



Improving the quality management system in the manufacturing industry

Case Company K

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Abstract

Quality management is a significant factor in the modern business industry and is widely considered an organizational goal for many companies. Doing research at the operation level to enhance the quality of the final product is a priority strategy to attract more customers and gain competitive advantages

Three main research questions: How should a company continuously improve the quality of its production? How to apply ISO 9001:2015 in the current quality management system? Should we have a better communication system in the company for quality management? The author will utilize a combination of qualitative and quantitative research methods, besides with case study to analyze Company K's current issues and propose solutions. The theoretical parts were written based on all the studies and research from articles, books about Quality management systems, ISO 9001:2015, and Sharepoint Online for data communication.

The implementation began with the proposal to change the current quality management process and start to use Sharepoint to communicate with other departments. After that, the author will conduct a survey and interview different people from different teams to evaluate the new proposal solution.

Keywords/tags (subjects)

Quality management system, ISO 9001:2015, PDCA, Sharepoint

Miscellaneous (Confidential information)

Confidential information

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KPI: Key Performance Indicator

IS: Information System

TQM: Total Quality Management

R&D: Research and Development

ERP: Enterprise Resource Planning

EDI: Electronic Data Interchange

CRM: Customer Relationship Management

QMS: Quality Management System

PDCA: Plan -Do – Check – Act

ICA: Input Quality Control

1 Introduction

Quality management is a significant factor in the modern business industry and is widely considered an organizational goal for many companies. Doing research at the operation level to enhance the quality of the final product is a priority strategy to attract more customers and gain competitive advantages. Many people believe that quality can affect an organization's performance (Lakal L.,2009, 637-645). There are many different approaches to define what is quality management throughout human history. Each writer and researcher tried to define it from different angles of quality management. (Angel R. & Frank D. & Barrie G.,1998,6-10). Quality was defined by some researchers from two perspectives: manufacturing and marketing. There are two concepts from the manufacturing side. The first is design quality, which focuses on product features that meet the needs of customers (Fine, C.H.,1986, 1301-1315). The second is quality of conformance, which focuses on whether the organization meets the design specifications, as previously mentioned. In this study, the author will focus on the quality management system, processes, principles, and tools from a manufacturing perspective. We will go deep down into ISO 9001:2015 requirements in the quality management system and quality management process; PDCA cycle quality assurance methodology; get to know about IT system with Sharepoint solution to store the quality document as well as enhance the communication process in the quality process.

1.1 Case company: K

This thesis aims to review the current quality management system and create a new communication process with a Sharepoint IT solution and strategy in the quality management department.

The author is working as a quality inspector at Company K which has a factory in Vietnam. The company has a headquarter in China. It was founded in 1982 in Nantong, Jiangsu Province.

Company K is one of the biggest and most reputable furniture manufacturers in the world, a well-known home furnishings company in China. With more than 6000 brand stores and 120 wholesale customers, Company K's products are in millions of homes worldwide.

Leading the way in design and innovation, the company offers luxury comfort and practicality at a remarkable price. For every space in the house, Company K creates, develops, manufactures, and

promotes fashionable, high-quality furniture. The company makes it possible to live a comfortable, healthy, and environmentally friendly lifestyle. Company K operates five manufacturing plants in China, located in Xiasha, Shenzhou, Jiangdong, Jiaying, and Huanggang. To diversify its manufacturing base and boost output, Company K has constructed factories in Mexico and Vietnam.

1.2 Research questions

The research questions of this study are as follows:

- How should a company continuously improve the quality of its production?
- How to apply ISO 9001:2015 in the current quality management system?
- Should we have a better communication system in the company for quality management?

Research questions	How did you do to collect the data	What kinds of information needed
How should a company continuously improve the quality of its production?	Ask other colleagues who had more experiences Collect the current document about quality in the company database	Information about the current quality process and the current issue in the quality team About the bottleneck of the quality complaints-solving process
How to apply ISO 9001:2015 in the current quality management system?	Collect all the quality standards from different teams (production, finalization, good receipt team...) Getting all the tools and manual instructions the company is using for the	Quality standards for different kinds of raw materials Responsibility of each team in the quality management process

	quality management process	
Should we have a better communication system in the company for quality management?	Asking other colleagues how they communicate about quality management topics	Current communication system and process of how they handle quality cases on the daily basis

1.3 Scope and limits of the thesis

1.3.1 Scope

In company K, the author got a project from the quality department manager to improve the current quality management process of the company. The author spent the first month learning a lot about the company's quality management process. After understanding the process and collaborating with other team members who have been working long-term in the quality team, the author found many issues in the current quality management processes like there is no common agreement between the different teams, sometimes the quality team wants to reject some product, but production did not agree. The cross-functional cooperation is not good.

With the support from other team members and the manager, the author decided to use this thesis to improve the current quality management system of the company K. Thus, the first step will be defining all the current issues and doing research to fix it.

1.3.2 Limitation

The author is working at Company K which is responsible mainly for production and transportation. Company K's headquarter in China takes care of the R&D department and the new product introduction (NPI) project. Therefore, the author will not focus on the quality planning process for

the new product development. Some quality metrics and quality checklists are also made by the R&D department will be also out of scope in this thesis.

All the changes which were proposed by the author will be not implemented because the company's process and structures are heavily dependent on the mother company in China. The changes will need approval and it takes a lot of time.

All literature and theories about quality management in this study will emphasize more on the manufacturing segment since Company K is a Furniture manufacturing company.

1.3.3 Reliability

The data in this thesis was collected in 2 stages. In the first stage, the author collects the data to understand what is the current quality management process in company K. Because the author was working in Company K while writing this thesis, the data or documents about the quality management process are highly reliable.

In the second stage, the author was doing qualitative and quantitative research as interviews and surveys and gets data from it. To ensure the reliability of the data, the interview was done with the author's colleagues who have a lot of experience and knowledge about the quality management process only. The survey was also sent to the relevant group of people who are working with quality issues daily.

2 Research methodology

At various stages of the study, this thesis was completed using a combination of quantitative, qualitative, and case study methods. This thesis was completed at a specific organization with a trustworthy database that is easily accessible. The author is working in a team with many relevant stakeholders, and improving the quality system can be evaluated by a qualitative method such as interviewing with the production team and sale team to ask about their feeling and satisfaction with a new quality management system set-up. The quantitative method can be utilized as well to calculate how fast the communication is and the team's performance.

2.1 Quantitative method

The definition and application range was initially taken into consideration in order to choose which approach is appropriate for the study. "Quantitative research is understanding phenomena by gathering numerical data that are evaluated using mathematically based approaches (in particular statistics)," claim Aliaga and Gunderson (2002, 1).

The author can utilize statistically based approaches to analyze the data because the database for the qualitative research must be in numerical form. Because the author was an intern for the company, the trustworthy database in this instance is constantly accessible. A quantitative approach will be prioritized to analyze the communication efficiency in the quality department

2.1.1 Survey

Survey research is considered an important quantitative method. The data required for the survey method are sent and collected from different groups of people. (Glasow, 2005). The advantage of a survey can collect a huge amount of data from the population. There are 2 groups of the survey: Sample survey which means the data will be collected from a certain fraction of the unit population and census survey which means the data will be collected from all units of the population. (Nayeem, 2017)

In this study, the author tries to improve the quality management process so only a certain amount of people in the company will be affected. The sample survey is chosen here. The author needs to define the departments that the study's topic will affect and define how many people from those departments will be a survey.

2.2 Qualitative method

Qualitative research has a wide range of definitions from many sources. Qualitative research is a situated activity that places the observer in the world, according to Denzin and Lincoln (2005). It consists of a collection of interpretive, tangible actions that bring the outside world into focus. The world is changed by these methods. They transform the world into a collection of representations, which may include memos to oneself, field notes, interviews, dialogues, and images. At this level,

qualitative research adopts a naturalistic, interpretive perspective on the world. Accordingly, qualitative researchers look at objects in their natural environments while attempting to interpret or make sense of events considering the meanings that different people assign to various phenomena.

In this study, the author will mainly conduct this method to measure the satisfaction from customers toward the company's quality services; it also helps to identify the convenience and efficiency of quality processes which are acknowledged by stakeholders

2.2.1 Type of Interviews

The interview is considered an important qualitative research method using open-ended questions to engage respondents in conversation and extract information on a subject. Interviews are any face-to-face exchanges between two or more people that have a clear objective. (Nick, 2009,5)

There are 3 different types of Interviews in Research: Structured interviews, Semi-Structured Interviews, Unstructured interviews.

Structured interviews: Structured interviews are described as research methods with very limited or nonexistent scope for pushing participants to gather and assess information. This interview's questions are pre-planned based on the specific information that is needed. This can help to collect uniform data with less time and skills; however, this method can reduce the ideas and feedback from participants. (Nick, 2009, 5)

Unstructured interviews: also known as in-depth interviews are typically characterized as discussions performed to gather information for the research study. These interviews feature the fewest questions since they resemble a typical conversation with a central theme. The fundamental goal of most researchers who use unstructured interviews is to establish a connection with the participants and get a completely honest response from them. This type of interview can be easy to implement within an informal context. The participants can be able to ask a question to clarify more about the interviewing question, so, they can have a better answer. The problem with this type of interview is that it is not easy to keep the interview topic on track. The data which we can collect from the interview would be analyzed again to get the desired result. (Nick, 2009, 7)

Semi-Structured interviews: Similar to structured interviews in that the themes or questions to be asked are arranged in advance, semi-structured interviews are based on open-ended inquiries as opposed to closed ones. This method offers the researcher a lot of possibilities to interact with participants along with maintaining the basic interview goal/target. It is flexible for the researcher to implement the interview question in whatever format they want. The participants can provide valuable feedback to a researcher with the semi-structured setup without any mandatory yes/no questions. There is also a downside of this method, the researcher needs to spend more time analyzing the result because comparing the different interview answers without strict guidelines will be time-consuming. (Nick, 2009, 6)

2.2.2 Interview Methods

There are several methods to conduct a research interview

Individual interview: This method is conducted when the interview topic required a lot of detailed information from the participants. There are some sensitive topics which the detailed information the participant may not be willing to share in public or in a group. The advantage of this method is that the researcher can get different independent answers from participants. For instance, if the interview is in a group, the answer may be affected by others. (Nick, 2009, 8)

Group interview: This method is conducted when the researcher does not have sufficient knowledge about that topic and need a group of people to share wisdom about that topic. When interviewing in a group, the researcher can get a consensus from different people, so the different perspectives on the topic can be covered. (Nick, 2009, 9)

Conduct the interview, there are 2 main ways:

Face-to-face interview: The researcher and participant will meet up together and conduct the interview. It is a flexible method where the participant can ask any questions about the interview question and the researcher can clarify them. Therefore, the quality of the interview is significantly high. This method is good for discussing sensitive information. (Nick, 2009, 9)

Telephone or online interview: This method becomes more popular nowadays when remote work is everywhere. It is an efficient method to save time and money but still guarantee the reliability of the interview result. The only disadvantage of this method is that there is less connection between the researcher and participant than face-to-face. (Nick, 2009, 9)

After understanding different types and methods of interview, the author decided to go with a semi-structured interview where the participant can freely express their ideas according to the prepared interview questions. The reason is that the author did not have as much knowledge and experience compared to other colleagues and managers, so the author wanted to get as much feedback and ideas as possible.

The interview in this study will be conducted in both groups and individuals by using face-to-face and online methods. Because there are some author's colleagues are in China, it is more convenient to use the online method (virtual method). The author will present the idea to a small group of people and conduct the interview directly there in the group as well to get a consensus in the group.

2.2.3 Case study method

Case study methodologies have been regarded as an effective technique in several social scientific studies (Johnson, 2006, 393-412). Although there are still many contentious viewpoints regarding the method of the data collection strategy used in a case study.

On the other hand, Bill Gillham (2000) defined the case study method into two different sections. The word "case" describes a unit of human activity that is a part of reality and can study and understood in a certain situation. The word "study" is a thorough investigation of the case that looks for a variety of various types of evidence to address all relevant research issues.

The role of the case study methodology in solving business research is significant. The strategy can be used to analyze and solve a practical problem, after that we can build and test a business theory as well. However, not all case study methodology can be reliable and trustworthy, it needs to be implemented with a scientific approach (Jan, D.,2008,1).

The author will use a case study as the main research method to solve the quality management issue in the author's current company.

3 Literature review

In this section, we will go through all the theoretical parts to answer the research questions. To answer the first question "How should a company continuously improve the quality of its production?", we need to understand what quality is in advance.

3.1 Quality Definition

There are also several approaches to defining quality (Schneider & al., 2004, 10). Garvin (1984) included 5 different approaches to quality: product-based, user-based, global or transcendent, manufacturing-based, and value-based approaches.

The global approach to quality is kind of general. To be simple, if no one claims it is bad quality, then it has good quality. Companies frequently find it challenging to assess, analyze, and be subjective. Customers typically characterize quality as "good enough" or as something that "gets the job done." (Erick C., 2014,3-5)

The product-based approach to quality relates to production's attributes. So, it is clear to accept that the phone with a camera function has higher quality than the one without it. The product with more attributes and functionalities that customer desire to have will have a better quality (Erick C., 2014,3-5)

The user-based approach is related to attributes and features that users define or consider as important. It was defined quality as "fitness for use" (Erick C., 2014,3-5). We can see that different customers can use products in different ways, so high-quality products need to have features that fit most of the customer's satisfaction. Schneider & al., (2004) approached this definition from the service point of view as well, because service is not tangible. This approach can give us a better view of the differences between product-based and user-based approaches

The manufacturing-based approach is about the organization ensuring it meets engineering specifications to meet quality standards. Predetermined specifications are used to design and manufacture products. Quality control techniques help to detect deviations from specifications. If these set of requirements are not met, then the product will be considered non-compliant or defective and will be not delivered to customers. Crosby, P. B. (1979) defined this concept as “conformance to requirements”.

The value-based approach is about defining the attributes of market-driving quality. There are mainly 8 different attributes (Garvin, 1984,25–43)



Figure 1. 8 different attributes in the value-based approach (Garvin, 1984,25–43)

These 8 different attributes (Figure 1) are:

1. Performance

It refers to the operating characteristics of the product. For example, how the air-conditioner can cool down the house’s temperature, how the car accelerates on the highway

2. Features

These refer to some additional features that customers may want to have. Like extra food and drink on the first-class flight (Erick C., 2014,3-5)

3. Reliability

It refers to the probability of the failure of the product. For example, how many times does the phone have issues? We can see this attribute clearly with the phone brand. Apple phone is considered more reliable than the Chinese phone.

4. Conformance

It refers to how the final product can meet the pre-established standards. We can see this attribute inside the manufacturing process like defects in the quality gate, we can also see it outside like how many times the product needs a repair under a warranty (Erick C., 2014,3-5)

5. Durability

It is about the amount to use the product until it was broken down and needs repair. Like how many hours can the light bulb operate?

6. Serviceability

It is about how good the repair or customer services are

7. The aesthetic

This attribute is described as how a product looks, feels, sounds, tastes, or smells (Erick C., 2014,3-5)

8. Perceived quality

It reflects how customers feel when using the product. This attribute can be somehow similar to the durability or reliability attribute, because if the product is not lasting long then customers may feel bad and dissatisfied

After going through the definition of quality, we can acknowledge that the value-based approach is much wider and include all other approaches. For example, the product-based approach includes the concepts of performance, features, and durability; the user-based approach includes serviceability, aesthetics, and perceived quality; the manufacturing-based approach with Six sigma is about Conformance and Reliability.

3.2 Quality management

After understanding the quality definition, the study will go further to research what quality management and what suitable quality management system the company should follow to help the author answer research question 1.

3.2.1 Quality management system

According to Shere (2009), he defined quality management system, in general, is the combination of all management functions to follow and implement the company quality policy. Dean and Bowen (1994) think similarly, they said that Quality Management (QM) is considered a “philosophy or an approach to management” made up of a “set of mutually reinforcing principles, each of which is supported by a set of practices and techniques”.

In a more detailed definition, the quality management system is a structured system that documents processes, methods, and responsibilities for accomplishing quality policies and objectives. It is a set of rules, processes, and procedures that are necessary for planning and execution in the core business of a corporation. It gives you the information, tools, and resources you need to properly comprehend what quality management systems are and how they can help you enhance your company’s day-to-day operation (Itay A., 2017,18-30)

Quality management is one of the most important research topics in operations management. Today, quality management is an organizational goal that is widely accepted by many companies (Nair, 2006)

Defining the scope of the quality management system is a critical task for most corporations. Itay Abuhav 2017 in his book mentioned that the QMS scope refers to the areas, locations, products, or lines of products (or services), and processes or activities of the organization that is relevant to and will be influenced by the QMS. In other words, the QMS's domain is defined by its scope. Knowing the scope will help the company to have a suitable quality management system in each area and process.

To gain the benefits of a quality management system, a company must ensure that both management and employees are involved throughout the process. The management's ongoing interest and commitment are required for successful implementation. Management not only provides a vision that reflects the service and its quality, but it also provides personal input on how to make the service as efficient as possible. Furthermore, management encourages employees to perform in a manner that reflects the highest possible level of service quality. (Cheng & al. ,2007, 65).

Many companies try to apply the quality management system to their operation process with the hope to gain more competitive advantages, but then realize it is not that easy and the implementation of quality management needs to be clear and continuous. In the book of John S. Oakland (2014), he mentioned about quality management system model which interacts with all the processes in the organization.

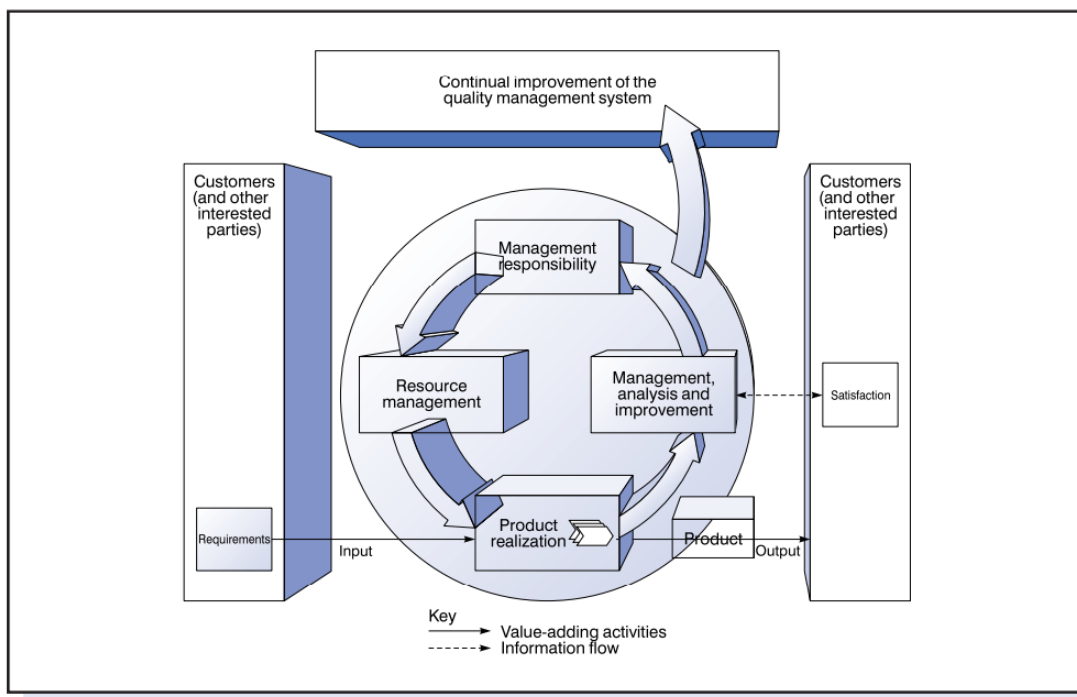


Figure 2. Model of the quality management system (John S. Oakland,2014, 246)

From the above model (Figure 2), the input is aiming to have the customer's requirements and the output is the customer's satisfaction. We all know that customers' requirements are changing significantly every day. It is important to implement the customer interview and survey often to catch up with what customers want to feel when using the final product. (John S. Oakland,2014,3-10)

There are 4 main blocks in the model

Product realization: It means that the organization itself can now review again about the product after getting feedback from customers (John S. Oakland,2014, 199-205). For example, the chair leather is not so comfortable, the phone's battery is run out so fast...

Management analysis and improvement: After the product realization step, the company will do the analysis and identify areas, functions, and processes to change and improve

Management responsibility: It means the quality management strategy and mindset need to be from chief executive to mid-senior managers to responsible persons. It needs commitment from all members of the organization. (John S. Oakland,2014, 33-34)

Resource management: The company should decide on and supply the resources required to set up and enhance the quality management system, including all projects and processes. The general infrastructure, which includes buildings, machinery, any auxiliary services, and the working environment, must be provided and maintained in order to ensure adherence to the product or service standards. (John S. Oakland,2014, 253)

3.2.2 Quality management process

After we understand what is the quality management system, there is a new incoming question what is the process to apply the quality management system and continue to improve the quality management system in research question 1?

Juran (1998) stated that there are 3 main elements to implementing the quality management system, referred to as quality control (QC), quality assurance (QA), and quality management (QM)

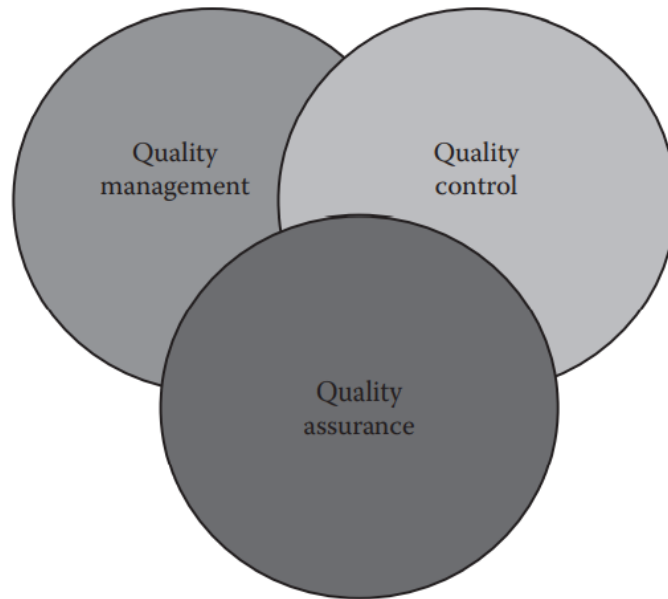


Figure 3. 3 main basic elements of the quality management process (Erick C., 2014,11)

Quality Control: Analyzing to identify the reasons why the products/services are low-quality. The company will monitor the process capability and stability, measure the process performance and variability to update the quality baseline, and recommend corrective and preventive actions. The quality control process also suggests manufacturing/production changes to avoid defect repair. (Erick C., 2014,12)

Quality assurance: Concentrating on testing and researching activities to make sure that products/services can meet standard specifications. This process includes reliability, durability testing of the product, experimental design, and failure/defects analysis. (Erick C., 2014,12)

Quality management: It refers to the management processes that oversee and connect the completion, control, and transition of quality activities. This process will provide leadership and support, provide employee training and recognition about quality management, and plan quality improvement for the short-term and long-term with a suitable organizational system. (Erick C., 2014,12)

3.2.3 PDCA cycle

In the quality management process, many organizations are using the PDCA -cycle (Plan, Do Check, Act) (ISO,2015). The PDCA cycle is more effective than the "right the first time" strategy. Using the PDCA cycle means constantly looking for better ways to improve (Imai, M.,1886,60).

There are 2 corrective actions: temporary and permanent. The temporary action is intended to address and practically resolve the issue. Permanent corrective action includes investigating and eliminating the root causes, to ensure the long-term viability of the improved process. (Menand,2001)

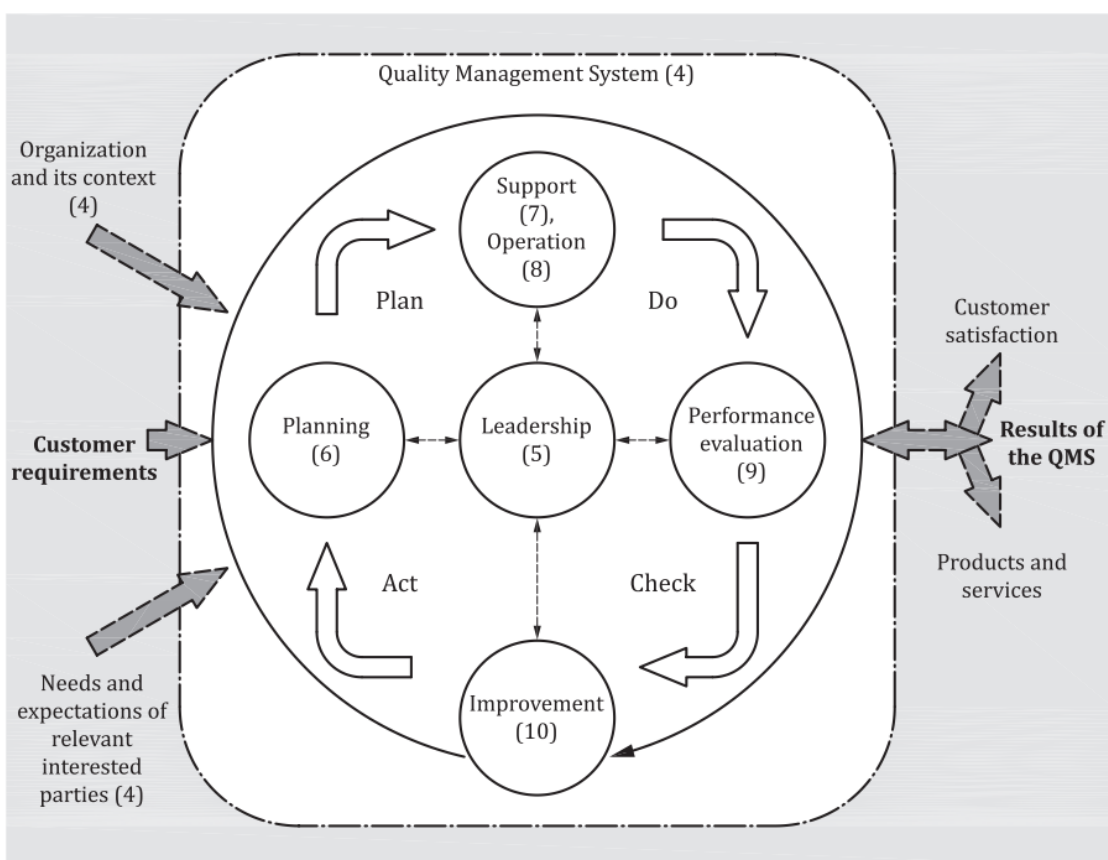


Figure 4. Representation of the structure of this International Standard in the PDCA cycle (ISO,2015)

The Plan-Do-Check-Act (PDCA) cycle is one of many that drive continuous improvement in organizations. The ISO 9001 Standard employs a process-oriented approach that includes the PDCA cycle. The ISO 9001 standard promotes the process approach, which systematically identifies and manages processes that operate the quality system and maintain its interactions. The process approach constantly improves itself by utilizing the PDCA cycle. (Itay A., 2017,416)

The PDCA cycle principle is present in all our daily business activities. As figure 5, we can see that Leadership is at the center of the cycle meaning that we need interaction and cooperation from the top management level to the lowest level to keep the PDCA cycle rotating. The PDCA cycle is used both formally and informally, and it never ends. Its goal is to maintain constant improvement. The method combines the planning, implementation, control, and improvement of the Quality Management System's various operations; the PDCA can be implemented at the core process, a minor process, or even several processes, a product, or a resource. (Itay A., 2017,417)

The PDCA cycle can be briefly described as follows:

Plan: Establish the system's and its processes' objectives, as well as the resources required to deliver results following customer requirements and organizational policies and identify and address risks and opportunities as well to make sure the cycle will not cause any risks (ISO,2015). Consider writing the plan with the participants; they can provide useful input and set up effective activities. Make the "Do" stage (the next stage of the PDCA) easier for them to complete. (Itay A., 2017,417)

Do: This is the second stage of our cycle. At this stage, we will implement what was planned in the first stage (ISO,2015). It is always hard to make words into action and it needs cooperation from all stakeholders and levels in the company. A clearer plan with precise and detailed information will help this "Do" stage easier. (Itay A., 2017,417)

Check: In this stage, we will assess the efficiency of the "Do" stage by monitoring and measuring processes and the resulting products and services concerning policies, objectives, requirements, and planned activities, and report the results. (ISO,2015)

Act: In this stage, we try to improve the performance of our plan. If we are dissatisfied with the progress of our plan, review it, and make changes to improve it. For example, which parameters we failed to meet the objectives in and try again or in a different way? This is how we stay on top of our game. (Itay A., 2017,417)

3.3 Standard ISO 9001:2015

To answer research question 2, we need to understand what the standard ISO is and why the company needs it for their quality management system

3.3.1 ISO-International Organization for Standards

ISO was founded in 1947 in London. There were 67 technical committees (experts to focus on specific topics). (ISO,2022)

ISO is an independent, non-governmental international organization with 167-member national standards bodies. (ISO,2022)

Through its members, it develops voluntary, consensus-based, market-relevant international standards that bring together experts to share knowledge, support innovation, and provide solutions to global challenges. (ISO,2022)

ISO documents often contain requirements, specifications, guidelines, and characteristics that must be met for a product to meet general criteria or requirements. (ISO,2022)

The International Organization for Standardization (ISO) first released the ISO 9000 quality assurance standards in 1987 and amended them in 1994. These standards include ISO 9000, 9001, 9002, 9003, and 9004. (Tummala and Tang 1996).

It is said that ISO certification ensures a uniform level of quality for all processes, services, and goods produced by enterprises (Singels et al. 2000).

3.3.2 ISO 9001:2015

In quality management, we have ISO 9001:2015 which is a part of the ISO 9000 family for quality systems. Many organizations manage to get achieve this standard to get a certificate.

On the ISO official website 2022, they stated 2 main reasons why the company needs ISO 9001:2015 certification:

- They need to demonstrate a consistent ability to provide a product or service with high-quality standards. In other words, it means the product/service will meet all the customer's requirements. (ISO,2022)
- They not only want to meet the customer's requirements, but they also want to improve the customer's satisfaction continuously through effective application of the system including improvement of the system and assurance of conformity to customer. (ISO,2022)

There are over a million organizations worldwide that are independently certificated via a third party. This makes ISO 9001 become one of the most widely used around the world for the quality management system. Some studies have already shown that certificated organizations outperformed organizations without certificates in terms of return on assets. For example, US motor car industry, the organizations that applied ISO 9001 standards in their quality management systems gained significant growth in operational performance, financial performance, and stock market performance. (John S. Oakland,2014, 247).

The standards offer a benchmark against which a company's quality management system can be assessed. The attainment of customer satisfaction through multidisciplinary involvement in attempts to improve the quality, documentation of systems and procedures, and other fundamental structural components required for quality systems forms the basis of this baseline. Many businesses base their continuous improvement initiatives on ISO 9000. (Summer, 2005)

The supply and demand sides of the economy are what is driving the adoption of ISO. Instead of adding a new production factor, the implementation of ISO minimizes managerial inefficiency (Lafuente et al. 2009,62-75).

3.3.3 Principles of ISO 9001

The ISO 9001 specifications outline what a business must do to fulfill consumer expectations. However, it is up to the specific business how these objectives are met. The ISO 9000 standards underwent a considerable revision in 2015 to align their structure more closely with how businesses are run. It explains how quality standards can be achieved and is a process-oriented systems approach with a customer-centered focus on developing relationships on all levels. (Erick C., 2014,36)

There are 8 key principles included in the ISO 9001:2015 (Davor M.,2019,1)

1. Customer-focused organization
2. Leadership
3. Involvement of people
4. Process approach
5. Systems approach to management
6. Continual improvement
7. Factual approach to decision making
8. Mutually beneficial supplier relationships

According to Agnieszka, M (2010), when we look closely at the specifics of each principle, we can see that they represent, in a sense, successive stages of the maturity and understanding of businesses in the domain of quality management. They are positioning themselves in the following order:

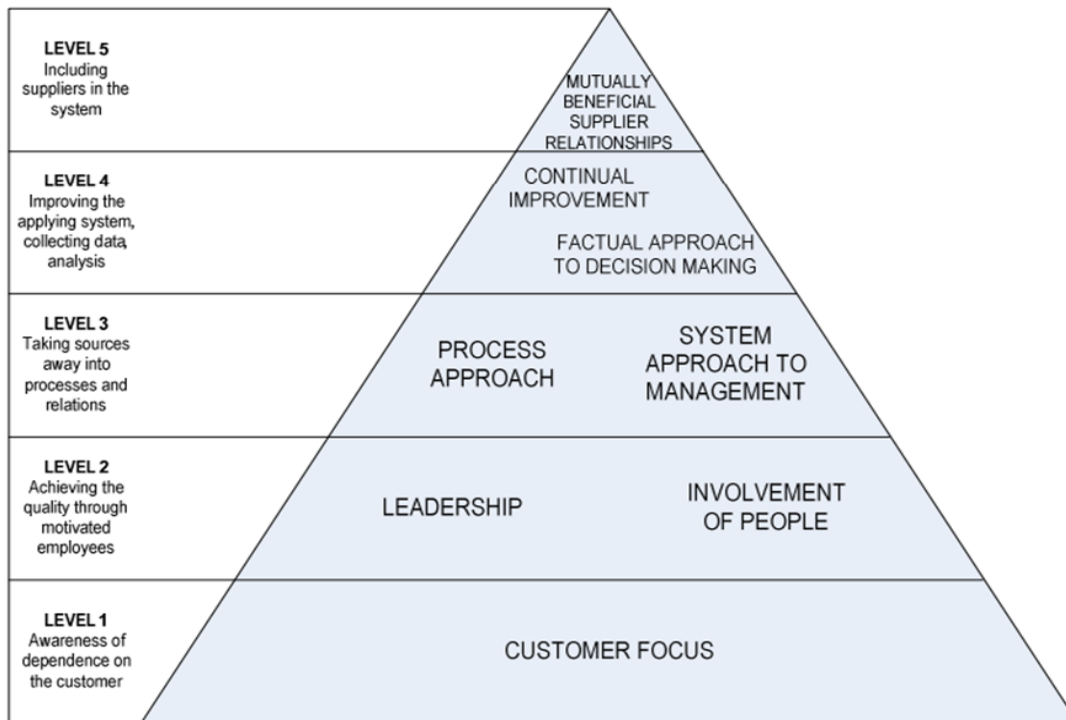


Figure 5. Quality management principles with 5 levels of maturity of the organization (Agnieszka, M. 2010,4)

Customer focus

The main goals of quality management are to plan, design, develop, produce, deliver, and support products or services to satisfy customer needs and try to go above and beyond their expectations. The company should identify different customer groups (indirect and direct) for each product/service. Based on that, they need to create a sustainable communication channel to connect with customers to measure and monitor customer satisfaction. (ISO, 2015)

Leadership

The purpose and direction of the organization are unified by the leadership. They should establish and maintain a workplace culture that encourages people to actively participate in attaining the goals of the firm. Communicating and encouraging an organization-wide commitment to quality through the organization's mission, vision, strategy, policies, and processes. (ISO, 2015)

Involvement of people

To increase the organization's capacity to generate and deliver value, competent, empowered, and engaged individuals are crucial at all levels. It is also critical to provide people with the required training, resources, and authority to act with responsibility on quality management matters. The company should care about the employee's development, initiatives, and creativity and enhance the people's satisfaction. To be more specific about quality management, Stapp 2001 stated that with good people involvement policy, the company can utilize employees' talents to produce a higher quality of products/services. (Stapp, Eric H. ,2001, 43)

Process approach

When activities are viewed and handled as interconnected processes that work as a coherent system, results that are consistent and predictable can be attained more effectively and efficiently. The company needs to define the objectives of the systems and necessary processes that need to include inputs and resources, and the desired result that occurs through proper management of the processes involved. (Stapp, Eric H. ,2001, 44). The risks which can occur during the quality management process to affect the output results need to be identified and avoided. (ISO, 2015)

System approach to management

Objectives can only be achieved when the organization can recognize and manage the systems of connected processes. The organization becomes more efficient and effective because of achieving those goals. (Stapp, Eric H. ,2001, 44)

Continual improvement

When organizations establish and maintain a continuing focus on improvement, they will be able to maintain current levels of performance, adapt to changing circumstances, and recognize, create, and take advantage of new opportunities. The company creates and implements procedures to carry out organizational improvement programs, and monitors evaluates, and audits improvement project planning, execution, completion, and outcomes. (ISO, 2015)

Factual approach to decision-making

When an organization has built an evidence-based decision-making process, which includes obtaining information from various sources, recognizing facts, impartially assessing data, examining cause and effect, and considering potential repercussions, it will succeed. Nowadays, decision-making can be extremely complex with many uncertainties involved, so the company should determine, measure, and monitor KPI (key performance indicator) to demonstrate the organization's performance (ISO, 2015)

Mutually beneficial supplier relationships

This is the top level in the pyramid chart in figure 3. If the company permits unfriendly or uncooperative relationships with its suppliers, it cannot succeed. Cooperation with suppliers must not be undervalued because they are a crucial component of the systems that a business must manage (Stapp, Eric H., 2001, 44). It is important to determine the relevant interested parties (stakeholders) which are surrounding the company's network like suppliers, partners, customers, investors, employees, and society as a whole and the relationship between them to the organization. After that, the company needs to make a priority of those relationships and establish a short-term and long-term relationship plan. Then they need to measure the performance and increase the support and cooperation in those relationships (ISO, 2015)

3.4 Information System (IS)

3.4.1 Information system and its role in Quality management system

The information system is defined as a working system that processes information by performing various combinations of six types of operations: capturing, transmitting, storing, retrieving, manipulating, and displaying data. Furthermore, the use of information in a human context and its alignment with business strategies demonstrate that technological aspects are only one component of this system. (Alter, 1999, 1–70)

To have a good quality management system set up with basic requirements, it is necessary to have an information system in the organization. The IS will probably determine the success or failure of the quality management system. (Wai et al., 2011, 592–608)

As we understand from the previous theory that the quality management system needs to exchange data from input (customer requirements) to internal processes and output as the final products/services. With IS support, the data can be organized, preserved, and archived in the database and send to different parties with fast speed and high accuracy. Furthermore, the IS software can help the organization implement ISO 9001:2015 by replacing all paper records with space-saving and environment friendly. (Tasneem F. et al.,2017)

According to Khalil (1994), Information System (IS) is a crucial part of the organization to implement the Total quality management (TQM) principles. The author also emphasized that many people did not aware of the role of IS in quality management. For example, when the company analyses the feedback from customers and tries to communicate them with R&D and production without proper IS. The communication data is poor and inconsistent will lead to a poor outcome of quality management. (Khalil, 1994)

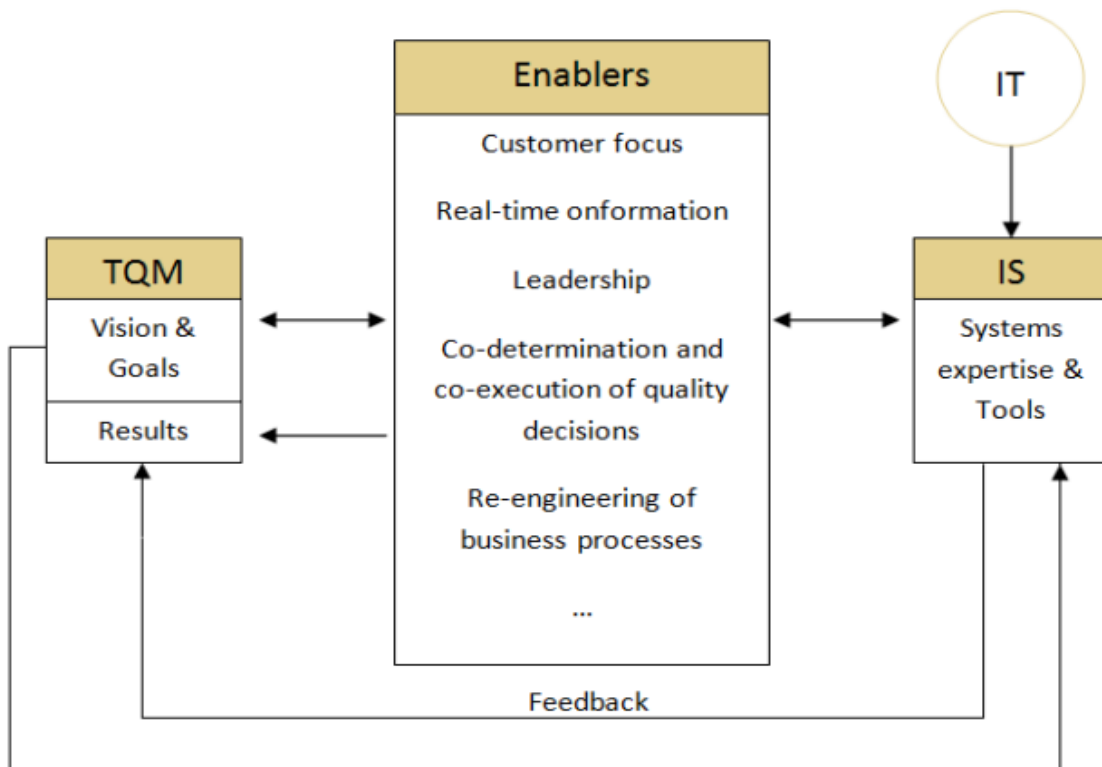


Figure 6. IS-TQM framework (Khalil O.,1994)

In this above figure 6, there is a connection between Total Quality Management (TQM) and Information system (IS) and the Enablers. We can see that when the company has some goals and visions about quality management for example the company want to have all the sofa with leather thin smaller than 2 cm and need more protective foam underneath. With this goal/strategy, all purchasing teams and quality teams need to use an Information system to communicate with suppliers, production needs to use IS system to measure and communicate with the quality team. The customer service team need to use IS system to check with customer and get their feedback on this new company strategy on the sofa. We can see that to get a good result in quality management, the company needs a good IS to support.

The involvement of IS in Quality management is significant for a long period. There are many IS software that is now used globally to implement the QM. For example:

ERP - Enterprise Resource Planning is used to maintain customer and supplier relations, product and process management, quality data, and workforce management (Foster, Wallin, & Ogden, 2011).

EDI – Electronic Data Interchange can also be used to maintain customer and supplier's relations, employee and stakeholders' communication, system development and internal audit, and training (Kock & McQueen,1997)

CRM- Customer Relationship Management is used to main customer relationships, customer focus, and customer service. (Ku,2010, 1085–1102)

Document Management Systems are used to process the documentation, QM communication in the organization, and document the QMS (Kasim,2011,171-178)

3.4.2 Sharepoint Online

We already see the important role of IS in Quality management systems, we will go deeper to understand SharePoint Online which is one of the power tools as document management systems.

SharePoint Online is a service provided by Microsoft as part of the Office 365 product family. It is a cloud-based service in that we can collaborate on work-related tasks and share content with colleagues, partners, and customers all over the world. Internal sites, files uploaded, and any information hosted on SharePoint Online can be easily accessed using mobile devices from anywhere in the world. (Charles D. W.,2019,1). From Microsoft, there are over 78% of Fortune 500 companies are using SharePoint. Additionally, it is predicted that SharePoint is just at the start phase of growth and 67% of cooperations are considering SharePoint as a workflow platform and play important role in the cooperation's communication. (Woodgate,2012,2)

According to Crane (2010), documents, emails, and spreadsheets, among other things, can be stored on the website. It allows a person to save business information such as tasks, projects, calendars, and more. As a result, it serves as a central repository for all business information.

SharePoint also allows the organization workflow to operate more efficiently through unique workflow features such as approval workflow and records routing. (Favre, 2011,4)

There are 3 main advantages of using SharePoint Online (Charles D. W.,2019,2).

Simple sharing and collaboration—Enable content sharing and collaboration among global teams. Allow people to share and collaborate on information to stay up to date. Enhance your intranet and turn it into a hub for information sharing.

Connect people—Inform and communicate with your global workforce. Using SharePoint dynamic pages, you can publish breaking news and announcements.

Use intelligence to make faster decisions—The powerful search engine will assist you in finding sites, attachments, and profiles. Built-in intelligence provides relevant results to help you make decisions and discover important information.

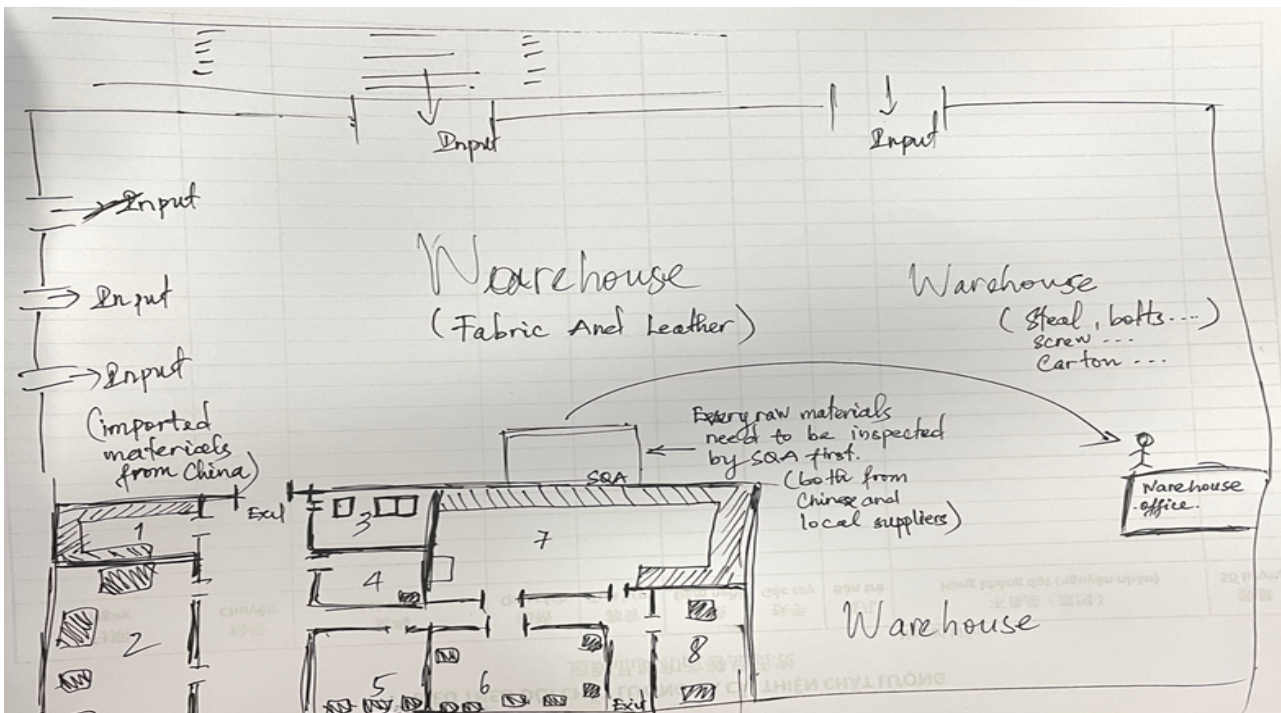
4 The study

As the author mentioned in the beginning, this thesis is aiming to improve the current company's quality management system. This section will explain in more detail what is the current process in the company's quality department

4.1 Quality management system in Company K's factory in Vietnam

4.1.1 Inbound to quality

From the very beginning, the raw materials are mainly delivered from China, and some are supplied by local suppliers. All stocks will be placed in 2 different warehouses based on their characteristics. (One warehouse for Fabric, and leather..., and another warehouse for steel, screw, bolt, and carton...). Then Quality team will take randomly each type and batch to be inspected by IQC (Input quality control) and the LAB. If at IQC phase, there are defined as unqualifying => be returned or accepted with a discount. At the same time, IQC sends samples to the lab to inspect.



Appendix 1. K's inbound process map (Adapted from K's source)



Figure 7. K's warehouse in Vietnam

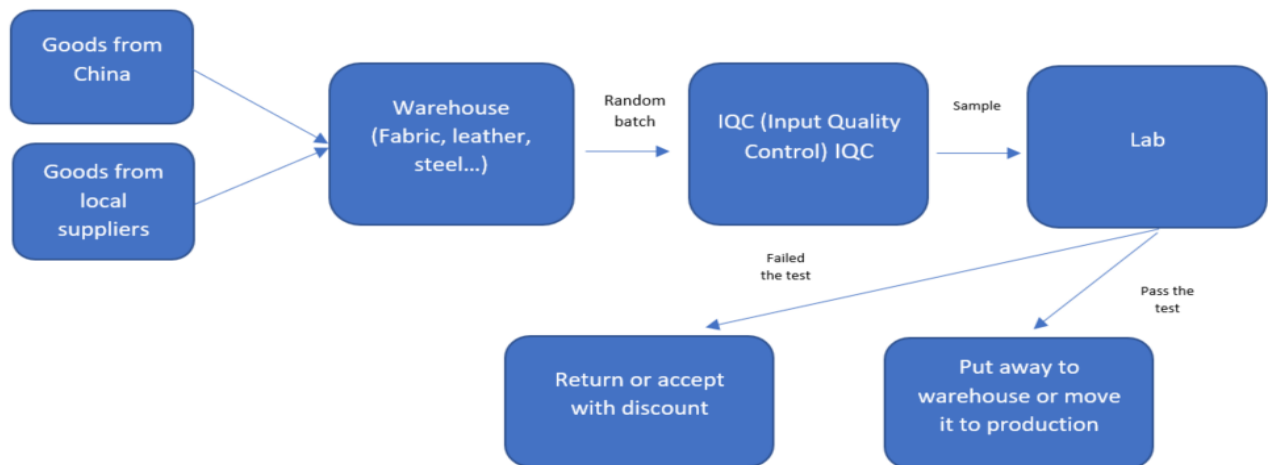


Figure 8. K's Inbound process

When the sample goes to the lab to inspect with an unqualified result, the lab will send a report to the IQC team and there will be 2 scenarios:

Concessive

Request the suppliers to write a guaranteed letter for those unqualified shipments and give the company a discount. In case, there are huge discrepancies in the agreed quality standard and there is a part of that shipment that was already in production, the rest of the stock will be returned. Purchasing team will take responsibility to get at least a 10% discount for the unqualified stocks that were already in production. Purchasing team will work closely with the Quality team to collaborate with the supplier to improve the shipment quality in the next delivery.

Return

Make a return letter

LL-US_Ub9a1

越南品质部 CỤC CHẤT LƯỢNG VIỆT NAM 原材料质量问题处理单 ĐƠN XỬ LÝ VẤN ĐỀ CHẤT LƯỢNG NGUYÊN VẬT LIỆU THÔ							
seri:				到货工厂 Hãng đến nhà nhà máy:			
nhà cung cấp	协易	品名 tên sản phẩm	五金	总数量 tổng số lượng	7000个	抽检不合格数 Số mẫu ngẫu nhiên không đủ tiêu chuẩn	
		料号 Mã vật liệu	nhieu mã	抽样数 số lượng mẫu		材料批次 lô nguyên liệu	20220928
:Mã tá vấn đề: 五金 01.52.05051 3000个。01.51.04038 4000个。本次测试为盐雾测试测试时间为10小时，测试后样品表面出现大面积腐蚀点，根据顾客标准该样品为不合格产品。thử nghiệm này là thử nghiệm phun muối và thời gian thử nghiệm là 10 tiếng, sau khi thử nghiệm xuất hiện điểm ăn mòn tích lớn trên bề mặt của mẫu, theo yêu cầu tiêu chuẩn của KUKA, mẫu được đánh giá là không đạt tiêu chuẩn							
người kiểm	马文忠			反馈日期:Ngày phản hồi:	29/9/2022		
hướng giải quyết	Kết luận mô tả kết luận					确认签字 ký xác nhận	确认日期 ngày ký
Chấp nhận bộ <input type="checkbox"/>							
Xử lý hạ cấp							
Kử lý chiết							
xử lý trả	同意退货 đồng ý trả hàng <input type="checkbox"/>					马文忠	29/09/2022
Phòng Thông báo cho bộ phận	采购管理中心 Trung tâm Quản lý đầu tư	钉钉 <input checked="" type="checkbox"/> 邮件 <input checked="" type="checkbox"/>	工厂物控计划模块 Mã-đơn kế hoạch kiểm soát vật liệu nhà máy			钉钉 <input checked="" type="checkbox"/> 邮件 <input checked="" type="checkbox"/>	
ghi chú:	<p>1. 采购管理中心同事收到知会信息后需及时与原材料供应商取得联系，并配合品质部对原材料质量问题进行处理。Sau khi nhận được thông tin thông báo, các đồng nghiệp trong trung tâm quản lý thu mua phải kịp thời liên hệ với đơn vị cung cấp nguyên phụ liệu, phối hợp với bộ phận chất lượng để xử lý chất lượng nguyên phụ liệu.</p> <p>2. 工厂物控计划模块同事收到知会信息后及时与各生产相关单位联系确保生产不受影响。Sau khi nhận được thông tin thông báo, các đồng nghiệp trong phân hệ lập kế hoạch kiểm soát nguyên vật liệu của nhà máy sẽ nhanh chóng liên hệ với tất cả các đơn vị</p>						

Appendix 2. Quality return form (Adapted from K's source)

4.1.2 Quality Control in Production

Each production line will have its QC team to check the unfinished products at a certain stage and process. If the QC team found some defects, they will write a report to the quality and production team to discuss the solution. If there is nothing wrong, the product will be assembled to the end and will be moved to the warehouse again. After that, the vice product quality manager will check randomly several products in different product batches.

Each final products need a quality stamp from QC before delivering to the final internal quality check with the third-party representative from the customers.

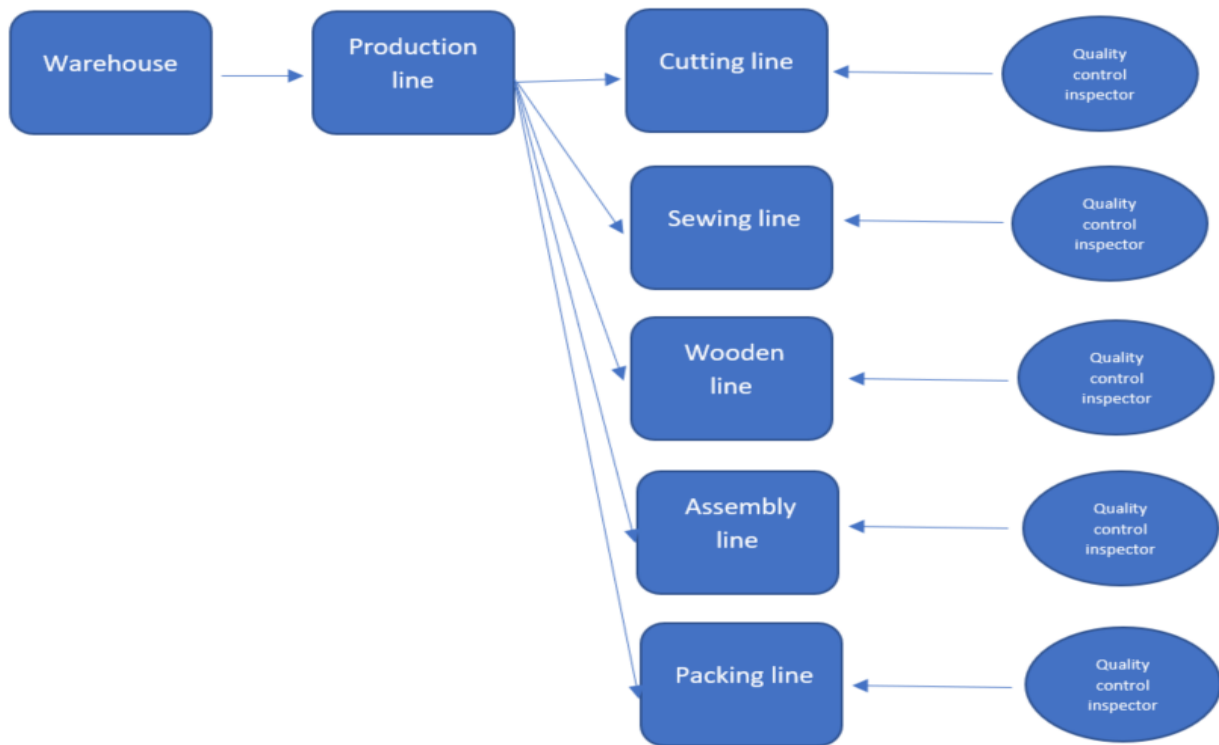


Figure 9. K's production QC process

The packing process is also checked carefully. All the empty containers will be checked before loading the finished products on.

4.1.3 Quality check in Lab

In the lab, we can do over 40 types of tests. The author will not go too much into a different kind of test in this thesis, only a few examples. This section focuses more on the process of how the quality check is done in the Lab and how it will be communicated to other teams. We separate into 2 main inspections: one for raw materials and one for finished products.

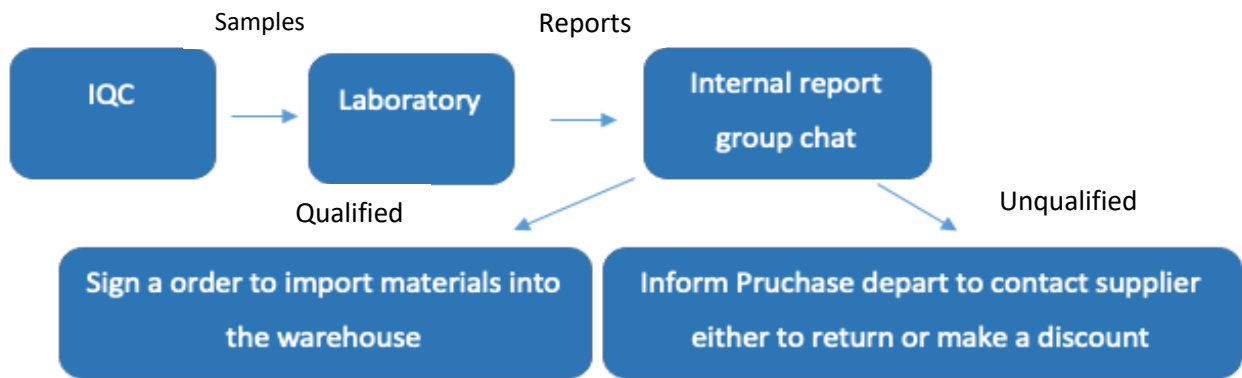


Figure 10. checking raw materials process

When raw materials arrive at the factory, there is a team called IQC in charge of inspecting the materials first by their specifications and appearance. Then they pick or cut randomly samples from the whole batch sending them to the lab to take place deeper inspection. The samples are put in a raw materials room where the temperature and humidity are kept at 23+ and -2 and 50% correspondingly.

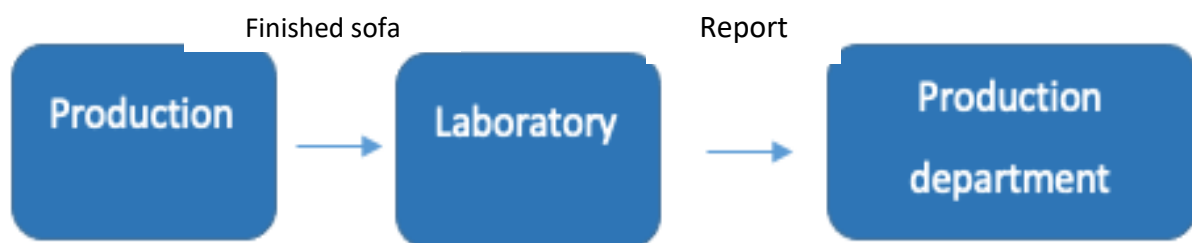


Figure 11. checking finished sofa process

Finished product inspection occurs only if there is a requirement from the production department (production line) in case a new model is coming, or they may find some problems with the finished assembly goods (three-seat sofa and one-seat sofa).



Figure 12. Sofa quality check

In Figure 12, the machine is named the three-seat comprehensive tester. Which is equipped for testing the repeated load-bearing capacity of the sofa under simulated normal use conditions. Check the strength of the seat and back of the sofa after assembling all the parts (seat, back, handle, etc). During the test, a load module of a certain shape and pressure is continuously loaded onto the surface of the seat and the sofa's back according to the prescribed form and frequency of loading to achieve the required physics, characteristics, and performance.

For raw materials, we can inspect all components that need to be a part of a sofa such as a screw, bolts, wood, leather, fabric, cotton, carton boxes, etc.

We can use the leather test as the example

Cowhide

Color test – Rub with a fleece tool 500 for dry scrubbing, 150 times with wet scrub (for grade 1 leather); rub 250 times dry, 100 times wet for 2nd-grade leather; For some special leather, codes will customize the number of rubs on the skin. Or Scrub with cotton cloth: 10 times for both dry and wet.

Folding test: The purpose is to see if the leather is torn or cracked after 50,000 times.





Figure 13. Folding test for leather

After being inspected the sample would be identified as a qualified or unqualified sample based on Company K's standards.

The reports will be sent to a group called "internal inspection report" in Ding Talk which is a chat application. In this group, there are Production Quality Control, Input Quality Control, Output Quality Control, and Quality Control manager who are responsible for different materials and processes.

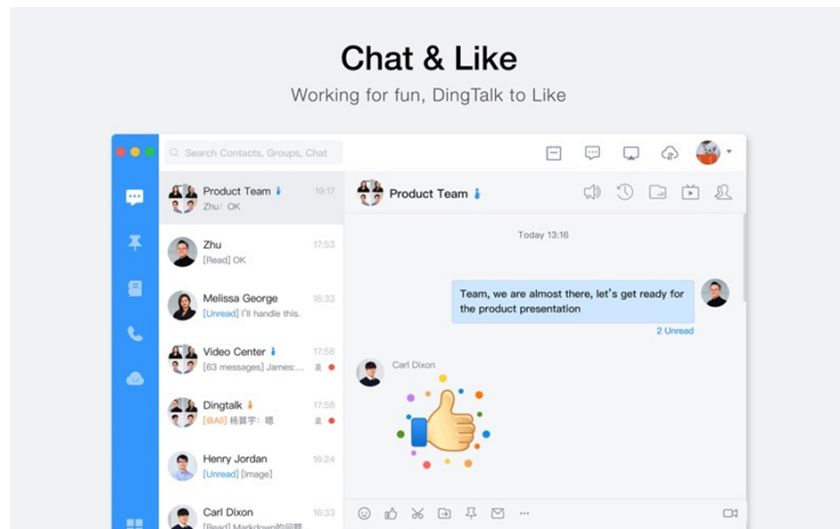


Figure 14. Ding Talk chat application

Output Quality Control will receive an order from Production Quality Control (From the lab) that what materials are not qualified, then inform the purchaser to return all back or ask the supplier for a discount. They also need to write the return form to explain the defect reasons for return and solutions.

4.2 Case study

After we understand the current quality management system of Company K and discussing with other colleagues and manager, there are many issues that the author found during her time at the company as bellow:

No common quality standards (lack of a quality handbook)

Some inspection results were defined by observing, if one person inspected the salt spray sample, they would identify it as an unqualified sample, but others would not because they think it is not big rust on it, or because the production line is out of the component, and they want to use those right away.

No efficient communication method

Like it was mentioned above, during the whole quality management process, the team used Ding chat as the main communication skill, each team need to download the reports individually and save them on their laptop. It was not organized and not easy to keep track of.

There are many cases, the customer complained about some products that are delivered a long-time ago and the quality team can't find a quality report from the history chat.

Sometimes, the Lab team already sent a quality report to the production and warehouse team to follow up, but they don't do it and the case will be forgotten at some points.

Not good customer integration into the quality improvement process

Company K is only reacted when getting a complaint from a customer, otherwise, they will not do anything. The quality of the product will not be improved, and the company will lose its competitive advantages.

No good cooperation from different teams for a long-term quality improvement process

Company K's quality department is concentrating more on quality assurance, quality control, and testing...There are no long-term development to get better quality standards and features to gain more competitive advantages.

5 Result analyzing

5.1 Proposal solutions

After knowing the current issues that the company is facing with the quality management system. The author was doing a lot of research and came up with some bellow solutions

5.1.1 Set a common quality standard or quality handbook for the whole company

The author starts to discuss with the different team leaders in the quality department to make one standard quality handbook based on ISO 9001:2015 literature theory. Most of the team leaders

agreed about the current issue that the company is facing without the quality handbook. Therefore, the author and other teams started to collaborate and establish the first version of the quality handbook.

To determine the object and goal of the handbook

The handbook is aiming to align all the team/departments inside the company about the quality topic. Some common standards and processes were defined so everyone should follow them.

To determine the responsibility and process

Because the quality handbook is to be used to guide the implementation of the quality management system, so the role of each team will be defined clearly in the handbook. For instance, the goods receiving need to check the packaging quality and report it...The company was not concentrating on developing a quality management system to satisfy the customers better, and in this handbook, the role of R&D, or the development team was emphasized.

Timeline for the handbook implementation

It is extremely important to have a timeline to follow up on how the company set up and implements the quality handbook. It will boost the whole company from top manager to lowest level employee to understand the idea of the quality management system.

Data collection

This is an important step to establishing the quality handbook. The author needs to collect all the quality reports, and requirements that the company is currently using. Also, talking and interviewing with other team leaders and managers to ask if they want to add any additional information to the handbook.

Content creation

At this step, the author should know already what should be included in the handbook and start to make the first version of it and send them to other teams to get more feedback.

Auditing method

The handbook will be considered as a development procedure for the company's quality management system. So, the auditing for this handbook is important when it was done.

Submitting the handbook's draft version

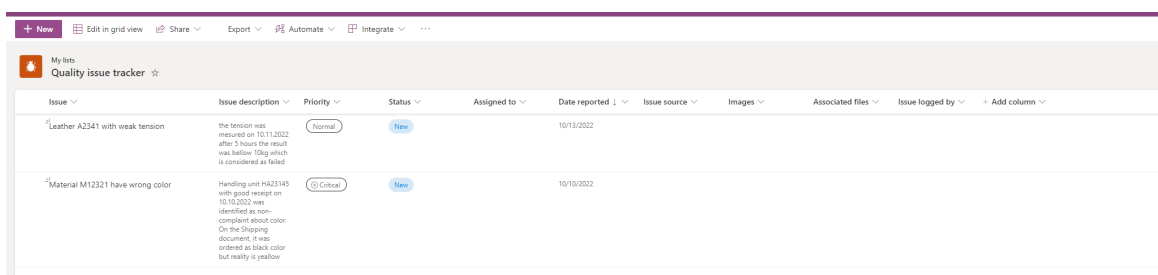
At this step, the handbook just needs to be checked and fixed by other teams.

5.1.2 Sharepoint implementation

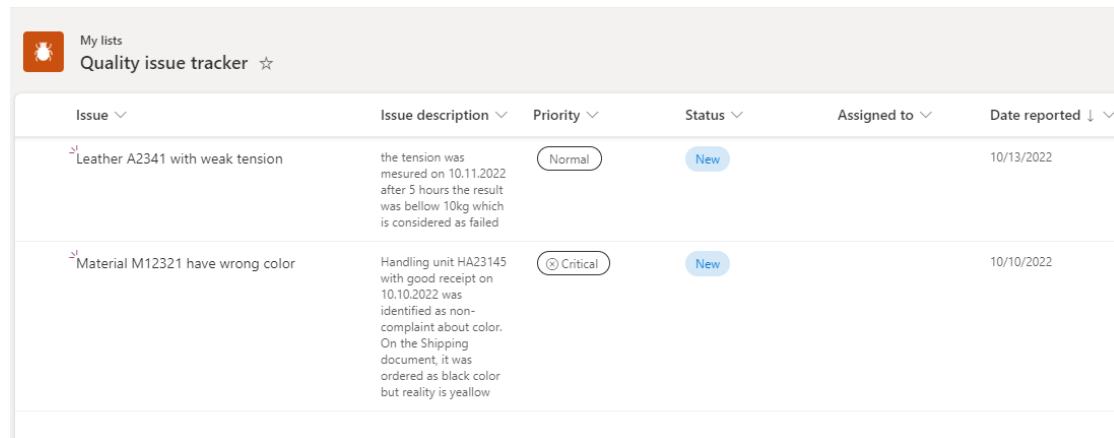
From the literature section, we know that information systems play an important role in the quality management system. Besides, the company is using Ding Talk, which is not a good communication tool and caused a lot of issues in the quality process.

The author suggested to the managers and team members the use of the Team app for chatting and communicating, and Sharepoint as the main workspace for managing the project's tasks, handbook, and quality cases.

The author made a demo as well on how Sharepoint can significantly improve the current quality management system.



Issue	Issue description	Priority	Status	Assigned to	Date reported	Issue source	Images	Associated files	Issue logged by	Add column
Leather A2341 with weak tension	The tension was measured on 10/11/2022 after 2 hours the result was below 10g which is considered as failed	Normal	New		10/12/2022					
Material M12321 have wrong color	Handling unit HA23145 with good receipt on 10/10/2022 was identified as non-compliant about color. On the Shipping document it was ordered as black color but reality is yellow	Critical	New		10/10/2022					



Issue	Issue description	Priority	Status	Assigned to	Date reported
Leather A2341 with weak tension	the tension was measured on 10.11.2022 after 5 hours the result was below 10kg which is considered as failed	Normal	New		10/13/2022
Material M12321 have wrong color	Handling unit HA23145 with good receipt on 10.10.2022 was identified as non-complaint about color. On the Shipping document, it was ordered as black color but reality is yeallow	Critical	New		10/10/2022

Figure 15. Sharepoint demo

In Sharepoint, the author created the List which to keep track of all the quality issues. In this List, the status and priority of each case were mentioned. The responsible person and related suppliers are also mentioned and kept track of. The quality team when using this app can also attach the quality report to the attachment columns, so it will be saved on the Microsoft cloud, and everyone can access it and it is safe. Moreover, the top manager can use this file to calculate the workload and make sure the team will follow each case before the deadline.

The quality handbook can be also saved here on the Sharepoint cloud. It can be accessed easily by any mobile phone via an app.

5.1.3 Suggested actions for the company's strategy about quality management

As we know about the quality management process, and ISO 9001:2015 literature, the author made a list of suggested actions to present to the managers, and directors.

Customer focus

Identify and understand better the customer's requirements, satisfy, and exceed the customer's expectations and predict the future needs in this current fast-changing environment.

- Using questionnaires and interviews more often with customers,
- Organizing the customer's fair and exhibition

- Adding more resources to the quality team to support customer's complaints
- E-mailing to customers for notifying all the updates about the quality complaints process
- Sending samples of new products to customers to get feedback
- Keeping the close collaboration between the quality team, R&D, and customers in terms of new product development or any improvement projects
- Shortening the processing time for customers' complaints about quality issues. Set the KPI for the processing time and try to improve it day by day

Leadership

The internal cultural that allows individuals to actively participate in attaining the organization's goals in quality management is something that leaders establish and maintain.

- Organizing more workshops and training for an employee to understand the important role of quality management.
- More conversations between a leader and team members will be a good approach to conveying the company's target and strategy throughout the company
- Transparently establishing responsibilities, rights, and tasks for each employee to improve the quality system
- The quality management principle needs to be written down in all the reports like the handbook that all employees know and can access easily

Process approach and continual improvement

Establish a clear process for quality management and try to improve it on day by day

- Determine the main and support process and the role of each team in each process
- Creating the manual instruction for all the team members to follow. For example, before taking the leather material to the sewing machine, the production employee must scan randomly partly of that leather
- Encouraging all the involved employees to speak out any ideas to improve the quality process through monthly and yearly meetings or workshop

5.2 Interview

The interview was conducted after the author made the Sharepoint solution demo and presented it to the team. There are around 10 people from the quality team and 3 managers. Due to the time schedules are different, the author presented the ideas to them separately in small groups both

face-by-face method and virtual method in their leisure time. After the presentation, the author did 3 interviews to ask about their thought and feedback.

First-person (virtual meeting)

She is my colleague who worked in the quality lab for more than 5 years. She said that the manual handbook will help the team. It can reduce a lot of extra explanation from her team to another team because of misunderstanding in some common quality standard KPI. She said Sharepoint is a great bonus to enhance the communication process.

She is also concerned that who will maintain the handbook because there are a lot of new products coming every year with a lot of new quality standards and the handbook would need to be checked and updated.

Second-person

He is the team leader of the production quality control team. He also appreciates the handbook ideas and other suggested actions from the author to improve the quality process. He said that the company did not put enough effort and emphasis on the quality topic since it began. The company only acted when getting complaints from the customers.

He was concerned that it will not be easy to change some of the current quality processes and he suggested the author make a detailed implementation plan with timeline and a huge support from the top manager to proceed with it.

Third-person

He is a production manager. He was happy with Sharepoint demo, and the ideas come long. He said that Sharepoint and Team can be trained right away and implemented after the training.

The handbook will need to be reviewed and discussed more in deeper level with the R&D team from China.

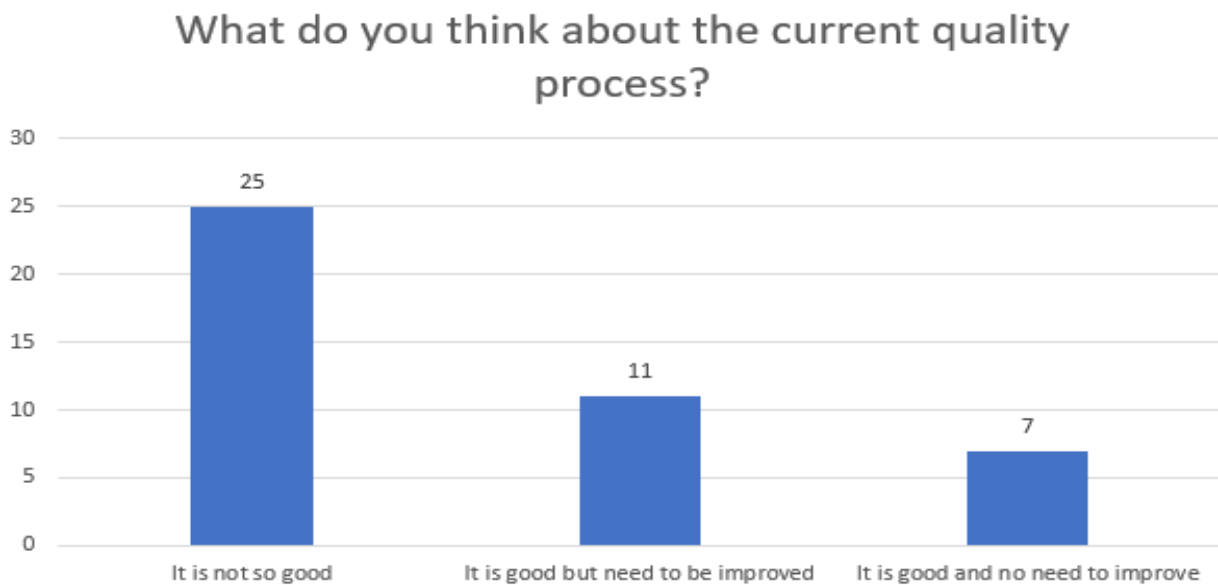
5.3 Survey

At the same time, the author also tried to make some demo videos and sent them to different team leaders/ managers to show to their team members and ask them to fill in the survey. The author used Google Form tool to create the survey.

The survey had 4 main questions

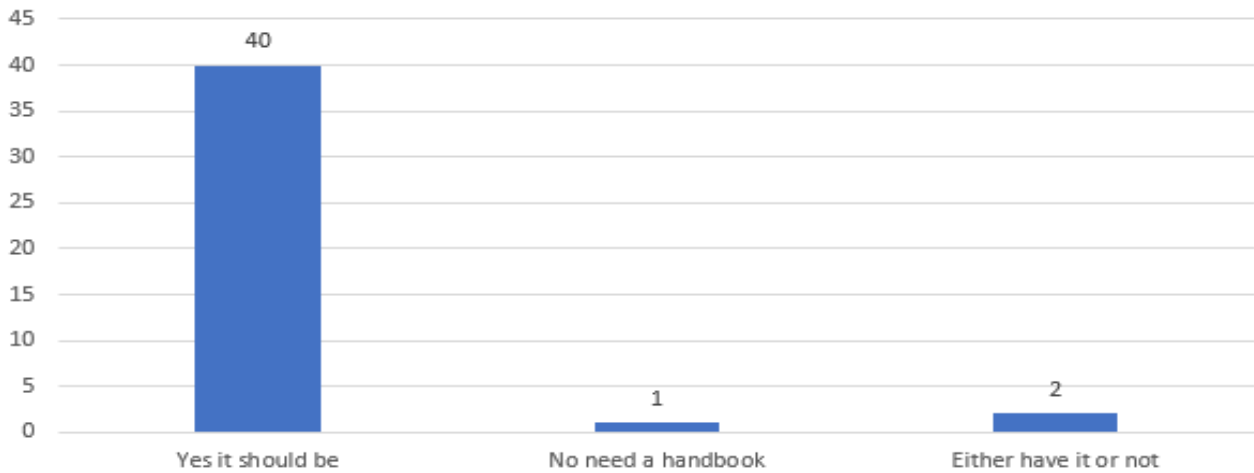
1. What do you think about the current quality process?
2. Do you think that the handbook must be in place?
3. What is the idea of Sharepoint?
4. Do you want to involve more in this quality management process development?

There were 43 answers the author got



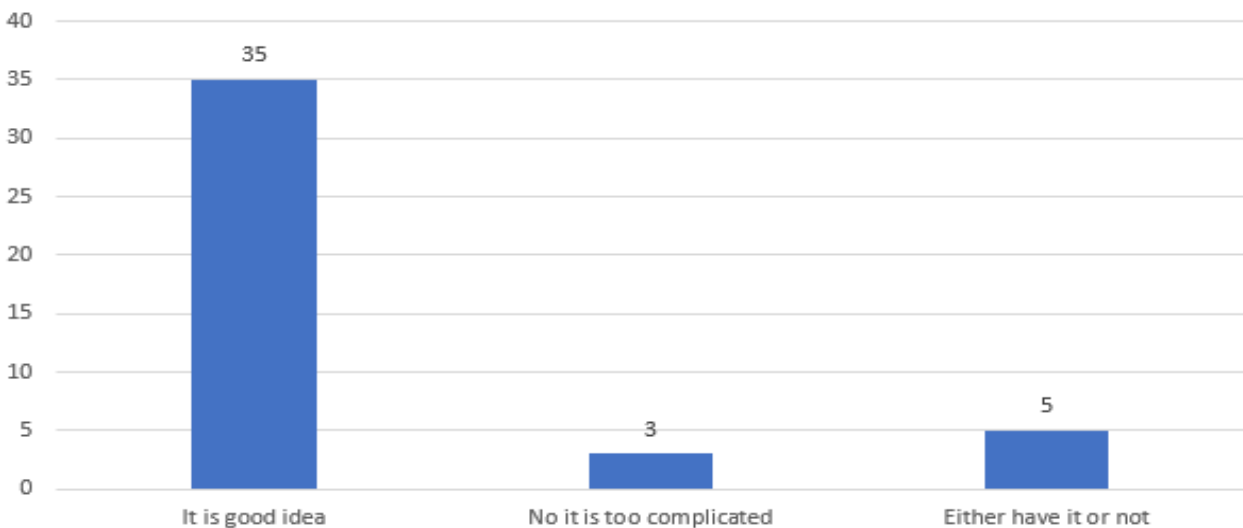
With the first question, more than 50% of the people believed that the current quality process is not so good and needs to be improved. This result can support more to the author's thesis to develop the quality management system.

Do you think that the handbook must be in place?



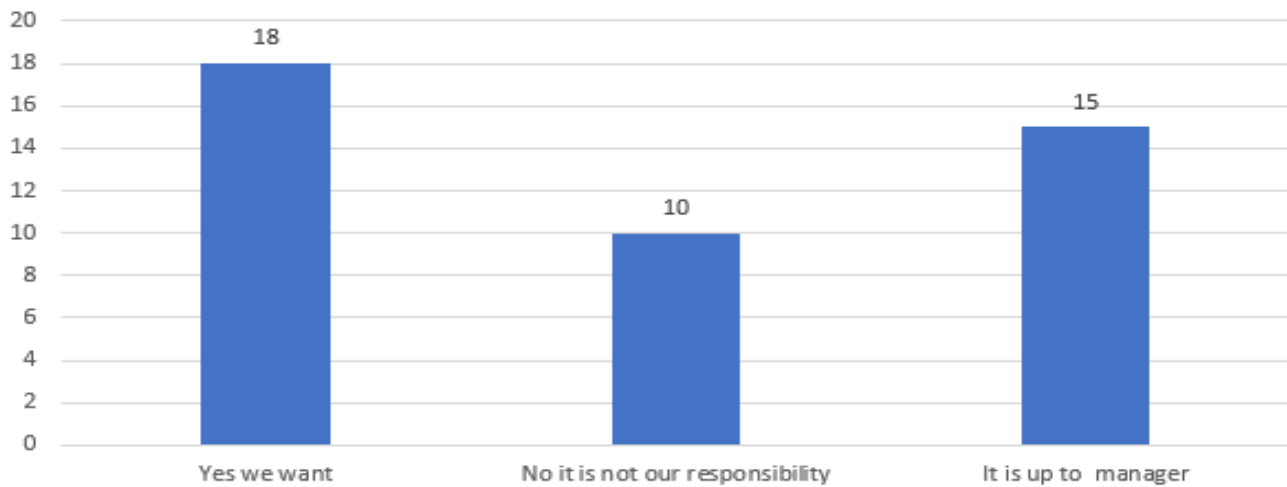
In the second question, it is obvious that a quality handbook is needed, some of respondents said that there was many confuses before about the common quality standard, and it should be changed.

What is the idea of Sharepoint?



There was 35 out of 43 answers said that Sharepoint is a good idea. Three of them said it is too complicated. These three people maybe need a longer training but in general, the author can be confident to say that the Sharepoint solution is simple and need to be implemented immediately.

Do you want to involve more in this quality management process development?

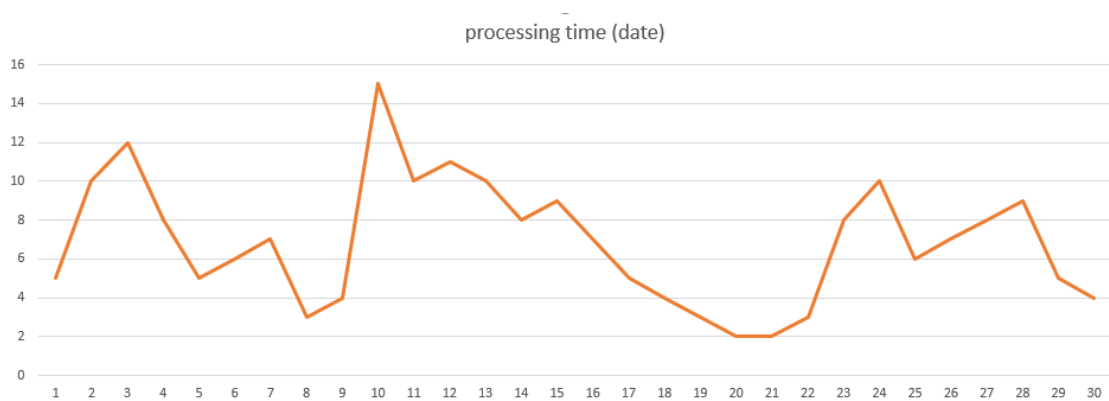


There were three options for the last question and seem that there are a lot of people who don't want to involve in the quality management process development. It means the company should have more workshops or training to integrate all employees into the quality management process.

5.4 Time study

The author implemented the time study to measure how long it takes to handle the quality complaints cases before and after implementing the Sharepoint solution.

The author spent 2 weeks following 30 cases. 15 cases before the Sharepoint implementation and 15 cases after that



We can see the processing time (date) has a trend to go down from case 16 to 30 after using the Sharepoint solution.

The first 15 cases with an average of 8.2 days to solve one case. From cases 16 to 30 the average is 5.53 days.

6 Conclusion and reflection

6.1 Discussion

Research questions	Literature supports	Implementation	Results	Research method
How should a company continuously improve the quality of its production?	+ Quality management system + Quality management process + PDCA	+ Set the quality handbook for the whole company + More customer focus and involve people in the quality management process from top manager to employee	This handbook is still in process. The author worked actively with other teams to build it, but it will be done expectedly from the Summer of next year.	The quantitative method with time study, A qualitative method with an interview and survey
How to apply ISO 9001:2015 in the current	+ Quality management system	+ Set the quality handbook	The quality system now has a better setup. But there was a need for more resources and still	A qualitative method with interview and survey

quality management system?	+ ISO 9001:2015	+ all the processes, tasks, and responsibilities for each team are defined	waiting for the top manager to recruit more people to maintain the handbook and other matters	Case study method
Should we have a better communication system in the company for quality management?	+ Quality management system + ISO 9001:2015 + Information System + Sharepoint Online	+ Sharepoint and Team app solution	This suggestion was implemented immediately and brought a lot of benefits to the team. The whole quality lab will officially change from Ding chat to Sharepoint and Team next year	Qualitative method with interview and survey

This thesis targets to answer three questions. (See the table above)

There is a promising future for all the author's proposed solutions. The Sharepoint was a highlight and got the approval to be used for the team's communication. There are many people from other teams still did not aware of the important role of the quality management system and it caused a lot of difficulties for the author to work with. Fortunately, the author got huge support from the top manager to continue this study and implementation.

When the author is working on setting up a handbook, there are a lot of agreements and support from different team members. It is undeniable that creating a handbook is not an easy task and

requires significant effort from the team for a long period. But the author was confident that the handbook will be done and bring a huge advantage for the whole quality department and others.

6.2 Conclusion

The main purpose of this thesis was to find answers to the current state of management system and suggest solution a communication tool for a better communication within the whole company.

While the author was doing the research, she realized the core issue was that the company is missing an essential document - handbook. it has been caused many missing events, uncleared solutions for unqualified samples or products, etc. According to the thoery of ISO 9001:2015, the need of pulishing a handbook is critical. After the author raised it out, the top managers took notice and put it to the list to discuss in the annual meeting at the end of the year. Since it started operating in the early of 2020, this is a great new for the near future that specifically the quality management system will be imoved and gennerally the entire company will be developed.

In addition, as mentioned above, company K is utilizing the chatting application named DingTalk to communicate and store parts of procurement which are uploaded. From my point of view, this application is not reasonable to use to communicate for business. It is unclear in term of who is responsible for what matters and what issues are appearing, besides, the lines can be easily missed and unsend, the application does not limit where to documents are able to share. Thus, a sharepoint demo was made and share it to the quality team and managers. Sharepoint is a great tool which is a safe place to store, organize, share, and access information from any device. By using sharepoint the company can reduce many time to ask someone for some document or the manager can easily know the resposibilities of each staff so as to managing and navigating workload more properly.

6.3 Reflection

It took four months for the author to study the implement the thesis. The author has been working with many talented people from the team and understand a lot not only about the quality topic but also about the information system topic like Sharepoint or Power automate. In the context of writting thesis, the author has practiced more collecting data skill and applied to utilize many types in text citation and reference.

Because the company has a headquarter in China, so many company's documents were written in Chinese. The author has also learned a lot about Chinese in this period.

The author believes there are still a lot of opportunities in the future that the company can improve in quality management. Increasing the concentration on the customer's feedback and improving the IT tools to support the quality management process is a priority.

There are some ideas for future development like increasing the concentration on the customer's feedback and improving the IT tools to support the quality management process are priority. If Sharepoint is making an impact, then some other Microsoft applications can be considered as well like Power BI. Using Power BI and reducing the manual task in the quality department.

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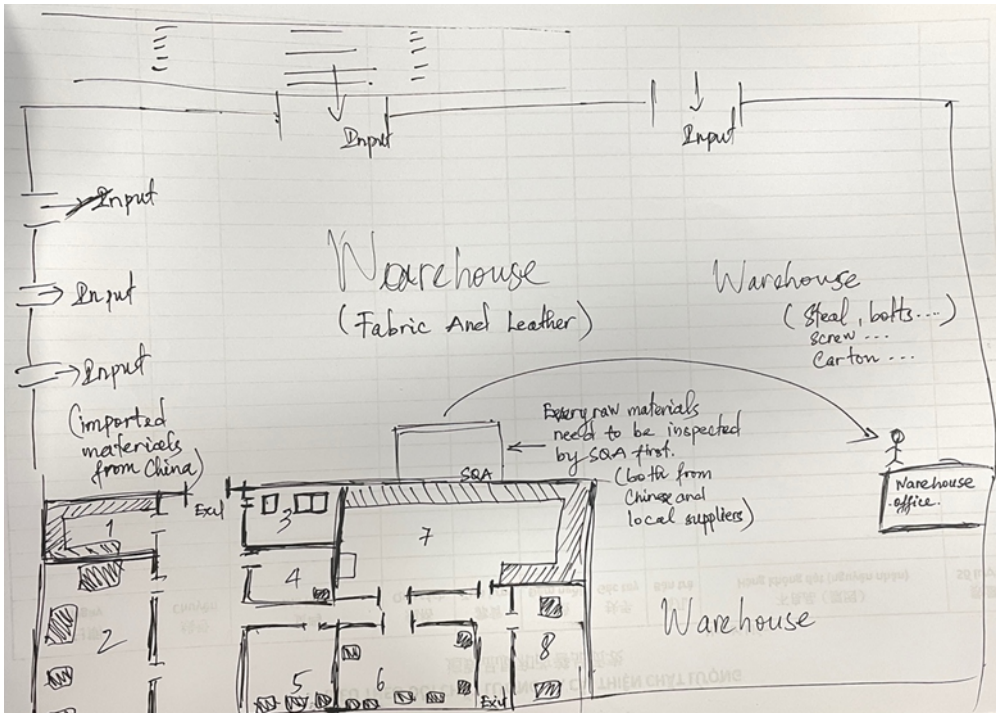
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Appendices

Appendix 1. K's inbound process map



Appendix 2. Quality return form

44-U3.0b9a1

越南品质部 CỤC CHẤT LƯỢNG VIỆT NAM 原材料质量问题处理单 ĐƠN XỬ LÝ VẤN ĐỀ CHẤT LƯỢNG NGUYÊN VẬT LIỆU THÔ							
seri:				到货工厂 Hàng đến nhà máy:			
nhà cung cấp	协易	品名 tên sản phẩm	五金	总数量 tổng số lượng	7000个	抽检不合格数 Số mẫu ngẫu nhiên không đủ tiêu chuẩn	
		料号 Mã vật liệu	批号 mã	抽样数 số lượng mẫu		材料批次 16 nguyên liệu	20220928
Mô tả vấn đề: 五金 01.52.05051 3000个。01.51.04038 4000个。本次测试为盐雾测试测试时间为10小时，测试后样品表面出现大面积腐蚀点，根据顾客标准该样品为不合格产品。 thử nghiệm này là thử nghiệm phun muối và thời gian thử nghiệm là 10 tiếng, sau khi thử nghiệm xuất hiện điểm ăn tích lớn trên bề mặt của mẫu, theo yêu cầu tiêu chuẩn của KUKA, mẫu được đánh giá là không đạt tiêu chuẩn							
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Xử lý hạ cấp							
Kử lý chiết							
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部门 Thông báo cho bộ phận	采购管理中心 Trung tâm Quản lý đầu thầu	钉钉 邮件	钉钉 邮件	工厂物控计划模块 Mô-đun kế hoạch kiểm soát vật liệu nhà máy	钉钉 邮件		
ghi chú:	1. 采购管理中心同事收到知会信息后需及时与原材料供应商取得联系，并配合品质部对原材料质量问题进行处理。 Sau khi nhận được thông tin thông báo, các đồng nghiệp trong trung tâm quản lý thu mua phải kịp thời liên hệ với đơn vị cung cấp nguyên phụ liệu, phối hợp với bộ phận chất lượng để xử lý chất lượng nguyên phụ liệu. 2. 工厂物控计划模块同事收到知会信息后及时与各生产相关单位联系确保生产不受影响。 Sau khi nhận được thông tin thông báo, các đồng nghiệp trong phân hệ lập kế hoạch kiểm soát nguyên vật liệu của nhà máy sẽ nhanh chóng liên hệ với tất cả các đơn vị						

Appendix 3. Survey questions

Trả lời sự kiện

Current quality process & Sharepoint demo



hahongngocc@gmail.com (chưa chia sẻ) [Chuyển đổi tài khoản](#)



Gửi lại để lưu

What do you think about the current quality process? 你对目前的质量流程有什么看法?

- It is not so good 不好
- It is good but need to be improved 好, 可是还要改善
- It is good and no need to improve 好, 不要改善

Do you think that the handbook must be in place? 你认为这本手册必须到位吗?

- Yes it should be 因该有
- No need a handbook 不要
- Either have it or not 随便, 有也罢没有也罢

What is the idea of Sharepoint? Sharepoint的方案怎么样?

- It is a good idea 好主意
- No it is too complicated 不，太复杂了
- Either have it or not 随便

Do you want to involve more in this quality management process development? 你想更多地参与这个质量管理流程的发展吗?

- Yes we want 想
- No it is not our responsibility 不是我的事
- It is up to the manager 随便领导