitigating the risk for recurrence of the core issues that led to the original case by eliminating root causes. Today, these groups are PQA which manages cases that relate to errors in production or internal sources, Supplier Quality Assurance (SQA) who take responsibility over complaints related to supplier issues, America Distribution Centre (ADC) who manage warehouse and logistics complaints in the Americas, International Distribution Centre (IDC) who manages global logistics complaints outside of the Americas. The complaints related to groups are all coordinated by the CC who can elevate and communicate further with the PO should that be necessary, who in turn could implement and drive change in the process and align groups within the process or align the organisation by communicating with parallel processes.

In Figure 2, the originator in the process map can be both external or internal and is regarded as the customer for the purpose of the CH process. The CC will evaluate the case put forward by the originator and distribute it to the relevant CH groups. PQA marked in green (as it is the focus of this study), SQA, IDC, or ADC. The involved agents will after implementing corrective actions, communicating with the Originator, and identifying corrective actions present a solution which will be confirmed by CC and Originator. Once that is done a Case Resolution can be presented and the Case is closed.

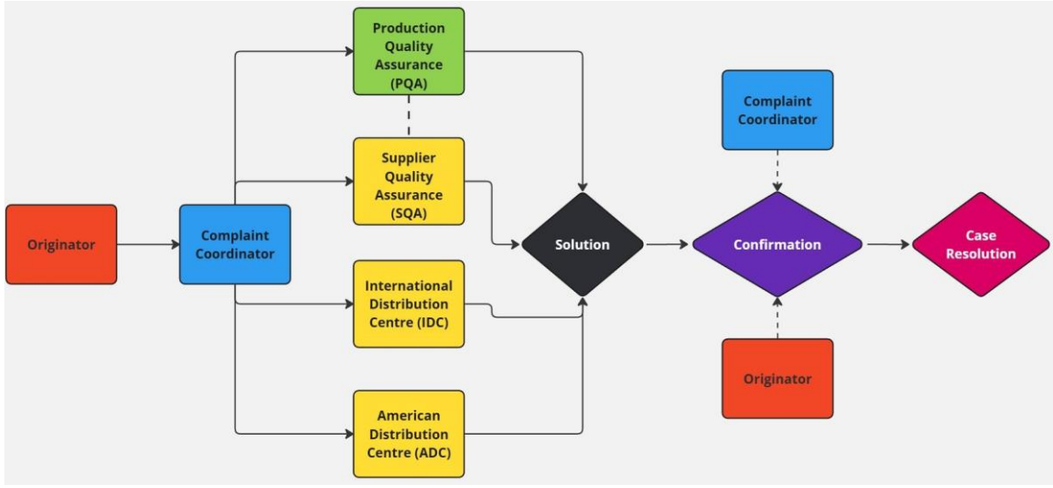

Figure 2: Complaint Handling Process

The whole CH process involves some level of cross-functionality and collaboration between the agents and their responsibilities and assignments are interdepartmental in nature. However, the strongest collaboration can be seen between PQA and SQA where they work together on cases relating to both production and supplier related issues. This can appear reasonable as an evolutionary step as the PQA and SQA departments worked under one roof three years ago. This Split of the PQA and SQA departments are one of two major structural changes that move the process towards a more decentralised state, the other being the introduction of the CC role that allows the process to work more autonomously from the PO. Today however, PQA and SQA have different focuses in CH as stated above, they collaborate heavily under the current process in the system using "Parent and Child Tickets" which has been implemented in recent years. This system makes it so that whenever a supplier related issue comes up, a Parent ticket will be created in the PQA department, while a Child Ticket is assigned to a SQA agent and connected to the Parent Ticket for supervision. The purpose of this system is to structure the CH and allow for collaboration between PQA and SQA since they often share responsibilities and expertise over product quality and supplier quality and thus cover topics that can relate to one another.

During the last three years however, the process has seen several substantial changes occur to the structures within the process of CH and the quality department, as well as the definitions of roles and work method standards. Changes such as introducing the new CH software, Freshmate, in parallel to customer relations management software. Furthermore, the process has gone through some constant updates, defining terminology, transparency, and role clarity for the user's using software and templates. Simultaneously, new hires as well as experienced agents alike have had to be introduced to these changes which has mostly been done through written instructions or instructional videos. These changes have occurred partly due to increased pressures from the company itself, but also as a consequence of the company group. However, these changes can also be attributed as consequences of a change of leadership in the quality department on several levels, but most importantly the change of PO for the CH process.

An important aspect of the current state of the process is the digital system that is being used. The current change process began with introducing a new digital system three years ago and are now using a system aliased as Freshmate. While this software is designed for CH, the qualitative results gathered throughout this case study has indicated that there is an opinion amongst agents that the software itself is seen as more fitted to call centres than larger supply chain and production related issues as is handled here. Something which was further confirmed to be limitations of the system by the PO on further discussion on the topic. However, according to the PO, this software has created a foundation upon which all other changes can be implemented, the previously mentioned parent and child ticket system for example was introduced along with this software. Worth adding is that the

software is further seen by management as a medium through which the CH process can be further standardised and monitored.

Lastly, while these changes are impactful and disruptive to various degrees, they are all according to the PO important for the modernisation of the process and to improve its ability to assure quality and to enable future expansion. However, the PO also acknowledges that the current state of the process is in firefighting mode and that the main ambition of further changes and improvements is to stabilise the process state.

4.2. Qualitative results

The semi-structured interviews were successfully completed and covered 8 interviews, six of which were agents from four different groups, while the other two interviews were conducted with one CC, and one process owner. These represent the two covered sample groups, Agents, and Managers. In the following results from the qualitative investigation a few distinctions are required to be made. The data presented in figures only relate to answers and discussion points raised during the semi-structured interviews, and only cover data points that can be connected to interviewee proposed wishes, opportunities, challenges, or concerns and criticism in the defined categories. The categories as mentioned before were created after the qualitative investigation had been completed and they were done so through evaluation of the gathered results, and allowed for data to be grouped and analysed in the way it is presented in this work. Furthermore, data will be presented as percentages and occurrences, in the figures presenting percentages the data is aggregated from a binary nature whether a category was mentioned during an interview or not. Meanwhile, occurrences quantify and summarise how many times a category was mentioned in the different interviews altogether.

Presenting the qualitative results in its most simple format, figure 3 shows what categories were mentioned at least once in the manner described above, 100% means that the category was brought up in all 8 interviews, while 0% means that it never occurred as a discussion point where a desire for change was voiced. Figure 4 complements figure 3 by showing the comparison of agent and manager interview results in the same visualised manner.

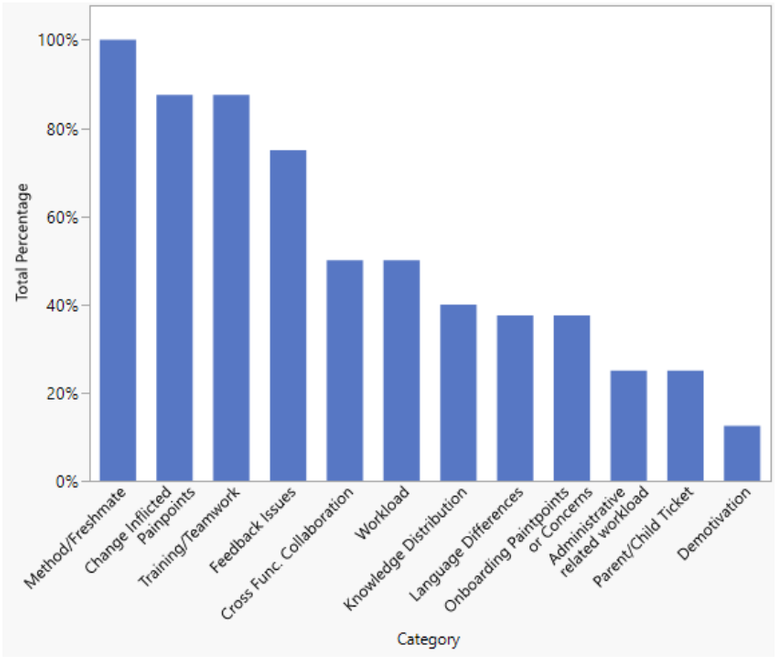

Figure 3: Categories mentioned in a way that indicates a desire for change in all interviews at least once

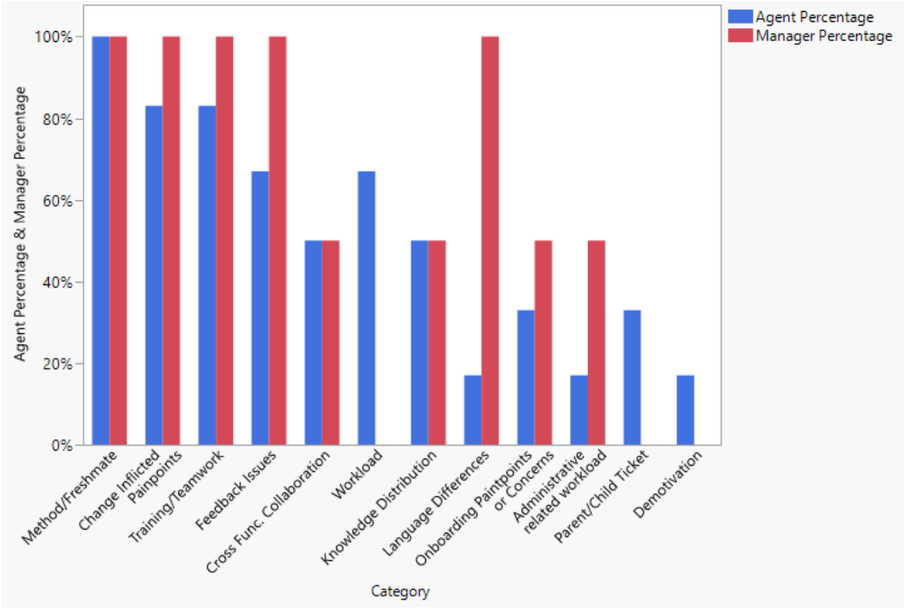

Figure 4: Categories mentioned in a way that indicates a desire for change voiced by agent and manager interviews at least once during their respective interviews

Exploring the qualitative results further, quantifying how often the category topics came up in a way that indicated a desire for change throughout the different interviews provides additional clarity. Figure 5 visualises this, it shows how often categories occurred in a way that indicated a desire for change on average in the different sample groups, thus showing similarities and differences between managers and agents.

Exploring the topics of where agent interviewees voiced the largest opportunities for process improvements as observed throughout the interviews further, the interviews resulted in many improvement areas being raised by the interviewees. The most prominent ones were: A greater need for group collaborations and training, a high potential for implementing strong feedback loops, opportunities to improve the software that is implemented, more thorough descriptions and definitions of role responsibilities, as well as more clear documents and documentation guidelines. One of the significant needs was feedback which was circumstantial in nature pointed out by several interviewees, wherein feedback was shared by them with the PO only when they were in close proximity to each other, being informal and missing a formal documentation structure.

The results from the conducted interviews with the CC and the PO on the other hand, visualised in figure 5, show that discussion points and improvement perspectives mostly surrounded work methods, feedback, training, and ongoing changes and their impact. Furthermore, during the interviews, improvement opportunities from these two manager interviewees highlighted improvement potential for the process in areas such as feedback loops, training and closer collaboration, software improvements, clearer definitions for both process instructions and onboarding, as well as a need to stabilise the currently changing process.

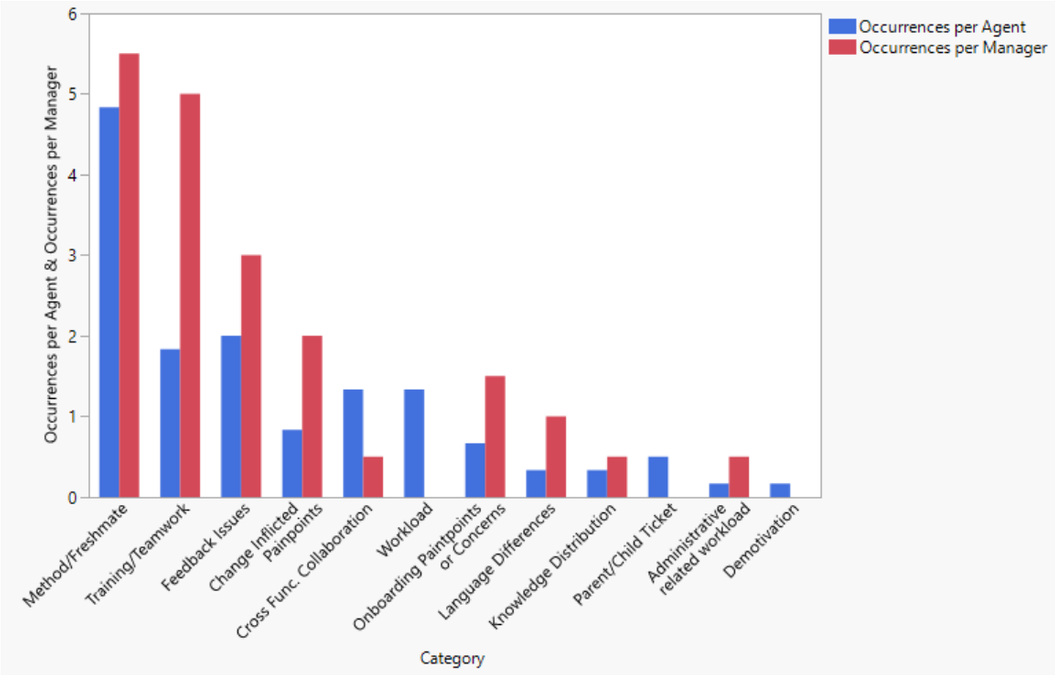

Figure 5: Averaged occurrences of categories mentioned in a way that indicates a desire for change in agent and manager interviews per interviewee

Outside of the formal qualitative results as presented above, further information was presented through informal interactions throughout this study. These interactions began occurring after researchers introduced the project to the CH teams at Company X, and the frequency of this type of informal interactions intensified after interviews had been conducted with the related individuals. The interactions could come in the form of sitting down to discuss issues over a coffee break, stopping by researcher workspaces, or by asking for a follow-up discussion, as described earlier in the methodology section. In these interactions employees showed a clear desire to describe certain needs for the process and indicated a pull effect for specific initiatives, and a further wish to elaborate on certain issues experienced. These wishes involved the need for the process to evolve in a way that promoted communication between agents, groups, as well as process leadership, by creating more accessible communication channels. But also included wishes on clearer role descriptions, a more structured onboarding process, and more well-defined process definitions and expectations. However, such informal interactions further voiced concerns that currently friction between agents and groups occur due to language differences, as well as a resistance to further change and indications of change fatigue in the process.

What can be seen in the qualitative results is that there is currently a high focus on the work methods currently being employed, both from the managers and the agents, as well as how that work is being instructed and how big part collaboration should have in it. Similarly, it can be seen that feedback and the impact of a continuously changing process is something that is commonly talked about in the interviews and therefore indicates a high awareness of these topics. Additionally, concerning improvement opportunities and needs the two groups appear very like-minded. While they present their wants and wishes in slightly different manners they do connect to the same areas of the process and work methods being employed.

However, differences in the result can also be identified. For example, while workload is a common topic among the agents, it was not brought up at all by the managers, instead administrative workload was the only workload related topic brought up. A similar result can be seen in the topic of parent and child ticket related comments as well. Lastly, it is noted that the managers showed a greater concern for linguistic and cultural differences than their agent colleagues. This further connects to the wants expressed by the managers to acquire greater control of the process by getting more involved and managing it more closely, as these points would show up in the results as higher administrative workload.

These comments on involving themselves in the process more came with already reflected on connections to trade-offs that the process, and its leadership, would experience. Such trade-offs being that while higher control and closer collaboration with the agents would be achieved, a higher administrative workload would be incurred, in combination with the risk of lowering agent autonomy.

4.3. Quantitative results

Figure 6 explains about the distribution of the workload among the agents and the departments. All the quantitative data has been analysed using a period of 6 months of data from the system. The number of complaints is distributed among the agents, according to the CC, based on their availability, workload, and previous experience. Both figure 6 and figure 7 highlight the cross functional nature of the CH process. This can be seen as figure 6 shows the number of cases per group and displays their workload over a period of 6 months of raw data, while figure 7 complements this data with details on which category of topics each group works on. The *No Group* element in figure 6 represents the numbers of complaints which have not yet been assigned to any specific group. Furthermore, by targeting quantitative data in workload related questions, the qualitative results on agents being more concerned with this topic can be further investigated.

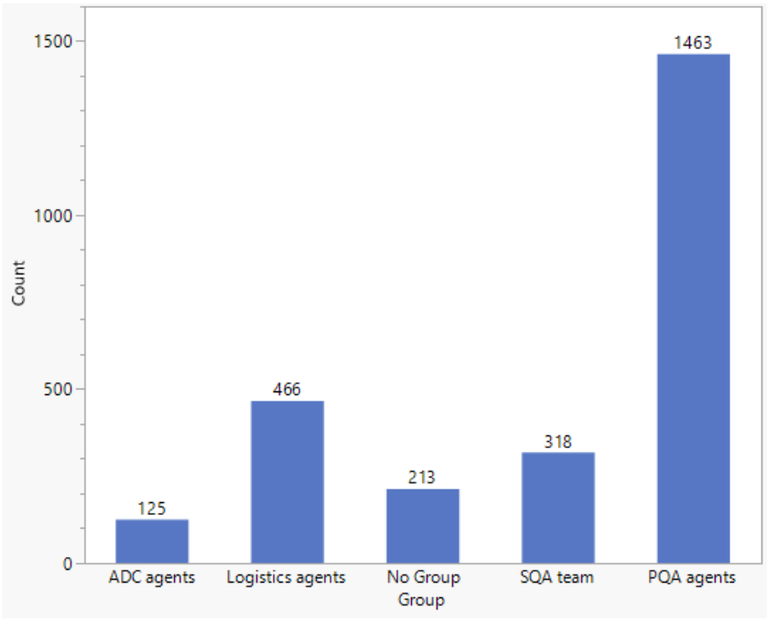

Figure 6: Complaint count over assigned group and agent

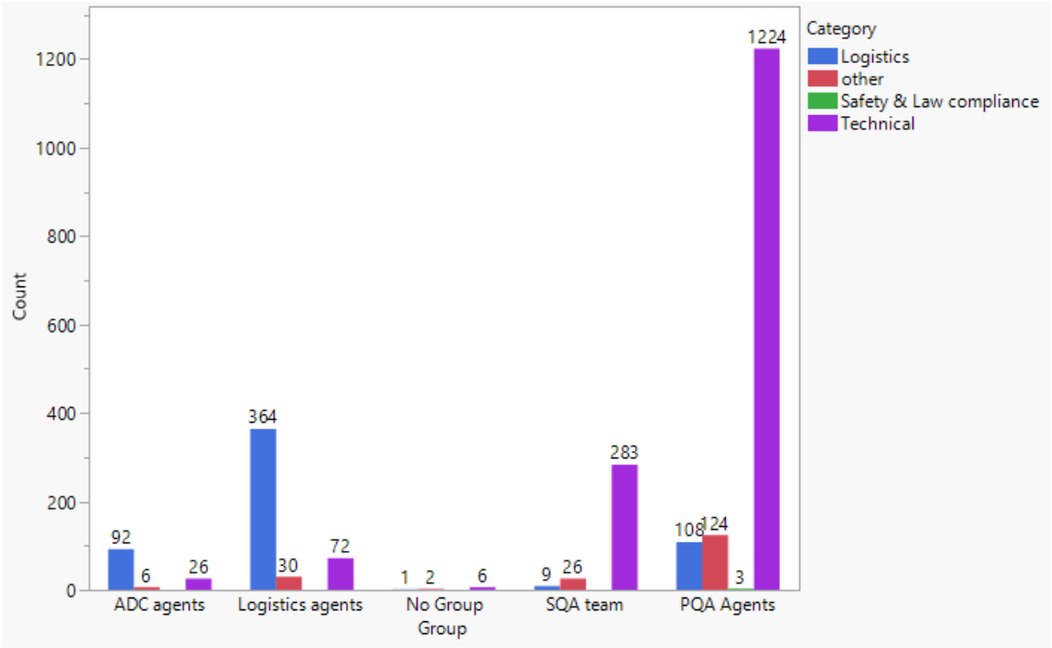

Figure 7: Complaint count over group with complaint category

In figure 7, the distribution of skill can be evaluated as different agent specialties can be seen being applied outside of their expertise area. PQA agents can for example be seen working taking on logistical cases outside of their technical domain, and equally so we can see ADC and Logistical agents taking on technical cases. The only group difficult to evaluate is SQA due to that their focus should be on supplier issues which is not on its own a recorded category. Similarly, SQA agents are often connected to technical issues through the parent and child ticket system, and therefore are aggregated into the technical cases even if they handle suppliers only. Consequently, this lack of detail in data prevents the same evaluation, of whether the SQA group utilises its expertise effectively or not, to be made. Furthermore, the inconsistency seen in the *No Group* between figure 6, and figure 7 on count total is due to the fact that not all cases in this group have been placed in a category yet.

Furthermore, the level of interactions between agents is visualised in figure 8 where the colours indicate the number of interactions each group has over case count, where each interaction count is defined as the occurrence of a one-way correspondence occurring within the CH process, for example a mail or message through Freshmate. The *No Group* heading presented in figure 8 are cases that have not yet been allocated to groups and the interactions therefore show correspondence between the CC and other actors. figure 8 further visualises the count of complaint cases with the number of interactions each department has conducted throughout their respective complaint case resolution, and further categorised them in interaction count intervals. The PQA agents display the greatest number of interactions between each other, and highlight the aspect of dependency, communication, and insight into the complaint for resolving the complaints.

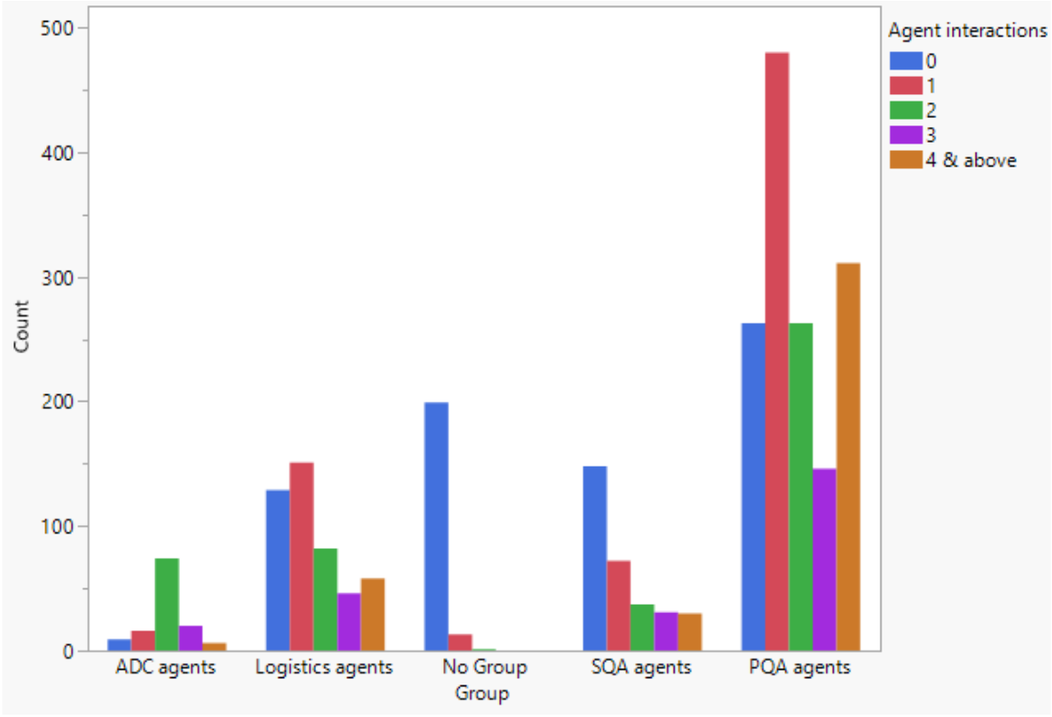

Figure 8: Complaint count over group with agent interactions

In accordance to the time pressures the agents have been affected with, the SLA in table 2 is a set of predefined timelines for the agents to setup containment and corrective actions and provide information to the CC, and in case of any deviations the agents need to inform CC who has to further inform the originator as and when needed. The SLA for low priority cases has not been fully defined by Company X, since the entire CH process has been undergoing frequent changes, and there is still work-in-progress about merging the SLA of normal priority cases with low priority cases within the current process.

Table 2: Assigned SLA for assigned case priorities

Priority	RCA	Group	Corrective Actions
High	3 days	Logistic	14 days
-	5 days	PQA	14 days
Normal	7 days	Logistic	30 days
-	14 days	PQA	30 days
Low	?		
-	?		

Based on the above defined SLA, figure 9 displays the level of conformance the agents can abide to while handling complaints. figure 9 gives an overall understanding of the number of complaints within and outside the SLA. For the SQA agents, they have a higher percentage of complaints outside SLA than within SLA, and for PQA agents, they also have a significant percentage of complaints outside the SLA, 21% as displayed. Here the 9.2% of complaints in the *No Group* element highlight the number of complaints which are yet to be categorised and are by default within SLA since they have not been analysed yet.

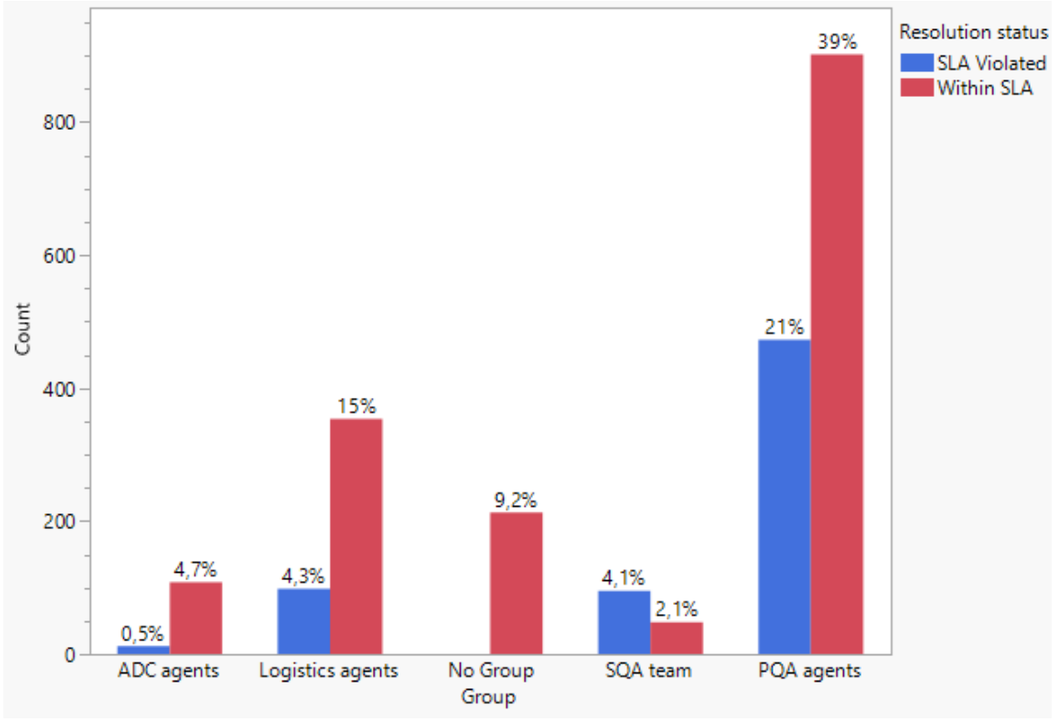

Figure 9: Complaint case count over group with SLA performance

Moving on, figure 10 dives deeper into the priority distribution of the same complaints to understand which priority of complaints is within or outside the SLA. The distribution shows the number of complaints across the groups which are within SLA and outside SLA, along with colour coded priority status as a means to highlight how agents are faring against the SLA. In the case of PQA and SQA agents, the number of high and urgent priority complaints violates the SLA by 9 and 0,7 % and 1,1 and 0,6 % respectively as compared to the complaints within SLA.

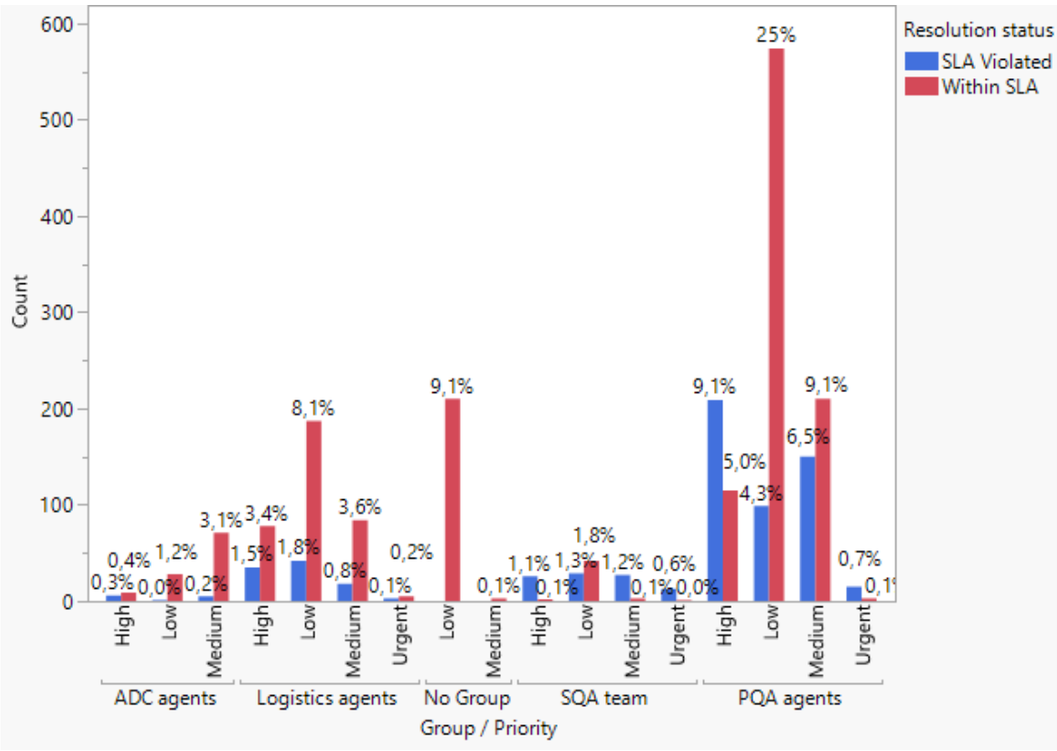

Figure 10: Complaint case count over group and priority with SLA performance

Furthermore, based on the amount of workload, the first response time has also been mapped between agents. Here the first response time is referred to as the first point of contact from the agent to the originator once the case has been assigned to the agent by the CC.

From Table 3 and figure 11 found below, the number of hours needed to respond to the originator after the case has been assigned to agents can be seen, covering multiple departments. The priority of the complaints is also one of the visuals used to understand how the response time varies from low to urgent priority complaints. An example is the response time of logistics agents for urgent priority cases which violates the SLA requirements.

Table 3: SLA responsibilities

WHAT	WHEN	WHO
Assign ticket to 1 agent	1 business day	Complaint Coordinator
Contact originator for details (First response time)	1 business day after case is assigned	Agent

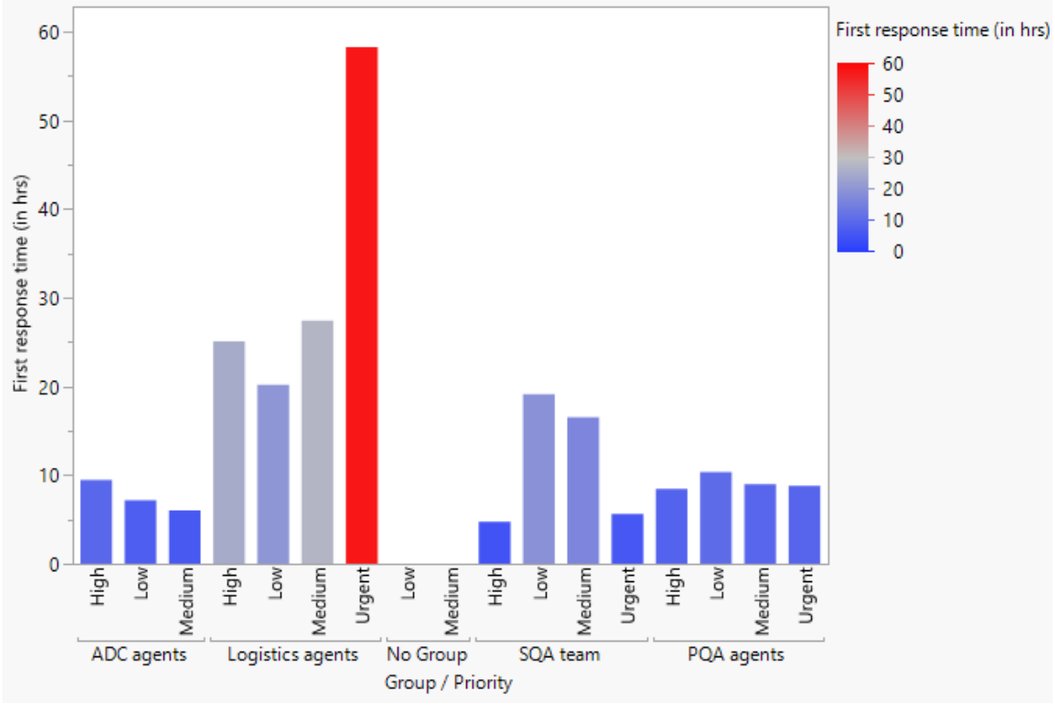

Figure 11: First response time over agent group

5. Discussion

In this section, empirical findings are discussed in connection to the theoretical framework. Discussion points will focus on answering the research questions and thus discuss challenges experienced by the CH process at Company X, as well as how organisational structure and design affects such a process. Furthermore, recommendations will be presented to incorporate these discussion points and will aim to direct the CH process to be in a stronger position for future continuous improvement efforts and to increase current performance.

5.1. Challenges Facing Complaint Handling Processes

Johnston et al. (2001) states that from an operations perspective, CM is the process by which complaints are handled and customers recovered. An effective CM system is an integral part of customer service, and it is a useful source of information and feedback for improving continuously (Bakar et al., 2008). Currently, Company X is undergoing a lot of changes, one of which being that they have recently introduced the CH software Freshmate as a part of their improvements within the PQA department. In our analysis, we have identified several types of challenges in the CH process, including organisational, communication, and competence challenges.

Organisational challenges which refer to issues related to processes, methods, and roles within the company, are particularly significant. For instance, inconsistent CH procedures and unclear role definitions can hinder effective CH resolution. This is supported by the literature on CH where a good organisational structure and process control is needed, which emphasises the importance of well-defined processes and roles in ensuring effective operations (Linder, Schmitt and Schmitt 2014). One of the main *organisational challenges* pointed out by the empirical findings was where the current process was undergoing frequent changes such as parent and child tickets existing between the PQA and the SQA groups, definition of roles and work methods, role clarity, transparency, software updates and use of templates. The empirical findings highlight that Company X is too highly involved in a firefighting approach. While the current direction of actions aims to reduce the currently *large backlog*, which applies unnecessary stress to the system and complicates future efforts, it is something that at the moment comes at the cost of effective and sustainable corrective actions. Furthermore, as indicated by the qualitative results, the personnel involved in the CH process have not been able to adapt to recent changes as quickly as the management anticipated them to. The process lacks cross-collaboration and training related to the software, the templates being used, and the process currently only has a circumstantial feedback structure. The empirical results highlight that feedback was informal in nature and was not documented. The communication of feedback between agents and managers was also circumstantial in nature whenever they were in close proximity to each other, such was their feedback structure.

Moreover, the quantitative analysis further highlighted another organisational challenge, and an example is *conformance with the SLA*, where the process is falling behind in terms of abiding by the SLA. This relates to the lack of process definitions and training for the agents. The empirical findings highlight that the teams within the CH process have had many complaints violating the SLA, especially a higher percentage of complaints handled by the SQA and the PQA groups. This is in line with the theory where Behrens et al. (2007), Cambra-Fierro, Melero and Sese (2015), and Linder, Schmitt and Schmitt (2014), all propose the aspect of response time taken by an organisation in regard to the complaint they have received. The faster the organisation is at responding to the complaints, the more efficient the process will turn out to be with saving additional resources and efforts.

Another organisational challenge identified was the distribution of SLA violations in hours between different agent groups, and how the SLA violations fare against different priority

complaints. These findings indicate that most of the high and urgent priority complaints have violated the SLA. This goes hand-in-hand with the theory proposed by Ruessmann et al. (2020), where he makes use of a CFM model to conduct failure valuation involving pre-analysis of urgency and resource allocation for a particular complaint. Ruessmann's model emphasises the importance of pre-analysing the urgency of complaints and allocating resources accordingly. The empirical results confirm this theory by demonstrating that high and urgent priority complaints often breach the SLA, suggesting that better pre-analysis and resource allocation would be beneficial for mitigating these violations.

Thus, another challenge within the CH process exists in *communication challenges*, where for example, using multiple languages for communication within the same system causes friction and barriers for collaboration. The empirical findings additionally point out informal interactions between agents, and proper communication channels are needed between agents, groups, and leadership. Zhang (2010) who discusses the need for social interactions in order to share information and knowledge and co-create context dependent knowledge. The empirical findings resonate with Zhang's perspective, as effective communication and knowledge sharing among team members have proven essential for resolving complaints effectively. On similar lines, Morgan and Zeffane (2003) highlight the factor of leader's transparency as a means to increase trust between the employees and allow them to be heard and more open during discussions and meetings in order to have more control over the process.

Additionally, the empirical findings go on to stress on matters like structured *onboarding* and clear role descriptions being needed for improvements where the current process lacks proper documentation, training programs and effective knowledge transfer to the new employees. This is in line with findings mentioned by Behrens et al. (2007) and Lawrence (1968) about documenting information received from complaints, the steps taken to resolve it and which could be useful for future evaluations as well as information diffusion for clear decision making within the organisation. In addition to this, a lacking onboarding process would result in a lack of knowledge existing in the process due to individuals not being professionally trained, and not being adequately introduced to the system consequently, harming collaborative potential and communicative abilities within the process.

According to Hellebrandt, Heine and Schmitt (2018) as well as Mjahed and Triki (2009), competence and knowledge are shown as important aspects of CH. These were also identified from the empirical findings for example the *workload and skill distribution* are a challenge among the agents, where the agents often come across situations where they have to work beyond their technical domains giving rise to uneven skill distribution. This particularly relates to role clarity and training of agents on the system and the ability to handle diverse profile complaints. Another significant challenge pertains to employee involvement and continuous improvement of processes. This involved ensuring that employees are actively engaged in the change process, contributing to idea generation and innovation. This is in line with the theoretical framework where Hussain et al. (2016) propose a model of organisational change comprising employee involvement and knowledge sharing. According to Hussain et al., (2016) valuing the employees' inputs in the decision-making process enhances organisational performance and employee well-being. This employee involvement strategy fosters idea generation and innovation leading to employee motivation and commitment in implementing the change. The empirical findings support this model, indicating active employee engagement leads to better outcomes in the CH process and overall organisational improvement.

To support this strategy, Northouse's (2022) proposed shared and transformational style of leadership would create greater engagement, stronger and more plentiful communication, create the potential to reach specified targets, and improve long term capabilities. This further supports Alavi et al's. (2014) assertion on the company's ability to anticipate and adapt to change by establishing a quality-oriented culture.

Hellebrandt, Heine and Schmitt (2018) proposed similar views in the theory which demonstrates how companies can implement long-term knowledge transfer on some of the KM activities like: identification, acquisition, development, distribution, and protection of knowledge. This is further based on the foundation given by Linder, Schmitt and Schmitt (2014) on long-term complaint knowledge transfer through organisation of data, identification of failures and implementation of corrective actions which describes that employee inputs and finding out all the relevant complaint information is key to generate a comprehensive information basis. Additionally, Alavi et al. (2014) mention learning capability and organisational knowledge as the appropriate methods for survival and achieving long-term success. Similar views have been presented by Mjahed and Triki (2009) who recommend a knowledge management tool with 4 aspects on content, competence, collaboration, and composition. Specifically, their emphasis on competence entails understanding customer knowledge to navigate various tasks within different processes, thereby enabling the agents to address diverse situations. The findings on workload and skill distribution from the empirical results express this understanding by highlighting how developing competence will help the agents working beyond their area of expertise. This underscores the importance of focusing on specific competencies, particularly those relevant to understanding customer needs and resolving complaints effectively, aligning with the themes highlighted in our research findings. This is further supported by Zhang (2010) and Behrens et al. (2007), where having knowledge on standardising information flows in CM helps prevent incomplete and unclear fault descriptions, and mitigates time spent on processing complaints. Furthermore, according to the same authors, the steps taken to solve complaints need to be documented and saved for future evaluations and problem-solving to further enable quality to be assured. Additionally, these documentations and managed flows of information that the authors describe, thus affect the proficiency of employees and impact how well the process and its quality assurance effort can address complaints more in an effective manner.

5.2. Organisational Structure and Design of Complaint Handling

Organisational structure and design concepts have gained further validity in CH thanks to works in this field, such as those produced by S.Phabmixay et al., (2018) and Behrens et al. (2007). These works applied organisational structure and design to practical and operational levels and showed its usefulness when looking at problems in these areas. To achieve equivalent results and understand how structures and designs affect CH processes in general, it is important to evaluate the insights made throughout the case study through the lens of mechanistic or organic characteristics.

Firstly, with the descriptions presented by Godwyn and Gittell (2011), as well as Burns and Stalker (1994), that being in simplistic terms, that lower levels of worker autonomy and a more standardised and defined process equates one adopting a more mechanistic organisational structure and design. With the reverse being that of an organic one. When looking at the CH process at Company X, it can be seen that a mix of both mechanistic and organically natured traits of the process exist. For example, mechanistic ones can be found in the division of agent teams, clear leadership structure, and pre-established SLAs. Meanwhile, organic ones can be seen in agents' ability to adapt their work method to the case they face, that they work cross-functionally, and that agents are allowed to discuss problems with one another (although in informal settings).

While this is the case, there is in its current state a heavy emphasis on standardisation and documentation in the change initiatives experienced by the CH process. These aim to make the process more predictable and manageable, at the expense of agent autonomy. These decisions can thus be regarded as forces that move the process from where agents could decide on which work methods to employ, towards a state where all agents are to solve

cases in a certain and equivalent manner. This can be seen as a force existing in the process' current state pushing the process to adopt more mechanistic characteristics.

When looking at potential consequences of lowering agent autonomy and the lack of driving organically characterised process improvements, it can be assumed that the effects of higher employee involvement and empowerment (Lawrence, 1968; Hussain et al., 2016; S.Phabmixay et al., 2018) will thus be experienced in reverse. If this would be the case, agents would care less, act less creatively, and experience increased frustration with the methods which they are being directed to employ. While this applies to the case from a generality manner, it is interesting to note that this too is something which can be observed in the empirical data gathered as agents voice clear dissatisfaction with how current work methods have been structured. On similar lines, Godwyn and Gittell (2011) stresses that by adopting an organic design beneficial aspects such as employees gaining a contribute mindset, greater process flexibility through continual redefinition of tasks, and a stronger collaborative atmosphere within the organisation, can all be promoted.

Furthermore, as indicated by the qualitative results, moving responsibility from workers to managers requires managers to involve themselves in the work methods used for complaint resolution further. Consequently, the risk for conflict between the different actors in the process is thus increased for the same reasons explained by Lawrence (1968) on the concept of *differentiation* and lack of employee involvement in decision making. An example of this could be agents feeling their way of working or area of expertise being altered or encroached on without their request or guidance. However, this risk could equally be decreased or even drive benefits in process flexibility and performance if managed in a collaborative and transparent manner. This is suggested by Northouse (2022) and Lawrence (1968) in their respective works showing that the type of leadership, and the levels of integration and differentiation will have an impact on cross-functionality, collaboration, and conflict resolution in specific. It is of further interest to elevate these author's positions on multiple languages or cultures to coexist in a process. They raise this as a challenge that needs to be overcome to not create division in the system, and something more particularly to be so in geographically split processes as further supported by Northouse (2022). Applying this knowledge to the case, we see exactly such points of conflict occur. Where the diminishing agent autonomy, as well as documents and correspondence being kept off limits for all colleagues as a result of not employing a universal language, all apply friction within the system and thus creates a larger need for the process to allocate resources to resolve conflict or correct errors caused by such frictions.

While it is important to raise these risks by implementing too many mechanistic process improvements without acknowledging the need for organic ones, there can still be argued that there is a certain level of mechanistic traits that are needed due to easily acquired benefits. Such benefits granted by introducing mechanistic elements to a process is that it becomes more predictable, helps workers understand expectations and the process they are within, and further makes the process more defined (Behrens et. al., 2007). It could also become easier to monitor and evaluate the process thanks to a certain set of implemented data points and KPIs, but most importantly for the purpose of long-term performance, it enables a process to achieve a stable state from which future improvements initiatives can be pursued. In addition, this practically results in a higher degree of control of the process which in turn would result in improvements to managerial insights and action accuracy (Godwyn and Gittell, 2011). Consequently, change initiatives can be driven more easily and faster from higher levels in the organisation, and the organisation could better align itself to market goals and strategic ambitions while better understanding its own performance (Burns and Stalker, 1994).

As indicated by Alavi et al. (2014) and Saiti and Stefou (2020), in their respective works, mechanistic and organic organisational designs show a correlation to that of flat or

hierarchical organisations and show different strengths in terms of sustainability and agility (Alavi et al. 2014; Saiti and Stefou, 2020). Connecting this with increased manager responsibilities, the decision to move towards a more mechanistic structure and design in a CH process would increase the dependency on capable managers, and so as well, the communication and information sharing ability of the process as it takes on a more hierarchical structure. This can be argued since if there exists reluctance to communicate or share concerns in the system, then the accuracy of the information guiding managerial decision making will be lacking and risks making decisions be too dependent on quantitative data, ultimately resulting in an overreliance on past managerial decisions. Meanwhile, a more organically structured process would increase the flow of information naturally and would aid in increasing communication and operational adaptation to the situations faced by the CH department (Alavi et al., 2014; Lawrence, 1968). However, it would remove power from managers and thus mean that it will become more difficult or resource intensive to align one process with others, as well as to change along with strategic decisions.

With these ideas and discussion points laid out, a perception of which organisational structure and design the process covered in the case study follows can be made. To apply the case to the organisational structure and design field, it helps to look at this concept not as a binary model, but instead as a spectrum between two ultimate states, as it then becomes easier to apply these concepts to practical cases (Godwyn and Gittell, 2011; Burns and Stalker, 1994) However, the two-dimensional nature of the mechanistic-organic spectrum makes it hard to apply the concept into practice. Since it can be widely assumed that a process can exist with high worker autonomy, while still being well defined and even standardised to certain extents, it then becomes difficult to classify this process on the spectrum. Similarly, the leadership styles presented by Northouse (2022) could equally exist in differently natured process structures and designs, while the author still promotes their usage in specific situations. For example, while a process might allow high worker autonomy, it might still be very hierarchical and transactional in its leadership style, etc.

Consequently, this thesis project has found that the spectrum discussed is impractical for application to the case studied, and for the use of improvement projects therein. Rather, it has been found more practical to instead draw inspiration from the concept presented by Godwyn and Gittell (2011), as well as Burns and Stalker (1994) on organisational structure and design and mix process characteristics of both mechanistic and organic nature freely. Granted that the mixing of said characteristics do not carry antagonistic relationships, such as *Integration* and *Differentiation* and their respective consequences as presented by Lawrence (1968).

Understandably, one organisational structure or design cannot be labelled as better than the other in general terms. Consequently, when looking solely at CH in general through the lens of this case study and this discussion, it is crucial to rather look at what the process requires and needs to achieve, and from there look at what improvement can be implemented. Connecting this to organisational structure and design, CH processes will benefit from being developed with a mixture of both mechanistic and organic characteristics as it will elevate performance and better align the process with company strategy and goals. As a result, it could be argued that there is a need for a redefinition of the organisational theory presented by Godwyn and Gittell (2011), as well as Burns and Stalker (1994), as while their concepts have been shown to provide great insights, the two-dimensional aspect of the approach lacks fitness for guiding practical improvement projects.

5.3. Recommendations

With answers to what challenges CH faces from an operations management perspective, and with the knowledge of strengths and weaknesses connected to organisational structures

and designs, it can now be further investigated how to promote learning and continuous improvement in CH processes, such as the one observed at Company X. Moving the process towards a more standardised work methods and a more well-defined process can be argued to be the right decision by the company and will be assumed to be non-reversible for practical reasons. The company and the process require control to make substantial changes and align the CH process with the ambitious goals of the quality department. Having said this however, it is believed that such actions that increase control, needs to be coupled with certain changes which would increase the flexibility and the resilience of the process. It is these actions that will be presented below as recommended directions for implementation.

Clearer process and work method definitions and expectations: Firstly, if CH processes are experiencing similarly disruptive and uncertainty inducing changes as seen at Company X, such as large and new system attributes, templates, and actors in the process, coupled with new directives on how to work with those actors. Then these uncertainties and the frequency of changes would make it difficult for new definitions to diffuse in the system, but also make it difficult for expectations and distribution of responsibilities and knowledge to ingrain itself in the system and be taught. For this purpose, and while keeping the aspects previously raised, on for example role theory (Homburg and Fürst, 2005), it can be seen that stabilising the process with a set of clear definitions, expectations, and instructions for work methods to be used, will aid the changes occurring in the process to be adopted and create measurable results.

Heavier emphasis on shared leadership and employee involvement: However, for such definitions to be effective and accurate in their purpose to improve CH performance and control, they will also need to be grounded in the organisation. For this purpose, inspiration for recommendations can, among other raised works, be seen through the respective findings presented by Northouse (2022), Homburg and Fürst (2005), and S.Phabmixay et al., (2018). Their respective works indicate that it would be reasonable for a CH process, in the situation found at Company X, to increase employee involvement, aim to achieve higher levels of collaboration in decision making, and incorporate employees in the design and structure of process activities and tools. These authors further support that such directions would additionally strengthen conflict resolution and mitigation, and through this further aid in reducing frictions, and mitigate certain barriers correlated to continuous improvement efforts.

The creation of formal communication channels and feedback loops: Furthermore, it becomes evident through the empirical results gathered and the conducted discussions that not only increased conflict resolution capabilities would aid the performance of a CH process. But that increased levels of communication also would enhance employee involvement and knowledge transfer within the process. Therefore, striving away from the circumstantial feedback structure, such as the one that could be observed at Company X, and instead aiming to create formal feedback loops and communication channels would promote more well-informed decisions to be made.

With these recommendations, *Clearer process and work method definitions and expectations*, *Heavier emphasis on shared leadership and employee involvement*, as well as *the creation of formal communication channels and feedback loops*, it is aimed to lay the groundwork for continuous improvement and a well performing CH process. These recommendations additionally aim to allow for Company X, and organisations in situations like it, to mould a quality-oriented culture in their CH process revolving around the elimination of complaint causes rather than simply reducing the volume of complaints and switch from firefighting to a proactive state.

6. Conclusion

This thesis report set out to identify challenges within CH, how organisational structure and design affects it, and how learning and continuous improvement could be promoted. All with the focus on a case related CH process in an international industrial machinery manufacturing setting. This was decided on so as to deepen the knowledge of CH, and support improvement efforts in operational practices related to quality assurance.

The findings were able to extract challenges related to CH from literature and empirical results. These involve that the complaint process studied in the case is experiencing challenges in overcoming organisational, communication, and competence challenges. Both in the areas of achieving short term improvements and moving away from firefighting, but also when attempting to create impactful long-term changes in a sustainable manner. As a result of identifying these challenges, it was possible to identify that even if a stronger emphasis on standardisation is employed, a CH process can be complemented with flexibility and knowledge transfer to face and improve long term performance prospects.

The report has found that CH as a focus field within operations management can be connected to organisational structure and design, change and improvement management, as well as knowledge and information transfer. The report has further found that the choice of how to align CH towards mechanistic or organic designs has, through the theoretical framework observed, consequences for the CH process and its robustness, performance, and adaptability. Additionally, the established spectrum concept on organisational structure and design that was originally meant for simplifying practical implementation, was found lacking in its applicability to the case studied. This resulted in the concept only being used to drive discussions rather than to act as a model for the case to be implemented within. Furthermore, connections were made between theoretical elements and empirical results gathered from a single case study, where correlations to organisational structure and design were found.

These insights carried with them enough knowledge to allow for three recommendations on the topics of process definitions, leadership styles, and communication channels to be discussed and presented. These improvement recommendations carried with them theoretical backing to potentially enable long-term success, and thus allowed for the achievement of the research aim, and the answer of the three established research questions.

This MSc thesis has given insight into the process of CH and future improvement processes sharing those characteristics seen in the case process, limitations to the conclusions exist. For one, due to the employment of a single case study, only a narrow glance at CH in practice could be observed and investigated thoroughly. To complement this and evaluate the conclusions made here, further CH process could be to provide more substance to findings and discussions made here.

Furthermore, this case study only extended to the point of directing change initiatives, not measuring the impact and implementation of the pursuit of said directions. Thus, future works covering a long-time span where implementations and their extended effects on performance, employee interactions, and company collaboration, could be of interest to enhance and verify the conclusions made in this work.

Lastly, as the organisational structure and design spectrum concept presented within this research project was found limited in its applicability to the studied case, future research investigating how the model can be more applicable to case studies would be beneficial.

References

1. Alavi, S., Abd. Wahab, D., Muhamad, N. and Arbab Shirani, B. (2014). Organic structure and organisational learning as the main antecedents of workforce agility. *International Journal of Production Research*, [online] 52(21), pp.6273–6295. doi:https://doi.org/10.1080/00207543.2014.919420.
2. Ashton, D.N. (2004). The impact of organisational structure and practices on learning in the workplace. *International Journal of Training and Development*, [online] 8(1), pp.43–53. doi:https://doi.org/10.1111/j.1360-3736.2004.00195.x.
3. Awuzie, B. and McDermott, P.M. (2017). An abductive approach to qualitative built environment research. Qualitative Research Journal, [online] 17(4), pp.356–372. doi:https://doi.org/10.1108/qrj-08-2016-0048.
4. Bakar, A., Abidin, Z. and Taufik, M. (2008). The Implementation of Agent-based Complaint Management System. *IJCSNS International Journal of Computer Science and Network Security*, [online] 8(5), p.205. Available at: https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=7fd1e4eefffb04c78454390d4de26bbdf9bc8bbb [Accessed 2024].
5. Behrens, B.-A., Wilde, I. and Hoffmann, M. (2007). Complaint management using the extended 8D-method along the automotive supply chain. *Production Engineering*, [online] 1(1), pp.91–95. doi:https://doi.org/10.1007/s11740-007-0028-6.
6. Brady, M.K. and Cronin, J.J. (2001). Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach. *Journal of Marketing*, [online] 65(3), pp.34–49. Available at: https://www.jstor.org/stable/3203465?saml_data=eyJzYW1sVG9rZW4iOiI2MmM0MTVjMS02ZGNkLTQzZDgtYjkwOS01MGJiZDkwMzE1MmQiLCJpbnN0aXR1dGlvbklkcyI6WyJjYzY1MWYzNC1iYzhjLTQxODQtYjc3ZS05NDQ4Mzg3Y2ZjZWIiXX0&seq=12 [Accessed 2024].
7. Burns, T. and Stalker, G.M. (1994). The Management of Innovation. *The Management of Innovation*. [online] doi:https://doi.org/10.1093/acprof:oso/9780198288787.001.0001.
8. Cambra-Fierro, J., Melero, I. and Sese, F.J. (2015). Managing Complaints to Improve Customer Profitability. *Journal of Retailing*, [online] 91(1), pp.109–124. doi:https://doi.org/10.1016/j.jretai.2014.09.004.
9. Castleberry, A. and Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? Currents in Pharmacy Teaching and Learning, 10(6), pp.807–815. doi:https://doi.org/10.1016/j.cptl.2018.03.019.
10. de Mast, J. and Lokkerbol, J. (2012). An Analysis of the Six Sigma DMAIC Method from the Perspective of Problem Solving. International Journal of Production Economics, [online] 139(2), pp.604–614. doi:https://doi.org/10.1016/j.ijpe.2012.05.035.
11. Devadasan, S.R., Goshteeswaran, S. and Gokulachandran, J. (2005). Design for quality in an agile manufacturing environment through modified orthogonal array-based experimentation. *Journal of Manufacturing Technology Management*, [online] 16(6), pp.576–597. doi:https://doi.org/10.1108/17410380510609456.
12. Douven, I. (2011). Abduction (Stanford Encyclopedia of Philosophy). [online] Stanford.edu. Available at: https://plato.stanford.edu/entries/abduction/#DedIndAbd.
13. Ellouze, W. 2010. Entwicklung eines Modells fuer ein ganz-heitliches Fehlermanagement: Ein prozessorientiertes Referenzmodell zum effizienten Fehlermanagement Aachen, Shaker
14. Filip, A. (2013). Complaint Management: A Customer Satisfaction Learning Process. *Procedia - Social and Behavioral Sciences*, [online] 93(1), pp.271–275. doi:https://doi.org/10.1016/j.sbspro.2013.09.188.

15. Freeman, R., Kleiner, M. and Ostroff, C. (2000). The Anatomy of Employee Involvement and Its Effects on Firms and Workers. *Working Papers*, [online] 8050. doi:https://doi.org/10.3386/w8050.
16. Garvin, D.A. (1984). What Does ¨Product Quality¨ Really Mean? *Sloan Management Review*, [online] pp.25–43. Available at: http://oqrm.org/English/What_does_product_quality_really_means.pdf [Accessed 2024].
17. Ghauri, P., Grønhaug, K. and Strange, R. (2020). Research Methods in Business Studies. [online] Higher Education from Cambridge University Press. Available at: https://www.cambridge.org/highereducation/books/research-methods-in-business-studies/0E34E973A5B76B71536E6E2B27F40A97#overview.
18. Godwyn, M. and Gittell, J.H. (2011). *Sociology of Organizations: Structures and Relationships*. [online] *Google Books*. SAGE Publications. Available at: https://books.google.de/books?hl=sv&lr=&id=acHnScKqPGIC&oi=fnd&pg=PA14&dq=mechanistic+vs+organic&ots=3UaJvcy3zU&sig=L6BGBAwjTLHivd6ro3x2vnJrskw&redir_esc=y#v=onepage&q=mechanistic%20vs%20organic&f=false [Accessed 2024].
19. González Bosch, V. and Tamayo Enríquez, F. (2005). TQM and QFD: exploiting a customer complaint management system. International Journal of Quality & Reliability Management, 22(1), pp.30–37. doi:https://doi.org/10.1108/02656710510572977.
20. Gustafsson, J. (2017). Single case studies vs. multiple case studies: A comparative study.
21. Hellebrandt, T., Heine, I. and Schmitt, R.H. (2018). Knowledge management framework for complaint knowledge transfer to product development. *Procedia Manufacturing*, [online] 21, pp.173–180. doi:https://www.google.com/url?q=https://doi.org/10.1016/j.promfg.2018.02.108&sa=D&source=docs&ust=1712320186658224&usg=AOvVaw3MjeLREerXItDf2PzIdnLs.
22. Homburg, C. and Fürst, A. (2005). How Organisational Complaint Handling Drives Customer Loyalty: An Analysis of the Mechanistic and the Organic Approach. *Journal of Marketing*, [online] 69(3), pp.95–114. doi:https://doi.org/10.1509/jmkg.69.3.95.66367.
23. Hussain, S.T., Lei, S., Akram, T., Haider, M.J., Hussain, S.H. and Ali, M. (2016). Kurt Lewin's Change model: a Critical Review of the Role of Leadership and Employee Involvement in Organisational Change. *Journal of Innovation & Knowledge*, [online] 3(3), pp.123–127. doi:https://doi.org/10.1016/j.jik.2016.07.002.
24. Jeanpert, S., Jacquemier-Paquin, L. and Claye-Puaux, S. (2021). The role of human interaction in complaint handling. *Journal of Retailing and Consumer Services*, [online] 62, p.102670. doi:https://doi.org/10.1016/j.jretconser.2021.102670.
25. Johnston, R. (2001). Linking complaint management to profit. *International Journal of Service Industry Management*, [online] 12(1). Available at: https://www.emerald.com/insight/content/doi/10.1108/09564230110382772/full/html [Accessed 2024].
26. Kessler, S.R., Nixon, A.E. and Nord, W.R. (2016). Examining Organic and Mechanistic Structures: Do We Know as Much as We Thought? *International Journal of Management Reviews*, [online] 19(4), pp.531–555. doi:https://doi.org/10.1111/ijmr.12109.
27. Lam, N.W.W. and Dale, B.G. (1999). Customer complaints handling system: Key issues and concerns. *Total Quality Management*, [online] 10(6), pp.843–851. doi:https://doi.org/10.1080/0954412997253.
28. Lawrence, P.R. and Lorsch, J.W. (1968). Organization and Environment: Managing Differentiation and Integration. *Reviewed Work: Organization and*

Environment: Managing Differentiation and Integration., [online] 13(1), p.180. doi:https://doi.org/10.2307/2391270.
29. Linder, A., Schmitt, S. and Schmitt, R. (2014). Technical complaint management from a quality perspective. *Total Quality Management & Business Excellence*, [online] 25(7-8), pp.865–875. doi:https://doi.org/10.1080/14783363.2014.906111.
30. McMillan, E. (2002). *Considering organisation structure and design from a complexity paradigm perspective*. [online] oro.open.ac.uk. Available at: https://oro.open.ac.uk/2732/ [Accessed 2024].
31. Magaldi, D. and Berler, M. (2020). Semi-structured Interviews. *Encyclopaedia of Personality and Individual Differences*, [online] 5(4), pp.4825–4830. doi:https://doi.org/10.1007/978-3-319-24612-3_857.
32. Morgan, D.E. and Zeffane, R. (2003). Employee involvement, organisational change and trust in management. *International journal of Human Resource Management*, 14(1), pp.55–75.
33. Naz, N., Gulab, F. and Aslam, M. (2022). Development of Qualitative Semi-Structured Interview Guide for Case Study Research. *Competitive Social Science Research Journal*, [online] 3(2), pp.42–52. Available at: https://cssrjournal.com/index.php/cssrjournal/article/view/170/72.
34. Northouse, P.G. (2022). *Leadership: Theory and Practice*. [online] *Google Books*. SAGE Publications. Available at: https://books.google.de/books?hl=sv&lr=&id=6qYLEAAAQBAJ&oi=fnd&pg=PA1&dq=Northouse [Accessed 2024].
35. Pramono, J. and Suryanto, M. (2023). Customer Complaint Handling Strategy using the Theory Perspective of Griffin and Michael at PT Maluku Prima Makmur. *International Journal of Innovative Science and Research Technology*, [online] 8(6). Available at: https://ijisrt.com/assets/upload/files/IJISRT23JUN1142.pdf [Accessed 2024].
36. Razali, R. and Jaafar, J. (2012). *Complaint handling theoretical framework*. [online] ieeexplore.ieee.org. Available at: https://ieeexplore.ieee.org/document/6297275 [Accessed 2024].
37. Ruessmann, M., Hellebrandt, T., Heine, I., Huber, U., Telpis, V., Rutten, P. and Schmitt, R.H. (2020). Performance measurement of the complaint and failure management process. *Quality Management Journal*, [online] 27(1), pp.2–20. doi:https://doi.org/10.1080/10686967.2019.1689801.
38. Saiti, A. and Stefou, T. (2018). Hierarchical Organisational Structure and Leadership. *Oxford Research Encyclopedia of Education*. [online] doi:https://doi.org/10.1093/acrefore/9780190264093.013.709.
39. Sandiford, P.J. (2015). Participant Observation as Ethnography or Ethnography as Participant Observation in Organizational Research. The Palgrave Handbook of Research Design in Business and Management, pp.411–443. doi:https://doi.org/10.1057/9781137484956_22.
40. Slack, N. and Brandon-Jones, A. (2018). Essentials of Operations Management. [online] Google Books. Pearson UK. Available at: https://books.google.se/books?hl=sv&lr=&id=jmp8DwAAQBAJ&oi=fnd&pg=PT19&dq=Definition+of+Operations+management+slack&ots=luRWTc6oK5&sig=sr8oDpEiEaA6n-2kbgJ5UKzc7ZM&redir_esc=y#v=onepage&q=Definition%20of%20Operations%20management%20slack&f=true [Accessed 22 Apr. 2024]
41. Samiha Mjahed, & Abdelfattah Triki. (2009). Toward E-Knowledge Based Complaint Management. Int. Arab. J. E Technol., 1, 68–82.
42. S.Phabmixay, C., Rodríguez-Escudero, A.I. and Rodríguez-Pinto, J. (2018). Organisational antecedents to designing a comprehensive complaint management system. *Journal of Management & Organization*, [online] 27(3), pp.1–26. doi:https://doi.org/10.1017/jmo.2018.73.

43. Stauß, B. and Seidel, W. (2019). Strategic Planning of Complaint Management. *Management for professionals*, [online] pp.69–84. doi:https://doi.org/10.1007/978-3-319-98705-7_5.
44. Zhang, W. (2010). A Systematic Knowledge Management Approach Using Object-Oriented Theory in Customer Complaint Management. *Information Management and Business Review*, [online] 1(1), pp.1–10. doi:https://doi.org/10.22610/imbr.v1i1.866.

Appendix X1: Semi-Structured Interview Agent Template

Semi-Structured interview template

Hello and thanks for taking part in this semi-structured interview as a part of our thesis and process improvement project! We are two students from Chalmers University of Technology, currently enrolled in the Quality and Operations Management program. As part of our Master Thesis, we are assisting Company X in further developing the current state of the complaint handling process. The thesis aims to make connections between theory and the operational activities at Company X, so that sustainable improvements can be identified.

As we need to understand the experience and perspective of those actors involved in the process, we aim to gain an audience with Originators, Complaint Coordinators, Agents, Sales representatives, as well as Process owners. You have been identified as someone that could bring insights to one or several of these roles and would thus provide us with invaluable qualitative data that will play a large part of our analysis, should you decide to take part. Below you can find a list of important information as well as the questions that we have prepared for us to discuss.

Information to be understood by the interviewee:

a. You will be anonymous.

b. Company name will be anonymous in the final publishing.

c. We will interview several other actors within the complaint handling process.

d. Recording will be done only after Interviewees' consent.

e. Qualitative data collected from these interviews will be used for analysis purposes and can be presented in the final thesis report as supporting evidence.

f. At any point the interviewee can decide to withdraw from participation, before/during/after the interview has been conducted. All information of the participation will then be redacted from the study.

g. After the completion of the analysis and thesis report, any interview recordings or documentation will be deleted.

Interview Questions

1. How long have you been working with the system? (an important statistic to know)
2. What is your role in the complaint handling process and how do you see it?
3. To what extent do you use templates or frameworks for complaint handling.
    a. If any other than those provided by the system → Which?
    b. What do you think about the video instructions as a tool for conveying work methods? Do you think it is enough or more tools are needed?
4. Where do you encounter frustration (pain points) in your complaint handling work?
5. How would you describe your complaint handling related workload?
6. Which other actors in the complaint handling process do you interact with?
7. Have you received any information and training on how to perform your task or surrounding elements?
    a. How often is this provided/attended?
    b. How well do you follow these directives?
8. How easy is it for you to raise feedback, or influence how complaint handling is managed?
    a. What happens after the complaint is handled?
    b. What happens to the knowledge in the form of feedback? How is it worked upon, in what way?

9. According to you, what are the drawbacks or benefits of the current system? Where do you think it's lacking?
    a. What limitations and opportunities do you see in the process
10. According to you, what are some of the most important KPIs you need to focus on?
11. According to you, how can the standard operating procedure (SOP) of the complaint system be improved? What inputs do you think can be useful?

Appendix X1: Semi-Structured Interview Complaint Coordinator Template

Semi-Structured interview template

Hello and thanks for taking part in this semi-structured interview as a part of our thesis and process improvement project! We are two students from Chalmers University of Technology, currently enrolled in the Quality and Operations Management program. As part of our Master Thesis, we are assisting Company X in further developing the current state of the complaint handling process. The thesis aims to make connections between theory and the operational activities at Company X, so that sustainable improvements can be identified.

As we need to understand the experience and perspective of those actors involved in the process, we aim to gain an audience with Originators, Complaint Coordinators, Agents, Sales representatives, as well as Process owners. You have been identified as someone that could bring insights to one or several of these roles and would thus provide us with invaluable qualitative data that will play a large part of our analysis, should you decide to take part. Below you can find a list of important information as well as the questions that we have prepared for us to discuss.

Information to be understood by the interviewee:

a. You will be anonymous.

b. Company name will be anonymous in the final publishing.

c. We will interview several other actors within the complaint handling process.

d. Recording will be done only after Interviewees' consent.

e. Qualitative data collected from these interviews will be used for analysis purposes and can be presented in the final thesis report as supporting evidence.

f. At any point the interviewee can decide to withdraw from participation, before/during/after the interview has been conducted. All information of the participation will then be redacted from the study.

g. After the completion of the analysis and thesis report, any interview recordings or documentation will be deleted.

Interview Questions

1. How long have you been working with the system?
2. How do you view your role as Complaint Coordinator and the responsibilities that come with it?
3. How do you prioritise the complaints and distribute it among the agents?
4. What role do you think templates and instructional videos should have in the process?
    a. If any additional ones other than those currently provided by the system, which?
    b. What steps are taken in case an agent does not have the right background about the templates, for e.g. the Ishikawa or the 5W2H?
    c. Do you think instructional videos are enough to convey workmethods for old and new agents alike?
5. Where do you encounter frustration (pain points) in your complaint related work?
6. How would you describe your complaint handling related workload?

7. Which other actors in or around the complaint handling process do you interact with?
    a. What are your thoughts on transparency with the originator? How often should there be communication between the agent and the originator to share updates about the complaint progress?
8. What role do you have in the onboarding of new agents?
    a. How easy or difficult is it for you to go through the onboarding process when a new agent joins the team?
    b. What role do you want to have?
9. What are your thoughts on communication, formal or informal communication and knowledge sharing?
    a. What do you think of a common language, in this case English, being enforced for everyone to follow so that it is easy to communicate and share?
10. Have you received/given any information and training on how to perform tasks or surrounding elements? What did your Onboarding look like?
    a. What's your current view on the training within the team/agents?
        i. How often is this provided/attended?
        ii. How often would you like them to occur?
        iii. What role would you want to have in these sessions?
11. How easy is it for you to raise feedback, or influence how complaint handling is managed?
    a. What happens to the knowledge in the form of feedback? How is it worked upon, in what way?
    b. How do you handle complaints or feedback points raised to you?
        i. What happens with the feedback?
12. What's your view on having a joint meeting with all the agents to share feedback and learnings or updates within the team?
13. According to you, what are the drawbacks or benefits of the current system? Where do you think it's lacking?
    a. What limitations do you see in the process
    b. What opportunities do you see in the process
14. According to you, how can the standard operating procedure (SOP) of the complaint system be improved? What inputs do you think can be useful?

Appendix X1: Semi-Structured Interview Process Owner Template

Semi-Structured interview template

Hello and thanks for taking part in this semi-structured interview as a part of our thesis and process improvement project! We are two students from Chalmers University of Technology, currently enrolled in the Quality and Operations Management program. As part of our Master Thesis, we are assisting Company Xin further developing the current state of the complaint handling process. The thesis aims to make connections between theory and the operational activities at Company X, so that sustainable improvements can be identified.

As we need to understand the experience and perspective of those actors involved in the process, we aim to gain an audience with Originators, Complaint Coordinators, Agents, Sales representatives, as well as Process owners. You have been identified as someone that could bring insights to one or several of these roles and would thus provide us with invaluable qualitative data that will play a large part of our analysis, should you decide to take part. Below you can find a list of important information as well as the questions that we have prepared for us to discuss.

Information to be understood by the interviewee:

a. You will be anonymous.

b. Company name will be anonymous in the final publishing.

c. We will interview several other actors within the complaint handling process.

d. Recording will be done only after Interviewees' consent.

e. Qualitative data collected from these interviews will be used for analysis purposes and can be presented in the final thesis report as supporting evidence.

f. At any point the interviewee can decide to withdraw from participation, before/during/after the interview has been conducted. All information of the participation will then be redacted from the study.

g. After the completion of the analysis and thesis report, any interview recordings or documentation will be deleted.

Interview Questions

1. How long have you been working with the system?
2. How do you view your role as Process owner and the responsibilities that come with it?
3. What are your long-term goals for the process and people within it?
4. To what extent do you use structures for process development?
5. What role do you think templates and instructional videos should have in the process?
    a. If any additional ones other than those currently provided by the system, which?
    b. What steps are taken in case an agent does not have the right background about the templates, for e.g. the Ishikawa or the 5W2H?
    c. Do you think instructional videos are enough to convey workmethods for old and new agents alike?
6. Where do you encounter frustration (pain points) in your complaint process related work?
7. How do you handle resistors

8. Which other actors in or around the complaint handling process do you interact with?
    a. Interacts with everyone in the complaints handling process
    b. What are your thoughts on transparency with the originator? How often should there be communication between the agent and the originator to share updates about the complaint progress?
9. What role do you have in the onboarding of new agents?
    a. How easy or difficult is it for you to go through the onboarding process when a new agent joins the team?
    b. What role do you want to have?
10. What are your thoughts on communication, formal or informal communication and knowledge sharing?
    a. What do you think of a common language, in this case English, being enforced for everyone to follow so that it is easy to communicate and share?
11. Have you provided any information and training on how to perform tasks or surrounding topics?
    a. What's your current view on the training within the team/agents?
        i. How often is it provided/attended?
        ii. How often would you like them to occur and to what scale?
        iii. What role would you want to have in these sessions?
12. How easy is it for you to raise and spread feedback or improvements in the process?
    a. How are the process development ideas put forward or implemented? Are they more top down, from top management or bottom up, coming from the agents?
    b. What happens to the knowledge in the form of feedback?
    c. How do you handle complaints or feedback points raised to you?
13. What's your view on having a joint meeting with all the agents to share feedback and learnings or updates within the team?
    a. Internal to PQA
    b. Cross functional with departments such as agents from SQA, IDC and ADC?
    c. What are your thoughts on team building activities?
        i. Do you perceive a geographically split team as an issue?
        ii. Should there be more joint workshops and team building activities involving everyone?
14. According to you, what are the drawbacks or benefits of the current system? Where do you think it's lacking?
    a. What limitations do you see in the process
    b. What opportunities do you see in the process
15. According to you, how can the standard operating procedure (SOP) of the complaint system be improved? What inputs do you think can be useful?

Appendix Y: Semi-Structured Interview Result Summaries

Experience	Below 3 years in current system
Role	Common points of Agents
Pain Points	1. Parent and Child tickets a. Definition b. How to work with them 2. Freshdesk a. How to use it b. High administrative workload 3. Cultural differences a. Complicates collaboration (language barriers) b. Different preferred work methods 4. Onboarding a. Not structured b. Not formally welcoming 5. Process a. Changing process creates “fog of war” for agents b. Skill and knowledge is uneven in the PQA team c. Agents handle issues that should be handled by other departments
Complaint Handling related Workload	High and dynamic workload in PQA & SQA
Ease of raising feedback	Feedback appears only through non formal channels and therefore appears circumstantial, department meetings must be self-organised
Role interactions	Cross functional interactions appear to be the norm
Frequency of training and information meetings	No one has had training sessions related to the system outside of onboarding or introduction of the system
Wishes/Opportunities	1. Wishes a. More internal and external collaboration and communication, both to the teams 2. Opportunities a. Onboarding improvements b. Well defined process descriptions and expectations
Limitations	Unclear directives, work methods, standards, and how to communicate and share experiences
Other comments	1. The view of Freshdesk appear to be very mixed 2. View of what role templates should have been mixed

Experience	1 Year
Role	PQA Agent
Pain Points	1. Time Constraints and Workload Limit Problem Solving and Root Cause Analysis 2. Limited understanding of template tools 3. Dislikes Parent and Child ticket split

	a. Creates additional workload 4. Recurring issues create a negative impact on company image
Complaint Handling related Workload	1. High workload 2. Too high to allow for effective work to be conducted 3. Work is Reactive not Proactive 4. Complex CH Process with many steps
Ease of raising feedback	1. Easy to discuss issues with Complaint Coordinator (close proximity geographically) 2. Difficult to discuss with process owner (not close proximity geographically)
Role interactions	CC, SQA Agents, Production Managers
Frequency of training and information meetings	No training or information sessions past initial onboarding
Wishes/Opportunities	1. Wishes to discuss everyday tasks with other agents 2. Wishes for group-based discussions and forums where all agents can discuss problem solving and mitigate barriers for collaboration 3. Opportunities to discuss process matters with process owner and Complaint Coordinator.
Limitations	1. Time 2. Feedback Cycles 3. Geographical split team
Other comments	1. Confusion around Reply, Note and Forward buttons. 2. Would like to know how made comments and feedback is used

Experience	2+ Years
Role	PQA Agent
Pain Points	1. High Administrative work (Double work Excel/freshmate) 2. Time consuming methods for short/simple work 3. Current changes and growth inflict confusion and “fog of war” 4. Knowledge and skill distribution is uneven in the team 5. Difficult to close complaints 6. Agents manage issues that other departments should be responsible for
Complaint Handling related Workload	1. Too high - Overloaded
Ease of raising feedback	1. Was part of the task group to design freshmate and gave feedback through there previously 2. Process owner and complaint coordinator welcomes feedback 3. Feedback is informal and not documented a. Can be lost
Role interactions	R&D, Production, SQA, Complaint coordinator, Process owner, IDC
Frequency of training and information meetings	Have had training on APQP & PPAP last year, however not complaint related

Wishes/Opportunities	1. Wishes
	  a. Wishes for Excel spreadsheets to be connected to freshmate
	  b. Frequent occasions for collective trainings and workshops
	  i. To even the skill and knowledge gap in the team
	  ii. Time for these occasions is not a constraint
	2. Opportunities
	  a. Define and connect process needs more
	  b. Have more standardised documents available
	  c. Formal meetings to spread ideas, learnings and document for future references
	  d. Reoccurring feedback meetings

Limitations	1. freshmate is not customisable to the user/agents 2. freshmate cannibalises value adding time
Other comments	1. Works mostly by mail 2. Uses Templates in a flexible manner 3. Sees reasons for requiring 5W2H to always be necessary 4. Appreciates effort from managers to connect the team and foster an international and collaborative environment

Experience	~18 Months
Role	SQA Agent

Pain Points	1. Criteria for Child/Parent ticket is not clear
	  a. The Process is perceived to constantly evolve making past instructions redundant
	2. Observes sub-optimal utilisation of skill
	3. Cultural Differences between the Polish and Swedish teams
	  a. Swedish office takes more initiative and questions work methods more
	  b. Polish office follows process steps more closely and does not question work methods
	4. Polish Finance has a different view on how to interact with Supplier and Customers (money is prioritised over quality of service and product)
	5. Communication in freshmate is in Polish
	  a. Makes international follow-up more difficult

Complaint Handling related Workload	1. Huge Backlog 2. PQA tasks have been put on SQA
Ease of raising feedback	1. Relatively easy 2. Mail based or direct channels (close proximity to process owner)
Role interactions	PQA and Suppliers
Frequency of training and information meetings	No training or information meetings have been had
Wishes/Opportunities	1. Wishes to have feedback sessions 2. Sees large opportunities in greater horizontal collaboration, both within and outside of the nearest team a. Could lead to better and more agreed upon definitions 3. Sees an opportunity where agents could meet to share,

	collaborate, and highlight stuff.
Limitations	1. Departments do not understand each other's prioritisations, work methods, and goals at the moment (strong Silos) 2. Does not know how to prioritise cases 3. freshmate, not optimised for purpose
Other comments	1. Wants SQA work to become more focused on Supplier related issues rather than production 2. Worried about onboarding process for new SQA Agents 3. Does not like the given claims handling system (freshmate) and has created an own system to work with 4. Wants quality of outcome to trump lead time in terms of KPIs

Experience	3+ Years
Role	IDC Agent
Pain Points	1. All complaints are high priority and important. Makes prioritising tasks more difficult. 2. Response times from suppliers 3. No priority values for sales orders 4. Agents are changed during open cases.
Complaint Handling related Workload	1. Very Low 2. Quick lead times 3. Large variation on incoming complaints
Ease of raising feedback	1. Feels as if feedback will always make someone unhappy 2. Welcomes feedback from colleagues
Role interactions	PQA, SQA, Technical Agents, Suppliers, Warehouses, Customer Service
Frequency of training and information meetings	No meetings or trainings beyond an initial written instructions being provided three years ago
Wishes/Opportunities	1. Wishes for easier access to technical drawings in freshmate 2. Wishes rule on always needing to take pictures of problem 3. Opportunity to create stronger definitions for Child/Parent tickets 4. Opportunity to implement rules/standards against changing Agents during open cases
Limitations	1. Believes that agents cannot make as sound decisions as supervisors since they experience higher turnovers
Other comments	1. Likes freshmate a. Illuminates improvement points well b. Easy to filter c. Communication is perfect as long as item number is known d. Likes that it notifies/updates by mail

Experience	2 Months
Role	PQA Agent
Pain Points	1. Company X had not prepared for employment start and

	affected their ability to connect with manager and his team 2. Process is slowed down with SQA overwhelmed 3. freshmate can be difficult to navigate with multiple claims around. 4. No clear onboarding process plan and time duration.
Complaint Handling related Workload	High for someone new
Ease of raising feedback	1. Easy with those located in the same office 2. If the team wishes to convey feedback vertically, they have no formal channels and have to organise themselves and their own group meetings.
Role interactions	Complaint Coordinator, Production, Warehouse, SQA, Product development, Logistics, Customer service and care.
Frequency of training and information meetings	Training received during onboarding and guidance, when necessary, thereafter.
Wishes/Opportunities	1. 30-minute meeting where different cases are brought up and discussed, as a way to learn and work together 2. Wishes for implementation of root cause analysis to become more flexible 3. Wishes for responsibilities and procedure expectations to be more clear 4. There is an opportunity to make onboarding better.
Limitations	Do not know what happens to any feedback provided
Other comments	1. Can see it a good idea to have closer collaboration with the SQA team, at least one-on-one sessions 2. Coordination meetings are not necessary thanks to Marzena 3. Doesn't like tools 4. Thinks training is unnecessary (since they are simple → But for newcomers it could be useful) 5. Likes freshmate to some extent 6. Likes the idea of small meetings covering case examples

Experience	9 Years
Role	ADC Agent
Pain Points	1. Lack of collaboration and communication with IDC and during complaint handling 2. Non clear indication and communication of problems 3. ADC is forgotten, forms and documents are in Polish - "Has to reinvent the wheel" 4. High employee turnover 5. No record of complaint case solution and result 6. ADC feels like they are newcomer to the used systems as a consequence of lack of training 7. Case creation is not very well optimised for ADC and American customers (for example that everything is reported as a component)
Complaint Handling related Workload	Low and dynamic
Ease of raising feedback	1. Gets involved only after changes has been made 2. Mixture of formal and informal feedback

Role interactions	IDC, Complaint Coordinator, Process owner, Customer Relations Management, Purchasing
Frequency of training and information meetings	No training, only the initial one when freshmate was implemented
Wishes/Opportunities	1. Wishes a. Complaint record b. For more communication to occur across the departments c. For freshmate to be more suited to ADC or to provide ADC with additional options within the system 2. Opportunities a. Have freshmate present more clearly what feedback is provided to the originator
Limitations	ADC is not kept in the loop
Other comments	Likes the idea of freshmate and what it enables, but the output and input need to be further refined

Experience	6 months
Role	Complaint Coordinator
Pain Points	1. Keeping data clean can be difficult 2. Agents sometimes lack understanding in importance of data 3. Difficult to handle resistors 4. Constant changes create more resistance
Complaint Handling related Workload	1. Main activity 2. Dynamic 3. Reasonable workload and rarely overloaded
Ease of raising feedback	1. Easy to nearest manager as they have frequent dialog 2. Feels that the lack of experience in the system, coupled with a constantly changing environment prevents giving feedback 3. Only accepts constructive feedback from others
Role interactions	Agents, Originator, Process owner
Frequency of training and information meetings	1. Training sessions to be held at least twice a year a. Focused on how to use freshmate 2. Will be responsible for arranging and hosting the sessions
Wishes/Opportunities	1. Wishes a. Wishes for the options in freshmate to hide and show certain points to certain users 2. Opportunities a. Can make the definitions and process flows more clearer b. Can mitigate unnecessary communication
Limitations	Complicated and changing system
Other comments	1. “Universal” agents have been pushed for, but in reality, they are specialised.

Experience	3 years → 2 years as an Agent, 1 as a process developer

Role	1. Process owner, Process Developer 2. Develop and manage the OMS 3. Teach the entire org., about the system 4. Update the process from time to time and invite other dept., into the process
Pain Points	1. Lead Time, lack of resources at SQA and PQA is affected by this 2. Establish and define rules for the process which are not in place currently. 3. Hard to communicate changes in a clear way to the team 4. Difficult to align the organisation on the defined rules 5. Lack a specific way or strategy to handle resistors 6. People need to be involved but cannot always be informed and given with answers 7. Team building with different cultures involved 8. Reduce the number of complaints
Complaint Handling related Workload	
Ease of raising feedback	1. Easy to raise feedback upwards. 2. Need to have a feedback loop 3. Currently no action plan in place for feedback 4. Filter out opportunities for improvement both internally and externally 5. Joint feedback once per month, and cross functional feedback meetings with other dept. SQA, Log, ADC, IDC 6. More formal means of communication and feedback and document this feedback like MOM
Role interactions	1. Interacting within PQA and outside of PQA as well. 2. More engagement between originator and agent based on the SLA 3. More role clarity is needed, who should perform what tasks as part of the OMS. 4. Build knowledge in PQA,
Frequency of training and information meetings	1. More group trainings, big trainings for new employees 2. Twice per year - Frequency of training 3. Complaint Coordinator could lead the trainings - recurring sessions 4. More team building activities with everyone involved 5. Formal feedback → should be done every month
Wishes/Opportunities	1. Learn by doing, learn from failures 2. Checklist of guidelines and documentation which needs to be provided 3. More 1 on 1 trainings with new employees about responsibilities during onboarding 4. Aggregated list of learning documents
Limitations	No limitations per say, optimistic about the process.
Other comments	

Appendix Z: Qualitative Results Category Explanations

Category	Explanation
Method/freshmate	Method/freshmate covers comments on how work is conducted both at individual and process level, and involves comments made on the role of the process software “freshmate” being recently employed into the system.
Training/Teamwork	Training/Teamwork relates to comments made on how skill, capabilities, as well as how team collaboration could be improved.
Feedback	Feedback connects to comments made on how the internal feedback structure for process improvement looks like and what wishes and opportunities there are for future improvements.
Workload	Workload shows comments made on the experienced workload of the interviewee and is evaluated by themselves and thus subjective to the person.
Change Inflicted Pain Points	Change inflicted pain points cover comments made specifically targeting frustrations or issues created by a changing process in itself.
Cross-functional collaboration	Cross-functional collaboration relates to comments made on the level of collaboration that occurs between different departments and actors within the organisation and in supporting processes.
Knowledge Distribution	Knowledge distribution is connected to comments covering how the knowledge and skill capabilities in the process are distributed.
Parent/Child Pain Point	Parent/Child Pain Point is a specific method employed in the current work procedure employed in the current process and is thus a targeted method statistic and has been extracted and excluded from the Method/freshmate category to allow for clearer results.
Onboarding Pain Points or Concerns	Onboarding pain points or concerns help show comments made on the current onboarding process.
Language Differences	Language differences highlight comments made on the language and culture differences experienced by the process.
Administrative Workload	Administrative workload relates to workload that is only relating to reporting data and progress within the system. Note that these comments are presented in this result separately from the Workload category.
Demotivation	Demotivation represents comments made on demotivation as a pain point and barrier to the process.

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