
TO IMPROVE QUALITY MANAGEMENT PROCESS

Case: Aiya Restaurant Chain



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ABSTRACT

The commissioner of this thesis was Aiya Restaurant Chain, a newly opened yet well known restaurant chain in Vietnam. The core idea of this restaurant is to provide its customers with high quality and hygienic street-side foods. However, the current food quality control process in Aiya is incomplete and leaves space for many defects. Food quality has always been the crucial issue to all restaurants. Yet to Aiya, it is considered even more important, because the quality of food relates directly to the mission statement of the restaurants.

The aim of this thesis was to provide a set of tactics to improve current food quality control process in Aiya. Primary and secondary researches were used in the study. Several interviews were conducted with the owners, and a survey among management team was done to formulate the overall picture of current situation in Aiya. The theory covered in this thesis includes general theory about quality and quality management, and the quality management process in restaurant industry. The two parts of theory were used in harmony to develop the solutions in the end of the thesis.

The empirical evidence indicated that there is a need for improvement at many areas of food quality control process in Aiya. Though the survey population was small, the response rate was 100 per cent, which increase the reliability of the findings. Base on the theory and current situation analysis, the author offers a set of tactics as a solution to reduce defects in food quality management. The recommendation was made focusing on three areas: the inventory, food production and customer interaction.

Keywords quality, quality management, process, Aiya Vietnam

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- työn tausta (ja toimeksiantaja)
- työn tavoite/tarkoitus
- työssä sovellettu teoria tai olemassa oleva tieto ja/tai taito
- työ-/tutkimusmenetelmät, käytetyt aineistot
- päätulokset
- johtopäätökset, kehitysehdotukset, jatkotoimenpiteet jne.

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1 INTRODUCTION

1.1 The importance of quality

Nowadays, customers have more options to choose from in whatever categories of products they purchase. Hence, customers become highly intolerant of shoddy products and poor services. Simply put, the era when customers have to learn to be pleased with what suppliers offer had gone long ago. Along with the fact the supply surpasses demand, customers are more and more demanding, because they are aware clearly that they exert control over the suppliers. The price is no more enough to conquer the market. In fact, customers are ready to pay more for a reliable product, which provides good value of money in their perception. As a matter of fact, the company known for good products benefit a lot from this solely. While other competitors are struggling with finding a way to make impression to customer to build their image, the company consistently provides good quality products naturally pops up in customer mind with positive image. Accordingly, since customers always consider quality products as their priorities, the competitive ability and market share increase and translate into profits. Quality does not only act as a competitive advantage, but it also enables other advantages on the way of development. Quality not only affects the revenue, observing from the internal aspect, it also impact positively on costs. Quality products reduce rework time, warranty costs, and increase the employee productivity. (Scarborough 2012, 580.) Therefore, producing high quality products is essential for every company to survive, grow and succeed.

Since customer expectation varies depending on many factors, defining quality in corresponding to target customer needs has always been a challenging task, yet it is only the first step towards the goal. The remaining part, which is even more challenging, is how to manage the quality to keep it in line with specified quality, as well as up-to-date to customer continuously changing expectation. Quality management becomes one of concerning subject in economic world, and its concept has constantly changed over the years. Every time it is redefined, the scope was expanded to cover more functional parts of the organization, spreading the influence of quality internally wider and deeper. These improvements aim to identical purposes: to maintain and constantly improve the quality of products and services. Today, the concept of quality management is applied worldwide in businesses of different sizes, operating in different industries. Nevertheless, the meanings of quality change from one industry to another, and require different sets of tools for effective management.

1.2 Restaurant industry in Vietnam

As the characteristics of the industry affects greatly to the meaning of quality, the author would like to introduce briefly about the restaurant industry in Vietnam. This is in order to give readers a more thorough look about the environment in which the company is operating.

Philip Kotler once said that Vietnam should choose “the kitchen of the World” as national branding image, for its rapid development of food service industry (A kitchen of the World, Saigon Times 2011). In Vietnam, restaurant business is among the most profitable, especially in big city. Vietnam has been among the countries that have greatest spending on food and leisure. Besides, dense population is another reason for huge and complex demand that always leaves places for new ideas to sprout and grow.

Currently, street and mobile vendors are the most profitable channels, which account for 45.7 per cent of food service sector total profit (Food & beverage in Vietnam, 2011). Similarly to many other countries in South East Asia, street side cuisine develops immensely in Vietnam. Vietnamese people prefer foods sold on the street sides, rather than those in well decorated restaurant. They believe mobile vendors sell the most delicious foods. Indeed, this belief is somehow true. Taking a look into best places to dine out in a reliable local website, vendors account for at least half of the suggested places.

The second profitable channels, which provide the sector with 42 per cent of total profit, are full-service restaurants (Food & beverage in Vietnam, 2011). Restaurants belong to this group offer foods in more polite and formal ways. Though the prices are usually higher than those of vendors, the services are better and food hygiene applies better standards. As food hygiene has recently been a popular topic, the channels are expected to expand rapidly in the near future.

1.3 Aiya Restaurant Chain

The first idea of this restaurant chain derives from a small habit of its owner – Vy Le. Vy especially likes street-side foods for their variety and palatability. However, her sensitive stomach always encountered problems afterwards, because the foods are done in low hygienic conditions. From the moment being a high-school girl, Vy has thought about the idea of creating a place where every can come to enjoy the street-side foods without worrying about the hygiene troubles. The first Aiya restaurant in the chain opened in 2009 officially bring the idea to real life. Aiya has been the first and the only restaurant sells street-side food with high hygienic standards. Since food hygiene-related issues were highlighted at that time, the establishment of Aiya received good attention from customers.

The foods in Aiya menu are very familiar with young Vietnamese people, who spent great amount of time around mobile vendors selling foods in front of schools and offices. Besides these traditional street-side foods, Aiya menu is enriched with many special dishes inspired from simple ingredients. These new yet delicious dishes have played important roles in attracting more customers to the restaurants. The street-side food menu mainly offers foods that are suitable for brunches or snacks. However, aiming to other customer targets, recently, Aiya also introduce lunch and dinner menu, to appeal customers who look for proper meals. The foods

can also be ordered from home or office with reasonable delivery fee, which make the restaurant a more convenient option.

In addition to safe and good foods, the decoration theme of Aiya is also a plus. “Enjoying meals in well decorated space definitely enhance the flavor of foods” – Vy said. The young owner herself has drafted the design for every detail in the restaurant, from the chair to wall patterns. With her passion and concentration, despite the fact that Vy had lack of experience in the field, the profit increased rapidly, and the restaurant chain can be considered as the success of a young entrepreneur. Up to now, the chain has four restaurants located in four different districts, recruits more than 100 employees, and serves thousand customers everyday. In 2012 and 2013, the owner expects to open five more branches in other cities, to reach more customers. (Aiya information, 2011)

1.4 Purposes and objectives

Surprisingly, the restaurant chain has grown to this size without any specific documented process of quality control. Since food quality and safety are attached closely with the restaurant image, it would be tremendously harmful if this neglect leads to a case of health problem. This study is made concentrating on food quality management process within the organization. The thesis takes customer satisfaction as a dimension of quality; however, focus on defining and solving the problems within internal process. Thus, the research question is:

- How to improve food quality control process in Aiya restaurant chain

The research question will be discussed in association with five objectives.

The first objective is to introduce the theories related to quality and quality management. Besides, as restaurant industry is special and different from others, the theories related to quality control process in food service industry are also included. These theories are used as theoretical background for the whole thesis, as well as to assist the author in providing suggestion to the organization.

The second objective is to describe the current quality control process in Aiya. This is to find out the rules according to which foods have been handled and controlled. The information about current process is gathered through several interviews with the owners. In addition, the author also studies the quality control process applied by other successful restaurant and the outcome will be used for benchmarking in the next chapter.

The third objective of this thesis describes and analyses the survey and its results. This survey is conducted among line managers. Through analyzing the results, the author expects to formulate the overall picture of current quality control process effectiveness. Together with theoretical background, the analyzed information in this chapter supports greatly to the recommendation part of this thesis.

The final objective is to make suggestions to improve food quality control process in Aiya. The author also provides the organization with a process-based model that is applicable for all restaurants in the chain, to facilitate the quality management. The recommendations are based on the theory and research outcomes, as well as author's own experience.

1.5 Research methods

This study is based on desk research in addition to field research. The theoretical knowledge is based on books, e-books and other publications. Different sources on the Internet were used, however, only as additional sources. General information about Aiya was taken from the slides provided by the owner.

The phone and email interviews with the owner are done several times to gather as detailed information as possible, and are considered as the main sources of information for current situation analysis. The empirical evidence is generated through the surveys, catering separately for three group of management. The results are collected by email. The author also uses her own experiences in analyzing the results of the questionnaire.

2 THEORY FRAMEWORK

2.1 Quality & quality management

2.1.1 The concept of quality

Quality, though widely mentioned as the key of success nowadays, is still the concept with no solid definition. Quality products can range from an expensive first-class car to a cheap small needle. Different people give different answers to the question “What is quality?” depend largely on the situation, and the products or services they receive. Nevertheless, a quality product or service has to meet or exceed customer expectation. (Howard, O’Conor & Darren 2000, 10.)

The quality not only varies from one customer to another, it also change according to which angle the producer uses to approach quality concept. A marketing manager may consider quality as a value-added factor to the product. His job is to make sure that this value is well recognized by the customers. Meanwhile, a production manager takes quality as the measurement of the performance. What he cares about is whether the quality outcome conforms to the standards and specifications. (Kemp 2005, 41.)

It will be challenging for a company to approach quality issues without knowing exactly what they are dealing with. Despite the fact that quality swings, according to Garvin (1984), quality can be seen and assessed under five views:

- *Transcendental view:*

The quality can be recognized, however, cannot be defined. It can only be acknowledged by experience.

- *Product-based view:*

The quality is assessed based on certain product characteristics.

- *User-based view:*

The quality of a product is measured by its fitness to customer usage

- *Manufacturing-based view:*

The quality can be measured by benchmarking to certain standards. Quality changes are the results of changing the inputs or manufacturing process.

- *Value-based view:*

The quality is decided by the price of the product. A quality product should bring the best value out of acceptable price.

2.1.2 Four hierarchical levels of quality

In the book *Total quality management*, Bhat (2010, 14) introduces Shiba’s point of view about levels of quality. The four following hierarchical lev-

els were observed when looking at the history of Japan as “a progression to higher levels of quality or fitness”

- *Level 1: Fitness to standard*

This means that the products or services are done precisely to the specifications, which the designers have described the products to be. At this point, the main methods to create and manage product quality are statistical sampling and quality inspection. These methods were brought to Japan in 1950s by Deming and soon became popular for its effectiveness in quality control. However, taking fitness to standard as the only concept of quality encounters two major mistakes:

- The control was done by filtering out the worst items. Still, the production process of better items remained dubious and good results cannot be guaranteed.
- Fitness to standard aims to designer satisfaction instead of customer satisfaction. The quality definition is subjective and does not connected to customer need.

- *Level 2: Fitness to needs*

Moving to this level in 1960s, Japanese enterprises took one step closer to their customers. The products are not only required to fit the specification, it is also necessary to satisfy customer need. Schneiderman (2006) provided a good example for this improvement. A Japanese dishwashing machine company noticed the high machine failures in one particular geographical area. Further investigation stated that local potato farmers used the machine to wash their crop of harvested potatoes. When the engineers told the farmers that they could not use the machine for this purpose, the farmers responded that there was no line in the manual said so. The company faced two options: to change the manual, or to change the machines. Later on, they chose to change the machines so it fit to wash not only dishes but also potatoes. This is an extreme example, however, it indicates very clearly the important of considering customer needs and integrate them into the products.

- *Level 3: Fitness to costs*

When all enterprises in field capable to specify the product according to customer needs, the competitive advantage belongs to those who can achieve the same quality at lowest cost. In order to reduce costs of quality control, the companies have to gradually replace inspecting quality by building quality into the products, to meet the goal of zero defects or 100 per cent quality.

- *Level 4: Fitness to hidden needs*

This is the highest level of fitness, where the companies identify and satisfy customers' needs before the customers are even know of those needs. Reaching and maintaining this level ensure the leading position of one

company, because it is always a step ahead its competitors. Research and development activities play significant roles here, because they support and facilitate the process of innovation.

In addition to the original four fitnesses, Schneiderman (2006) recommends the fifth fitness as a new quality dimension: fitness for society. Today, every movement of manufacturers can impact and cause irreversible changes to the environment. Therefore, in long-term development, showing responsibility to the society by protecting the environment become more important, as this has become a non-financial performance measurement recently.

2.1.3 Quality in the present time

In the past, quality, with small 'q' symbol, used to refer solely to product quality. The companies focused on producing products that are good enough to sell. The outputs are the most important. When mistakes took places, there would be some actions to repair; nonetheless, there is no attention on preventing the recurrence of the defects. Furthermore, customer feedbacks were not included into the quality management process. (Bhat 2010, 9.)

However, the concept of quality has changed gradually according to the transformation of the market. The situation has reversed. Basically, the supply has exceeded the demand, and customers have more options to think about. At this point, focusing merely on the product quality help nothing with gaining advantages against competitors. The Big 'Q' - a new approach to quality has been established focusing on three areas: product, process, and customer. Customer needs take an important part in the decision of product features. The defects should be prevented instead of repaired. People play major role in the process, and it is crucial to make sure that they perform the tasks properly. The company also needs to maintain customer feedback flow, as a valuable source to revise and learn from the mistakes. (Bhat 2010, 9.)

2.1.4 Quality management from the process point of view

During 1970s and 1980s, people believe that quality system is the dominant element of quality management. Nowadays, though this belief is outdated, it is still widely favored, and many managers still refer total quality management to quality systems. To be sure, the critical role of system and procedures should not be underestimated. It is efficient tool to manage the quality, detect faults, and maintain smooth information flow. However, the system itself cannot get the job done. If the employee do not really care about the procedure, or they do not mind to follow the instructions written in the papers, the quality is still out of control. Regularly, the managements decide to fix the system-focused approach failure by establishing an even heavier system and more detailed procedure. They expect to strengthen the tools to take more control of the situation. Nevertheless,

this only results in a bureaucratic system that generates stress for both employees and managements. (Giri 2010, 92.)

Giri (2010,80) proposes that quality practices can be divided into two categories: logical and behavioral. Logical category contains the systems, process control, procedure approaches which is built on basic of logic, measurements, calculation, etc. The behavioral practices focus exclusively on people-related aspect, their behaviors and commitments towards the quality. In fact, quality control is only effective when these two aspects are taken into harmony. The introduction of techniques and skills is significant. Still, without thorough understanding of people factors, the quality management process can suffer from high failure rate (Giri 2010, 92-93)

2.1.5 Four fundamental elements of quality management

Giri (2010, 92) emphasizes that quality contain four elements:

- *Systems*

Quality systems can be found in a range of documents of different organizations such as British Standard 5750, ISO 9000-9001, etc. An effective quality system is necessary for quality management. The following graph demonstrates the most popular quality system that is widely applied nowadays

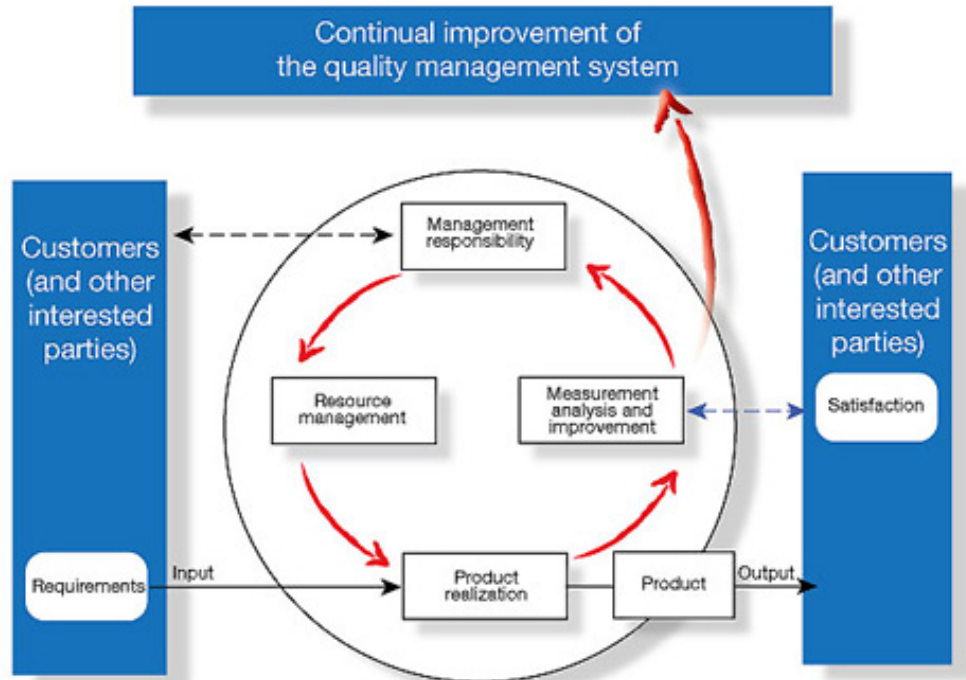


Figure 1 Quality system (ISO 9001, 2000)

- *Processes*

The key of process lies in hands of problem-solvers. There are tons of problems happen daily, even in the simplest and smallest organization. If the only one who can solve them is the management, the stress might be too much to handle. On the other hand, the management cannot manage all the problems and make decisions on time, which can lead to late actions. In order to improve the process, the most efficient way is to educate and train the employee in order to build a more efficient team in term of problem solving.

- *Management*

Giri (2010, 95) mentions two extremes of management styles: authoritarian and participative. Authoritarian style focus on giving orders and supervise employee to make sure that they obey accordingly. The participative style seeks a stronger relationship with the employee, and considers their involvement in decision-making process. The manager should choose the style that is most suitable to current human resource circumstance of the organization.

- *People*

It does not matter which style of management was chosen, people play an important role in the whole picture. The quality management can only be successful with the participation of people throughout the organization. (Giri 2010,95)

It is believed that the quality problems mostly occur because the workers do not care about doing their jobs properly according to the standards. Nevertheless, the responsibility only belongs to workers if:

- The worker knows clearly what he is supposed to do;
- He or she is aware of the desired result of the products;

Too often, the workers do not accomplish the job and produce fault quality product because of a mistake in management process. These mistakes include ambiguous product specification, poor working condition, and poorly defined desired outcomes. (Product quality 2006, 9-10)

2.1.6 Total quality management and Six Sigma

Total quality management philosophy defines product quality to conforms to defined standards that satisfy customer demands. The key point of this philosophy is getting all done exactly and properly right the first time. The company have to actively strive for the perfection or 100 per cent level of quality. The organizations applying this philosophy understand clearly the significant role of process in every part of the business, vertically and horizontally. Many companies allows certain deficiencies in quality in the range from 1 to 5 per cent. These companies accept an given amount of errors as daily routine in their operation, assuming that the amount is small and inconsiderable. However, customers do not perceive defects this way, because the unlucky customer suffering from poor quality product is affec-

ted 100 per cent. According to this philosophy, the companies can hardly achieve and maintain 99.9 percent quality, unless they constantly improve to reach the zero-defect point. (Scarborough 2012, 584-585)

Six Sigma

Six Sigma is a quality management methodology that relies on data collection and statistical techniques to improve the efficiency of processes and to maximize customer satisfaction. Six Sigma aims to high standard. It allows only 3-4 defects per 1 million opportunities. Though being used mostly in large corporations, this methodology can also be adapted to small businesses. Scarborough (2012, 584) states that Six Sigma is built on four key tenets:

- The customer’s need is the first priority. In order to delight customers, the company’s goal is to produce highest quality product in efficient and fast processes.
- Constantly improvement of the process is significant. According to W. Edwards Deming, quality problems mostly lies in the process created by the management rather than results from employee’s mistakes. Therefore, reducing the variation of the process is the best approach to lessen defects.
- Teamwork in process improvement brings better results regarding problem solving.
- The process must be improved and changed as a result of quantifiable measure analysis. Guesses are not reliable enough.

Six Sigma DMAIC approach

This approach is based on five principles, as a process guideline for process improvement. The approach is explained in following table:

Principle	Process Improvement Technique
Define	Identify the proplem. Define the requirements. Set the goal for improvement.
Measure	Validate the process problem by mapping the process and gathering data. Refine the problem statement and the goal. Measure current performance by examining the relevant process inputs, steps, and output to establish a baseline.
Analyse	Develop a list of potential root causes. Identify the vital few. Use data analysis tools to validate the cause-and-effect connections between root causes and the quality problem.
Improve	Develop potential solutions to remove root causes by making changes to the process. Test potential solutions and develop a plan for implementing those that are succesful.

	Measure the results of the improved process.
Control	Establish standard measures for the new process. Establish standard procedures for the new process. Review performance periodically and make adjustments, as needed.

Table 1 The Six Sigma DMAIC Approach (Scarborough 2012, 584)

2.1.7 Three types of quality control

Quality control refers to all the activities that need to be executed, in order to fulfill quality objectives of the organization. Quality control process takes in all the steps from the input of material to the output of production. Schermerhorn (2010, 121) point out that organizations interact with their environment through a particular cycle of input-throughput-output. In each phase, different types of quality controls are applied to manage the quality and amend arisen errors.

- *Feedforward controls*

This approach of control is proactive. Feedforward controls take place before the production begins. Many factors are taken into consideration, such as purchasing, inventory, procedure, employee training, etc., in order to prevent problems occur. At this phase, all the standards and rules are set to direct the work properly.

- *Concurrent controls*

This type of controls happens during the production process, when the employees are performing their tasks. The goal of these controls is to solve the problems when they occur, and ensure people do their job in conformance with the plan.

- *Feedback controls*

Feedback controls focus on whether the results match with desired standard or not. Hence, these controls try to correct the problems once they have happened, and record the mistakes for future learning to avoid the recurrence.

2.1.8 Quality management tools

There are different tools developed to support quality control. The managements should choose the most effective combination based on characteristic of the industry and organization current situation. This part introduces seven basic tools developed by Kaoru Ishikawa, and three additional tools suggested by other literature sources.

The basic seven tools

According to Kaoru Ishikawa, “father of quality control circles”, 95 per cent of problems arisen in enterprises can be managed and solved using seven simple control tools. Ishikawa creates the tool kit to simplify the statistical analysis, make it more understandable and approachable to average people.

- *Process flow chart*

Process flow chart is a simple way to record activities and decisions of different stages in the process. In order to be effectual, the chart needs to be easily understood, thus, improve the communication between people involving in the process. The chart is optimized if it is the result of teamwork. When everyone contributes to draw up the ideal chart, they tend to understand the process more thoroughly and ready for improvement. (Product Quality 2006, 12.)

- *Check sheets*

The check sheet is a form of document used to collect data clearly and in detail. Data collection, without proper control, can be unstructured and messy. Check sheets facilitate the data collection process by grouping data into clearly labelled categories, to keep it under control and easy to trace for later analysis. The first advantages of using check sheets are to a uniform structure for data collection process, through which data is displayed in effective way. Moreover, the tool is applied to manage the frequency and sources of problems occur (Product Quality 2006, 12)

- *Histograms*

The histogram is a bar chart used to organize, summarize and display interrelated data into groups reasonably for future use. Usually, base on the statistic, the sum, mean and max/min value of certain factors are calculated. The histogram display shows these values in the simplest way that is helpful for managers in decision-making situations. (Cooper Presentation n.d.)

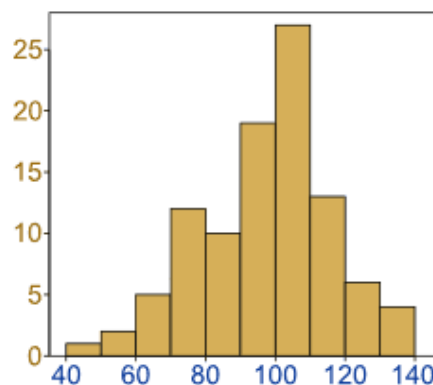


Figure 2 An example of Histogram (Product Quality 2006)

- *Fishbone Diagrams*

The fishbone diagrams are also known as Ishikawa, or cause and effect diagram. They are built based on the relationship between problems and

their potential causes. There is no statistical information involved, since the diagram deals with the factors only. The tool gives management the deep look into the reasons of problems, so as to make amendment in the right place. (Cooper Presentation n.d.; Product Quality 2006, 13)

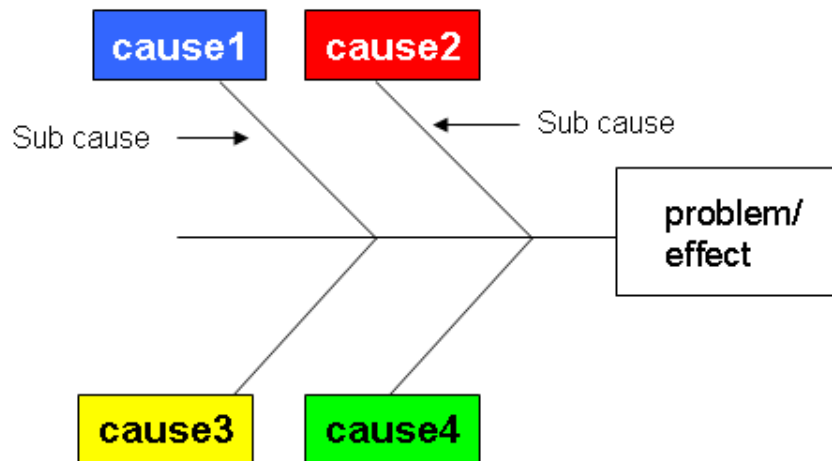


Figure 3 An example of Fishbone Diagram (Product Quality 2006)

- *Scatter diagrams*

Scatter diagrams are used in cases the managers want to find out the relationship between an independent and a dependent variable. Unlike fishbone diagram, it does not prove if one variable is the cause of the other. It only objectively shows the relationship existing between two tested factors. Frequently, in the diagram, the horizontal axis demonstrates a controllable variable, and the vertical axis is for the one that varies and depends a lot. The data is plotted in dots. Closely grouped dots along the axis means strong correlation and vice versa, the more scattered, the weaker the relation is. (Product Quality 2006, 16)

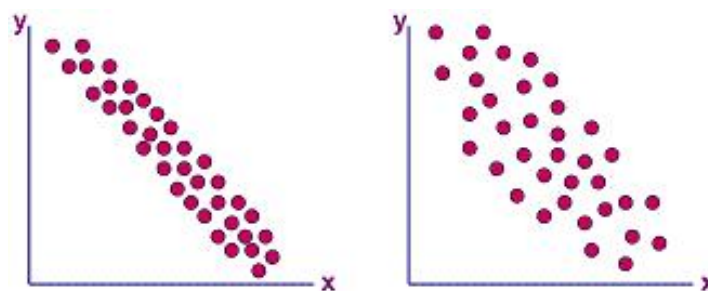


Figure 4 An example of Scatter Diagram (Product 2006)

- *Pareto analysis*

Pareto analysis is somehow similar to histogram. However, it incorporates Pareto theory of 80/20 rule and displays the data accordingly. Pareto analysis emphasizes on the problems that occur most frequently. According to this theory, the managements should focus on tackling these problems first

because these are the most vital to the operation. The chart is the combination of a bar graph and a line chart. The bar graph displays the problem statistic in descending order, while the Pareto line demonstrates the cumulative percentage of total number of occurrence in each problem area. (Product Quality 2006, 14-15)

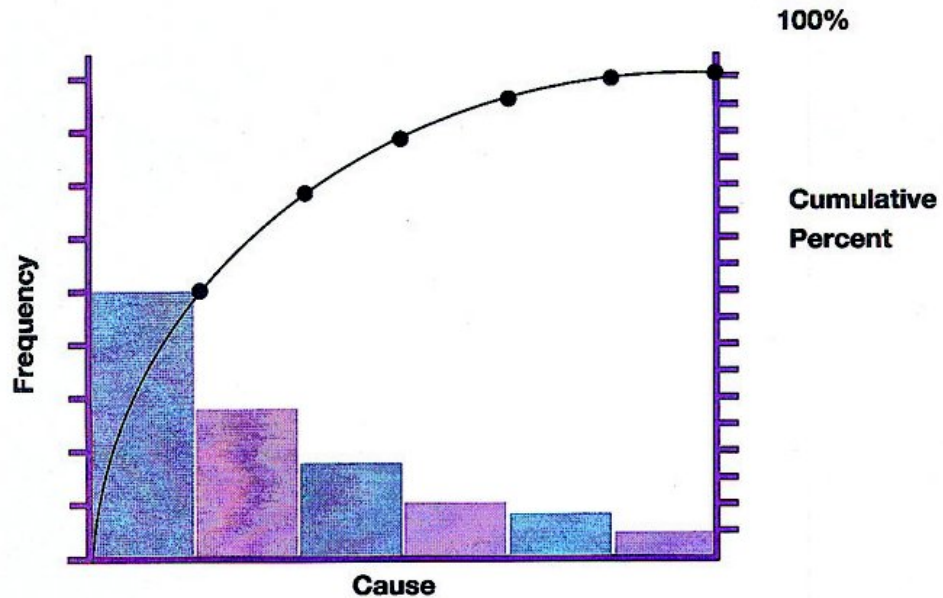


Figure 5 An example of Pareto analysis (Product Quality 2006)

- *Control chart*

The control chart is a tool adapted to W. Edwards Deming principles. The chart consists of two axis and three lines. The centerline stands for the average quality characteristic. The upper line demonstrates upper control limit (UCL), and the lower line represents for lower control limit (LCL). Samples are drawn randomly from the process during a period of time. If the sample quality measurement falls between UCL and LCL, the quality is under control. Otherwise, when it is beyond the UCL or lower than the LCL, management should investigate to find the problems affecting the quality. (Schermerhorn 2010, 126; Chunawalla 2008, 78-79.)

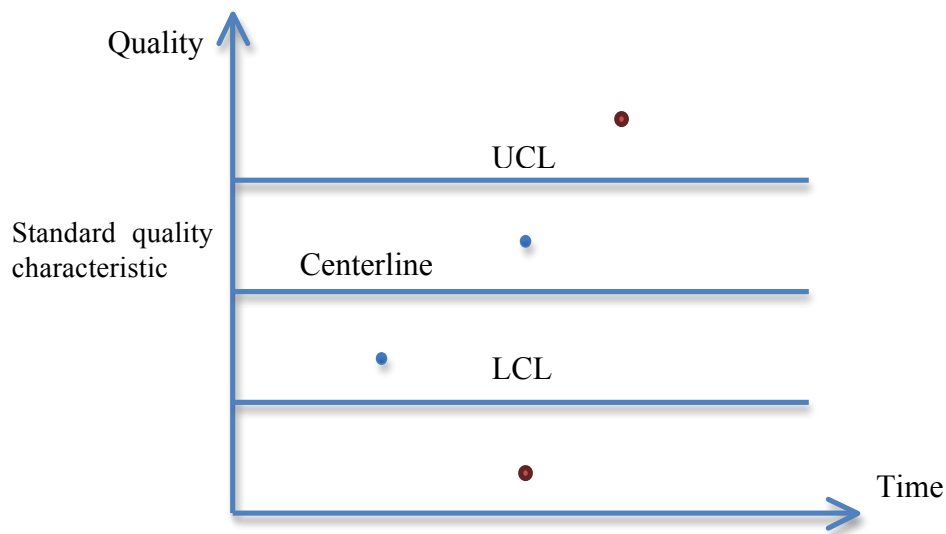


Figure 6 An example of control chart (Schermerhorn 2010, 130)

Quality-related cost

Once identified, quality-related cost is a very effective tool to control quality. There are two possible approaches to identify quality-related costs. The company can expand its accountancy system to follow closely the costs occur, and trace every single cost derives from poor quality. However, to build and maintain such system can be even more expensive than the costs to investigate. The quality-related costs vary a lot, depends on the origin problems. Among these problems, some are big enough to create big loss of money, while some are very tiny and unremarkable. According to Pareto principle of 80/20, 80 per cent of the cost of poor quality comes from merely 20 per cent of the problems, which mean the 80 per cent of the problems left only accounts for 20 percent of the cost. The efforts to capture all quality-related costs will consume huge amount of unnecessary time and money. (Giri 2010, 87.)

The second approach is to estimate. There are important few categories of costs within an organization whose data can be retrieved. Noticeable quality-related costs usually belong to these groups. The management should estimate the minimum costs of these cost-driven factors in no-deficiency circumstance. The management can control the quality using the estimated cost as a standard. Deviations from the standards are the signal to the change of quality. (Giri 2010, 88.)

Standardization

Standards are sets of quality characteristics that have been clearly defined to be observable and measurable targets that the management expects products, services or processes to comply with. Standardization is the process of creating sets the standards; continuously checking if the process follows these standards, and making amendment in necessary cases. In or-

der to standardize something, first of all, the managements have to understand the standards fully. They also have to obtain a suitable way to compare the products or processes to the standards, and identify which range of variation is acceptable. In case errors occur, the managements have to consider and take suitable actions to fix the problems. The process of standardization contributes greatly in terms of increasing the conformances of the product to quality standards. (Kemp 2005, 49.)

2.2 Food quality management in food service industry

2.2.1 The nature of food

Foods are different from many other products. Even in a small restaurant, many different food types and categories are served; each required different handling technique. In restaurant industry, the product and service cannot be separated from each other. Despite of recognized standards, each chef retains the right to finish the food with a personal touch – which is sometimes very crucial to appeal customers. The standardization of food production is difficult and time-consuming, because the ingredients and cooking techniques varies a lot. Besides, raw material purchase and inventory also need dedicated arrangement, due to different perishable degree. (Sethi 2004, 3.)

Unlike other products, foods are easily pilfered, contaminated, spoil and wasted. Besides, the hygiene problem cannot be overemphasized, since once foods are consumed there is no way to retrieve them. Nothing can be more harmful to a restaurant image than hospitalized customers for food contamination. Hence, strict control during the process is crucial. (Sethi 2004, 3.)

2.2.2 Food quality assessment

The common point between quality of food and other product category is the subjectiveness in terms of quality perception. Different customers come with divergent preferences, which makes quality concept become even more relative. Although customer expectations vary according to their criteria, there is still a common level of quality that can be managed – acceptable quality. At this level, the food may not totally satisfying, yet neither does it create disappointment. The acceptable quality can be considered as the bottom-line in quality control. ((Sethi 2004, 272- 273.)

Talking about food usually leads one thinks about sensory. However, under management point of view, food quality is also based on quantitative and nutritional standards. The factors decide quality of food served is indicated in the graph below:

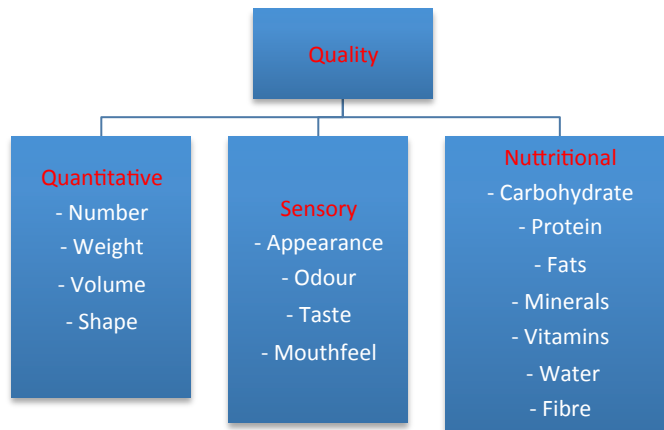


Figure 7 Food quality assessment (Sethi 2004, 275)

The quantitative aspect reflects the amount of each ingredient in a food plate. To the management, it is a cost control tool, while customers look at it to assess the value of money. The sensory aspect is the most important in customers' point of view, and nutritional part is to ensure the nutritive value in each food portion. (Sethi 2004, 274 – 293.)

2.2.3 Food quality control process

Sethi (2004, 309 – 440) propose that food-handling system in the restaurant consists of five main phases:

- Purchasing
- Inventory
- Food production
- Food service
- Waste management

In order to manage food quality effectively, managements need to pay great attention to each phase to ensure the flow is free of defection. Mistakes happen in one phase can affect greatly to the quality of food served.

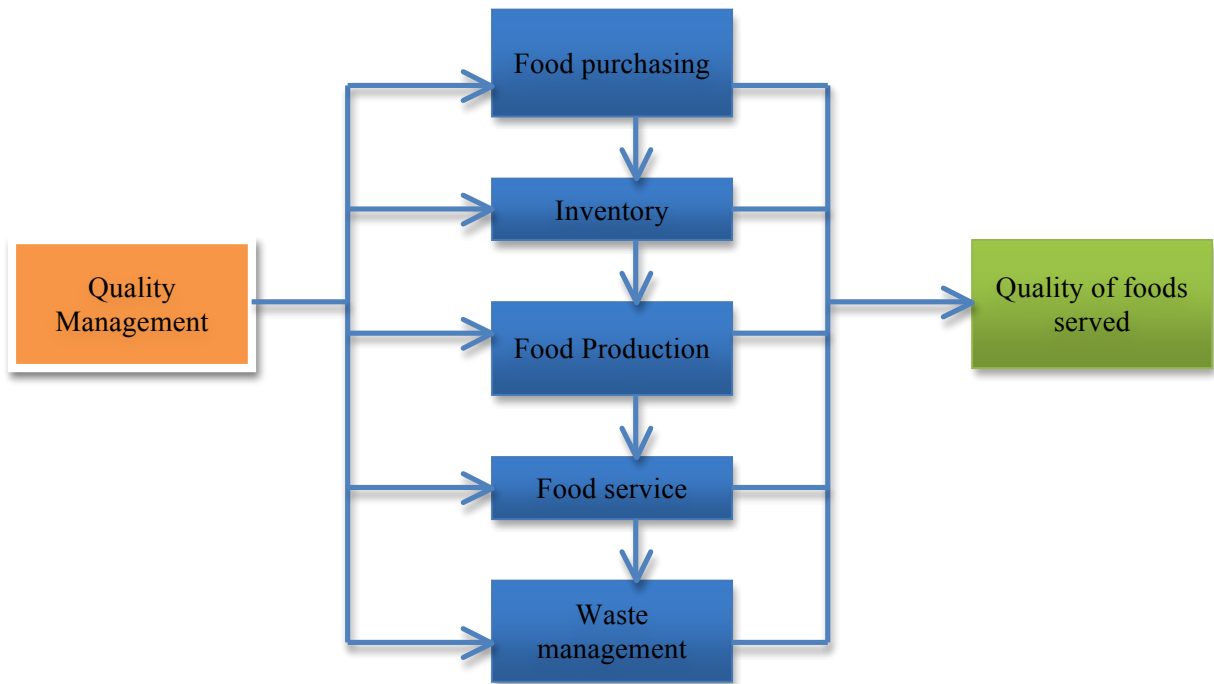


Figure 8 Food quality control process (Sethi 2004, 300)

Purchasing

Food purchasing is a set of activities established to acquire food and related materials that is necessary for the operation of the organization. In this competitive economic environment, purchasing is an important factor determining business success. The quality of food can only be ensured if the ingredient inputs are good. Food purchased for family use purpose can be selected directly from the markets; thus, quality is easier to be assured. On the contrary, restaurants usually purchase food in large volume and have them delivered to the door, which make quality assessment become more passive. Hence, managements need to set and base on certain principles to maintain the quality of purchased ingredients. According to Sethi (2004, 309) there are nine basic principles that support decision-making in purchasing process.

- The continuity of supply need to be maintained to minimizes the chance of disruption in food production.
- Managements need to consider carefully and decide the minimum investment in stocks. Since food production requires the stocks of wide range of foods, stocking, together with storage and handling costs can be huge enough to restrain the flow of capital.
- The stocks need to be secured from pilferage, spoilage or quality deterioration. Some foods are easily spoiled if purchased too long before usage. Purchasing food in big volume can be economical in

terms of cash discount; however, issues related to securing the stocks can be more costly in the long run.

- The quality of food should be assessed based on real quality of each delivery. The grades of brand or standard quality marks on the package do not always match with real quality. Therefore, fresh food such as vegetable and fruits should be delivered directly to the kitchen and checked immediately.
- Purchasing at low cost has always been the priority of managers, because it affect directly to the profit. However, getting cheap, low quality materials will be harmful to the business. The effective way to reduce costs of procurement is negotiating to obtain long term cut on packaging, delivery and so on services, without changing the standard quality of ordered materials.
- Duplication and waste can happen frequently without continuous interaction between purchasing and production departments. Effective interaction also assists the purchasing department to develop suitable procurement plan to meet production needs.
- Purchasing managers should have good knowledge of the competitors and their purchasing policies, as a tool to assist in predicting the taste change of customers in advance.
- The image of the organization with suppliers is a two-edged knife. In order to make it become an asset, purchasing department have to build good image by imply ethical standards that reflected during purchasing process. Good image is critical to build long-term relationship with suppliers. It brings along valuable information about new products or cheaper substitute materials that enable the organization to take a step ahead its competitors.
- Having good principles and policies is not enough to change the situation. The key point is to have people understand thoroughly the principles and work according to the rules.

Inventory

Inventory is an important part of supply chain. This concept includes all materials and works carried out in the process to finished products. According to Hugos (2003, 12-13), there are three basic types of inventory that is decided based on the inventory creation and holding; each comes with certain trade-off

- Cycle inventory: This is the amount of inventory needed to satisfy the demand for production in certain periods. The organization can gain economies of scale advantages if purchasing and production are done in large volumes. However, the increase in sizes of lots comes together with huge carrying costs. These costs derive from storing, handling, and insuring the inventory. Hence, managers

face the trade-off between better offered price comes with increased carrying costs, and overall cost reduction by ordering in small quantity with no advantages of economies of scales.

- Safety inventory: The managers hold this inventory to prevent the supply continuity from uncertainty. The demand forecasting is not always accurate. Therefore, additional inventory is necessary to cover the uncertainty of unexpectedly increase demand. The managers need to consider wisely the most efficient amount of stocks. The trade- off here is how to balance the risk of sales loss due to discontinuity of material supply and the heavy carrying cost.
- Seasonal inventory: This type of inventory is built up according to the predictable increase in demand in certain periods or seasons, in order to maintain the stability of the production process in peak times. The inventory is planned in advance helps to reduce the stress among employees due to sudden change in production rate. The trade-off here is between the seasonal carrying costs and the cost to facilitate increased production rate.

In general, effective inventory management purpose is to keep stock level reasonable and support best to production, while ensure that there is no unnecessary blockage to the capital. In other industries, the material categories are somewhat stable for certain periods, and product changes are clear and in few numbers. Food and beverage industry is different. It requires high level of flexibility and adaptability in inventory management. What ingredients to order, when to order and reorder it depend mainly on changes of menu or seasons of foods. Thus, the managements need to choose effective tools and methods as frameworks for the calculation.

There are two methods that are widely used in managing inventory, the ABC analysis and Economic Order Quantity (Sethi 2004, 346)

- *ABC (Always Best Control) Analysis*

The original idea of ABC Analysis is Pareto's 80-20 rule, which states that in most of the cases, 80 per cent of the effects incurring because of 20 per cent of causes. The food ingredients are classified under three groups A, B and C, in compliance with their importance to the production. The level of controls varies accordingly, thus, avoids wastage of time and money. (Mekala & Hariharan, presentation n.d.)

The basis of ABC analysis is total value of annual consumption. For instance, A category contains the items generating highest annual value. These items should receive great attention from managements. Meanwhile, items fall into group C with low annual value require least notice. Between these two groups is the B group, whose annual value is average and accordingly requires average attention. The boundary between A, B and C group are set by managers. The relation between importance of materials and level of control is demonstrated in following table (Agarwal & Indeevar, presentation n.d.)

	A	B	C
Annual Value	High	Moderate	Low
Control	Very strict	Moderate	Least
Ordering	Daily/weekly	Monthly	Yearly
Safety stock	Less	Moderate	High
Handled by	Senior officers	Middle management	Delegated

Table 2 ABC analysis (Agarwal & Indeevar, presentation n.d.)

- *Economic Order Quantity*

This method assists the managers in making decisions regarding to quantity of materials need to be ordered and when to order or reorder them. Mainly, the method focuses on calculating the optimum size of order for each ingredient, based on the usage rate of the stock, ordering cost, carrying cost and lead time. The economic order quantity can be calculated using this formula (Sethi 2004, 349)

$$EOQ = \sqrt{\frac{2AO}{c}}$$

Where

EOQ	= Economic quantity per order
A	= Total annual requirement
O	= Ordering cost per unit
C	= Carrying cost per unit

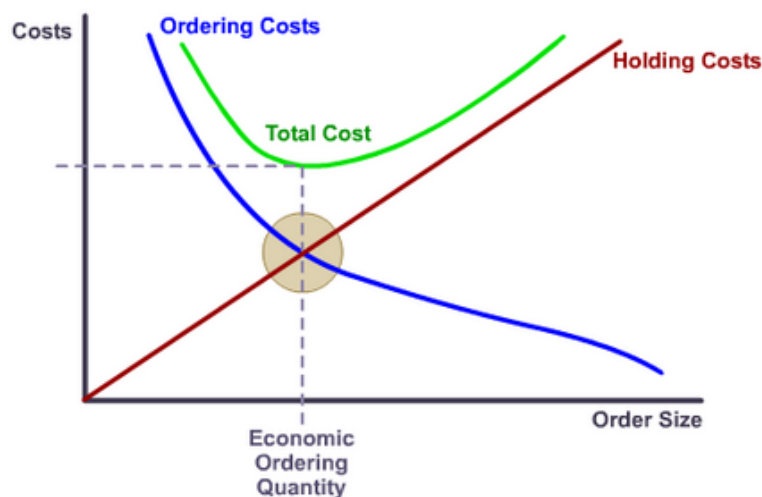


Figure 9 Economic ordering quantity (Sethi 2004, 349)

However, the equation itself is theory-oriented, since it bases on many assumptions that are not flexible enough to be applied directly to food inventory management. For example, the high fluctuation of ingredient usage rate as well as the fact that purchasers have to buy according to the standard wholesales packs available can create difficulty for the calculation and make the result less accurate. In order to use this equation as a tool effectively, managers have to use it with supports of good information system to modify the assumptions up on situations, thus build a new effective formula correspondingly.

Food production

The ingredient should be collected in advanced to be ready to use the next morning. This can help to prevent wasting time and reduce workload and pressure. It is significant to weigh and measure the ingredients exactly in order to maintain the same quality of the dish every time it is served to the customers. Each recipe calls for specific and different preparation methods and equipment. Thus, preparation techniques are important to ensure the desired quality of the results (Sethi 2004, 408)

Food production is among the most critical step, because it affects directly the quality of foods in every aspect. To assure food consistency even in case of production in large quantities, recipes need to be standardized. The standardized recipes, in order to be useful guide, have to be as detailed as possible. Sethi (2004, 409) suggest the recipe to include:

- Name of the item and file code if there is any
- Quantity and number of food portions
- Clear measure or weight of ingredients
- Any emphasized information such as how to garnish or serving temperature
- Cost information
- Description of desired quality
- Estimated time of cooking

In addition, food preservation is also a part of food production. Holding techniques is significant in terms of maintain the consistent quality of foods during serving time.

Food quality testing

Food quality testing is the term refer to set of activities ensure the quality of food before it is served to customer. The testing should be examined every time a new dish introduced into menu; its quality should be ensured first by experts, or at least the management of the organization. Every dish should have its own specification of quality, based on which the quality is determining.

Secondly, testing finished products before it is served to the customer can never be neglect. There can always be mistakes in production step that affect the end quality. Continuous control at this point is critical as the last

barrier to prevent quality-related problem from occurring. (Sethi 2004, 297)

Hygiene control

The hygiene issue even comes before the palatability, because it has directly effect on customers' health. If hygiene is well managed, the organization can strengthen its competitiveness reduce greatly the risk of losing customers. Factors affecting hygiene cover a wide scope, from food handling practices to the habits of people who handle the foods. In detail, hygiene management cover these areas:

- *Environmental hygiene and sanitation*
 - Site
 - Structure
 - Equipment
 - Air
 - Light
 - Water supply
 - Waste disposal
- *Personal hygiene*
 - Health
 - Grooming
 - Work habits
 - Behaviour
- *Food handling process*
 - Receiving
 - Storage
 - Preparation
 - Cooking
 - Holding
 - Serving
 - Disposal
 - Food handling code
- *Customer's role*
 - Perception
 - Behaviour
 - Reactions

According to Lynn (2001,195), to manage sanitation, managers have to apply different methods to reinforce employees to follow the standards. Total sanitation inspection should be kept at least once every six months, in all listed above area.

3 CURRENT SITUATION OF FOOD QUALITY CONTROL IN AIYA

3.1 Food quality control process in Aiya

Though the quality control process at Aiya was not documented, there was several rules establish in different food handling phases to ensure certain level of quality management throughout the chain. As a full-service restaurant chain, Aiya also adopts the standard food-handling system, which is widely used in food and beverage industry. The system can be found in the previous chapter of this thesis. The owner is aware clearly that food quality can only be ensured if raw materials and production processes experience no defect. In other words, to control the quality of the end dishes requires parallel quality control in different departments.

3.1.1 Purchasing

Currently, Aiya purchases the materials from several suppliers. Different suppliers are responsible for different categories of ingredients. Most of the suppliers are well-know supermarkets and wholesalers, who are reliable and capable to maintain the continuity of supply. However, occasionally, the suppliers fail to fulfill the order in time because they run out of stock. The categories that often experience late delivery are frozen materials. The delay can be some days up to one week.

There is actually no purchasing department at Aiya. In the beginning, the prices of materials are negotiated directly between the owner and suppliers. However, the prices fluctuate according to market price and vary depending on seasons, which makes the initial dealt prices are relative and only act as a reference for latter price adjustment. Usually, the negotiation outcome is a certain discount percentage comparing to current market price. Thereafter, the pricing control then delegated to two sections: the inventory and accounting departments. Besides negotiating the price, the inventory department also researches the market price on a regular basis, so as to feedback immediately if the offered prices are higher than that in the markets. The accounting department is responsible for checking if the inventory department is doing the market price researches. Occasionally, this department also do the researches and report to the owner.

According to the owner, in some ingredient categories, the offered prices are slightly lower than market prices. However, the difference is not significant. The main reason to choose supermarkets and wholesalers over the open markets is more stable quality. In addition, these suppliers show more responsible attitude regarding the quality of their products.

The quality of materials is inspected right at the moment they are delivered. The deliveries usually come in the morning; hence, the chef that

works in the morning shift does the inspection. There are two factors that need to be checked carefully:

- The quantity, if it is according to the order;
- The quality, if it is according to the standards.

Nevertheless, currently, the quality of input materials has not been standardized yet. There is no document that states the desired quality, and proper procedure to check if the products meet the requirements. The chefs assess quality solely base on their experiences in the field. Low quality products can be changed or returned immediately. Depending on the situation, the suppliers may resend the same amount of materials within the day or one day later at the latest. In case the quality and quantity are adequate, the bill will be sent to and paid by accounting office, according to the price dealt previously.

In order to facilitate the ordering process, the food materials are divided into two groups:

- Long storage life materials include dry ingredients and seasonings that can be preserved for long-time use. The materials belong to this group are checked every week, and ordered if needed. The restaurant manager is responsible for this category.
- Short storage life materials include fresh meats, fruits and vegetables that need to be consumed in short time to ensure quality. This category of ingredients will be ordered in small quantity and checked everyday to reorder if needed. The prices of these fresh materials are negotiated every 15-30 days by the accounting and inventory departments. The chef is only responsible for ordering directly from the supplier and confirms the quality of delivered products.

The process was established and continuously improved during two years. The improvement was done every time the defects were detected; and most of the time, the owner is the only one who revises the process and makes improvement. However, the current process still suffers from inefficiency. The shortcoming that mostly concerns the owner lies in the price control step. Though the owner dealt the prices herself firstly, the latter process is delegated. Recently, Vy Le had to fire an inventory manager for cheating. This manager negotiates with the suppliers to note down to bills a higher than actual prices, so the exceeded money would be share between them. At the present time, the only method used to inspect fraud is to keep track of regular market price researches.

In addition, there were some researches carried to collect information about suppliers and supply chain management of other restaurants in the field. However, the outcomes are not informative enough to be used as data sources for benchmarking.

3.1.2 Inventory

Aiya restaurant chain currently has one center warehouse and four small storerooms that locate inside the restaurants. The inventory manager is in charge of the center warehouse; while the chef and manager in each restaurant are responsible for the storeroom.

The storage life of input materials has not been totally standardized yet. Apart from the expiry date printed on the products, there is no exact usage time frame for fresh meats and vegetables that are processed in advance. Chefs' experience is still the most important source to rely on, in terms of food quality determining. Despite the lack of standardization, the amount of wasted materials due to expiration is not great, as the storerooms are required to be checked frequently. Products whose expiry dates are coming shortly will be distributed to other restaurants in chain; in addition, restaurant managers also established sales for the dishes call for these ingredients to accelerate the usage.

Safety stock

In order to maintain sufficient quantity of materials, the owner established a set of regulations regarding safety stock. In Aiya, the safety stock calculation is simple; it is the usage of a certain ingredient in two days. On the 15th of each month, the restaurant manager and chef in each restaurant have to check the storeroom for safety stock of every ingredient; hence new order will be made immediately if the stock of some material is under safety rate. On the other hand, the center warehouse makes order to all ingredients every month to ensure the continuity of supply sources. The quantity of ingredients is also monitored every time delivery note are made. The remained amount of materials always needs to exceed the safety stock amount.

Shrinkage and employee theft

The shrinkage control is mostly performed in the restaurants and storerooms, rather than in center warehouse. The daily usage of each ingredient and remained storage amount are recorded and compared to the number calculated by POS, based on every day sales. The owner, with strong awareness of her small time budget to spend at sites, designed a very strict cost-based price calculation. According to this, the cost of ingredients always accounts for less than 30 per cent of the dish price. Before added to the menu, each dish undergoes a strict price calculation, through which the desired amount of each ingredient used is also reckoned. The following table shows an example of cost-based price calculation.

Product	Code	Ingredient			Market price (per kg/l) (VND)	Price per por- tion (VND)	Total cost (VND)
Stir- fried beef and rice	GV0056	100	gr	Rice	16,200	1,620	16,759
	TT017	60	gr	Beef	205,000	12,300	
	RQ0023	20	gr	Red pepper	38,500	770	
	RQ0037	20	gr	Green pepper	25,000	500	
	RQ0015	20	gr	Onion	12,200	244	
	GV0039	1	gr	Seasoning	5,000	5	
	GV0010	40	ml	Oil	77,000	1,232	
	GV0028	10	ml	Soy sauce	4,200	88	

Table 3 An example of cost-based recipe

The quantity of each ingredient needs to be strictly followed, in order to ensure the profit margin and facilitate inventory control. The information will also be input to POS (Point of Sales) software, which is installed in all the restaurants. Base on the number of portions sold, this software provided the corresponding usage amount of each ingredient in certain period. This number will be compared to the actual usage. If there is great gap between the two figures, shrinkage should be investigated.

Together with comparison method, there is another method used as an overall shrinkage indicator. Because the ingredient cost were calculated with low flexibility, if total ingredient cost in a week exceeds the weekly revenue, it is probable that shrinkage occurred.

In the center warehouse, the shrinkage is checked once per month, using store records, including delivery and receipt note. Both notes require signatures from the inventory manager, accountant, and the transporter who takes or brings the ingredients. To support the management, the materials stored in the warehouse are divided in different groups of suppliers, each ingredient in a group is arranged according to alphabet order with a specific code.

Occasionally, the ingredients need to be disposed because of poor quality. In these cases, the chef has to fill in a disposal form with the confirmation from the restaurant manager. However, to save time, the disposals forms can be filled and confirmed once a week rather than every time these happen. There is also a notebook used as communication between the shifts.

In this book, the cooks will note down the status of remained ingredients in the kitchen, such as which are already prepared in advance and which are not ready, for the ones in the next shift to follow up easily.

3.1.3 Food production

Every kitchen has one chef and two or three cooks. Both the food and beverage are prepared in the kitchen. When a new cook arrives, he will attend a one-week training conducted by the chef to be familiar with the menu, recipes and cooking methods in Aiya. The recipe established to calculate the price introduced above is the only official version of recipes available in Aiya up until now. However, this type of recipe is not convenient to cook accordingly, as the amount is stated in gram and using scale is time-consuming. Therefore, the owner has converted the amount to tablespoon and teaspoon for easier production. Nevertheless, there is rather high inconsistency in the quality of served dishes. For instance, a cook reproduces the same dish with worse flavor when he has to cook larger number of portions.

Besides, at the present time, the preservation procedure is absent in Aiya. There are certain ingredients that need to be prepared in advance and require special method to preserve the quality. Nevertheless, the chefs control this procedure solely base on his experience in the field, since there is no document instructing the preservation process.

3.1.4 Hygiene control

The hygiene control in Aiya is divided in two areas: in the kitchen and in the serving place. In each area, there is a checklist, in which states the hygiene-related works that need to be done. The manager will check the serving place, and the chef is responsible for the kitchen hygiene. Because the checklist clearly states the name of worker who is in charge of certain works, if the works are not done properly, the manager can easily trace the neglect person for punishment.

In the kitchen, there are also hygiene regulations to ensure the foods are hygienic and poison-free. However, according to the owner, though the regulations are clear, the awareness and moral among employees are low. This requires more supervision to ensure the works are done in accordance with the rules.

3.1.5 Quality testing

Before serving the food to customer, the quality will be observed by the waiters. If there is any suspected problem, such as strange color or different proportion of ingredients, the waiter should bring the dish back to the kitchen immediately. Service leader and restaurant manager are also required to be active in observing served dishes to prevent defects before those happen.

On the other hand, the restaurant manager and the owner will test the flavor of new dishes before introducing them to the menu.

3.1.6 Quality control section

Because quality is one of the most important missions of Aiya, the owner believes that it is important to have quality control section in the organization structure. Currently, this department has two employees. One quality control executive is in charge of checking the quality of food production and customer services; and the other is accountable for the cashier accuracy. However, these executives do not stay full time in any restaurant. They move from one restaurant to another without notice to check for the quality of foods and services, as well as hygiene issues. The outcomes of these visits will be filed and signed by the restaurant manager, then reported to the owner for improvement if needed.

3.1.7 Interaction with customer

At the present time, there is no procedure to record customer opinions as a source for future development. During the training, the waiter is instructed to take customer feedback as frequently as possible, for instance, after they finish the meal and waiting for the bill. However, this is encouraged but not obligated tasks. The importance of customer feedback is hardly recognized among the employees, partly because of the lack of facility and training related to this issue.

3.2 Empirical study

The current quality control situation in Aiya was summarized base on several telephone and e-mail interviews with the owner of the restaurant chain. Though the advantages of direct interviews include updated and accurate information, as well as valuable assessment and personal opinion of the owner, this method can be biased if it is used at the only direct to approach the situation. Besides, there has never been any survey conducted internally since the first restaurant opened, the owner expect to have the first survey among the managements to measure the fitness between actual works and quality regulations.

Hence, the author designed a questionnaire for the management in Aiya, in order to gather more insightful information about current situation from the management point of view. The outcomes also are also expected to indicate whether the management team understands current food quality management system of Aiya and their roles in the process. The questionnaire and its results are described and analyzed in the following chapter.

4 THE FOOD QUALITY CONTROL PROCESS UNDER MANAGEMENT POINT OF VIEW

In this chapter, the author introduces the research methods used to generate empirical evidences and the survey design. The questionnaire is described and the results are analyzed thoroughly to provide further information about the current situation of quality control in Aiya.

4.1 Research method and survey design

The survey is designed for the management level in Aiya, which only includes an inventory manager, four chefs and four restaurant managers. Though there is small number of respondents, the quantitative methods are still chosen, because of specific reasons. Firstly, the owner suggests the survey method rather than others, because the respondents remain anonymous and the answers are confidential, which is believed to generate more truthful answers. Secondly, the decision making process is currently done by the owner solely. The management team only performs according to the regulations and orders made by the owner, rather than sharing strategic view and contribute to the development process. The fact that the current management team is passive and lack of knowledge in quality control can make qualitative methods such as interviews encounter difficulties and generate insufficient information. Therefore, the author decides to use quantitative method as the optimal way to collect data.

Before developing the questionnaires, an interview with the owner regarding the structure of management team and the role of each member in quality control process was conducted to make sure the questions are relevant and useful. In total, three questionnaires were developed; each of them is catered specifically to gather information about different steps of quality control process.

The managers are divided in three different groups according to their role in food quality control process as demonstrated in following table.

	Inventory management	Food production management	Customer service management
Inventory manager (1)	X		
Chefs (4)	X	X	
Restaurant managers (4)			X

Table 4 Managers' roles in food quality control process

According to the table, the questionnaire designed for group of chefs needs to contain both inventory and food production management. Meanwhile, the inventory manager only fills out the inventory survey; and the restaurant managers are asked to fill out the customer interaction questionnaire.

The structure of the questionnaires is illustrated in the table below

Questionnaire	Respondent target group	Scope	Number of multiple-choice questions	Number of open-ended question(s)
1	Inventory manager	Inventory	7	1
2	Chefs	Inventory	5 *	1 *
		Food production	8	1
3	Restaurant managers	Customer interaction	5	0

Table 5 Structure of the questionnaires

Because the survey population is small, the author specially composes the question to be as neutral and harmless as possible. 2 of 7 multiple-choice questions in the first questionnaire are only for the inventory manager. The other 5 questions and 1 open-ended question are also used in the inventory part of the second questionnaire. Therefore, the result analysis of this part will be merged to the first questionnaire analysis, for optimal comparison.

In general, the analysis will also be divided in three different scopes: inventory, food production and customer interaction.

4.2 Procedure

The three questionnaires were placed on Formstack website, a platform that provided tools for surveys; and links are sent to the email of managers provided by the owner. The survey was done in Vietnamese. The respondent only sees the link(s) to the questionnaire(s) that he/she needs to answer.

The owner reviewed and approved the questionnaires before it is placed on Formstack platform. Though the questions were mainly developed by the author of this thesis, the owner also assisted and suggested the questions that she is interested in getting answers for. A cover letter is also included in the email, states the purpose of the survey and the usage of information in the future. The author also emphasizes the importance of having the answer from respondents, as well as the responses will remain confidential, even to the owner, and the questions are neutral, which causes no harm to the current position of the respondents.

The questionnaires were available for two-week period. A reminder was sent after one week, to maximize the number of respondents. The survey population is rather small, therefore, it is important to get as many responses as possible. The expected response rate is 77%. In the end, 9 out of 9 members in management team responded to the survey, which means the response rate is 100%.

4.3 The inventory

The information about inventory is gathered through the first questionnaire and a part of second questionnaire. The inventory manager is the only respondent of the first three questions in the first questionnaire, while the number of respondents in the latter 5 questions is 5, including inventory manager and four chefs.

Market price research

The market price research is one of monthly task of the inventory manager. The purpose of the research is to ensure the price offered by the supplier is reasonable compared to that in the market. Though the chefs are partly responsible for inventory, doing market price research is not included in their works.

The first question asked the inventory manager how often he did market price research. The manager answered this question with the choice of “once per month”, which is relevant with the minimum rate stated in the job description. However, he asked the same question in one interview, the owner stated that she expects the manager to do “at least one market price research per month”, however, the more frequently the better, because the food prices in Vietnam fluctuate unexpectedly only after a few days. Nevertheless, she admitted that this expectation is not documented in the job description, though it was reminded sometimes during meetings.

The second question asked the manager how often he filed a report of market price research. He answered with “Only when the market prices are lower than that of the suppliers”. The owner, being asked the same question, also answered that she required the manager to report immediately if the market price is lower than offered price from suppliers.

Material quality control

The third and fourth questions are about the material quality control. All the managers in charge of inventory answered these questions.

The third question asked the respondents to mark any practices included in the process to control material expiry dates. 100 per cent respondents said that they check expiry date at delivery, do periodic investigation to dispose expired materials and maintain inventory rotations between the warehouse/storerooms. Three out of five respondents applies “first in, first out” rule as a method to reduce wasted material. However, none of respondents

input expiry date of material lot to data sheets for later control, or order in well-calculated quantity based on costs and usage rate.

The fourth question asked about the frequency of storage condition checking to ensure the quality of preservation. The inventory manager said that he checked the condition of storage once a month, while all four chefs only check if there are suspect problems such as unexpectedly thawed materials or early-spoiled dried ingredients. The owner also said that currently there is no strict regulation regarding storage condition, which leave spaces for the managers' own decision.

Shrinkage control

Inventory shrinkage has always been the mostly concerned issue in Aiya. The fifth and seventh questions is concentrate on this issue.

The fifth question asked the respondents how often they inspected shrinkage. The inventory manager and one chef answered with "once per month". Three other chefs said that they only inspected shrinkage when received notice or question from the restaurant managers.

The sixth question asked how often the material delivery and receipt notes were used to trace inventory shrinkage. 3 out of 5 respondents said that "sometimes" they use these notes, only 1 respondent answered with "often" and the other with "always". Using delivery and receipt notes are considered as basic tools to inspect shrinkage. Luckily, all the managers claimed that they use the note, though only on medium regular basis.

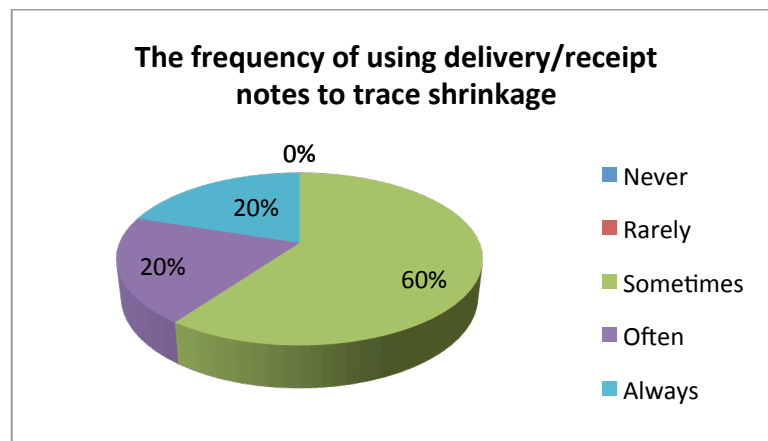


Figure 10 The frequency of using delivery/receipt notes to trace shrinkage

The seventh question asked the managers to rank the reasons of inventory shrinkage in their order of importance. The reasons are developed base on theory framework and current system of quality management in Aiya. Here are five reasons listed in the answer:

- (A) - Vendor fraud
- (B) - Perishable ingredients expired before being used

- (C) - Internal/ employee theft
- (D) - External theft
- (E) - Paperwork errors, for example, inter-warehouse transfers are not recorded

The result is demonstrated in the following table:

	I	II	III	IV	V
A	1	1	2	1	0
B	1	3	1	0	0
C	1	0	1	3	0
D	0	0	0	0	5
E	2	1	1	1	0

Table 6 The reason of inventory shrinkage

40% respondents believed paperwork errors are the most important reasons that lead to shrinkage. 60% ranked perishable ingredients expired and wasted are the second important reason. Internal theft and vendor fraud are only ranked at third and fourth position. Noticeably, 100% of respondent rank “external theft” as the most unimportant reason. This means that the shrinkage is mostly resulted from the internal process of quality management.

The eighth question was an open-ended question, asked the respondents for their suggestion to reduce the inventory shrinkage in Aiya. 3 out of 5 respondents answered this question. The answers is as follows:

- To improve paperwork procedure, carefully note down all transfers and disposal
- To carefully check the quantity of delivered materials every time
- Try to increase sales to use up perishable ingredients

The answers provide partly the solution for three out of four shrinkage reasons listed in seventh question. There is no suggestion regarding the solution for “internal theft” reason, though “this is indeed the most troubled reason up until now”, according to the owner.

4.4 Food production

This part of the second questionnaire was answered by the four chefs of four Aiya restaurants in the chain. The questionnaire covers all issues related to food quality that are chefs’ responsibility.

Material purchase and delivery

The first question asked the chefs how often they had to make urgent order for dry and frozen ingredients. The scale was from 1 to 5, with 1 stands for “never” and 5 means “always”. 3 out of 4 chef answered with 2 and 1 chef answered with 1, which mean the urgent order are very rarely need to be

made in Aiya chain, a good sign that the stock is maintaining sufficiently enough for food production.

The second question asked the chefs how often late delivery happened, with the scale from 1 to 5 – “never” to “always”. Two chefs answered with 2 and two chefs answered with 3. The late delivery, therefore, is not a serious issue because it does not happen frequently; though it would be much better to minimize the frequency to “never”

The third question asked the respondents to choose all possible factors they depend on to determine the quality of delivered fresh materials. All four chefs depend on expiry date and their own observation experience to decide. Only one chef takes the reliability of suppliers into account, while no one use documented standards as a reference. Regarding these standards, the owner said that up to now, there was no document issued to instructs this quality determining process.

Human resource issues

The human issue is also very important in quality management, especially the employees working in the kitchen, who directly handle and produce the foods. The fourth questions concentrate on this single issue.

The fourth question listed four common issues, and asked the respondents to choose any issues that he/she thinks that need improvement in their kitchens. 3 out of 4 chefs thought that the training program for cook as well as the morals and working attitude needed to be improved. Two chefs suggested improvement in the connection and interaction between cooks, while only one chef though that the working atmosphere needed improvement.

Quality of served dishes

The fifth question asked the respondents to rank the reasons of poor-quality finished dishes listed in the answers, depending on the order of importance in their opinions. The answers is as follows:

- (A) - The cook is new and/or has not been trained enough
- (B) - Poor-quality ingredients
- (C) - Uncommon cases that never come up before (e.g.: larger portion, special order)
- (D) - The standardized recipe and instruction are unclear

The result is demonstrated in the following table:

	I	II	III	IV
A	0	1	1	2
B	1	0	2	1
C	1	2	0	1
D	2	1	1	0

Table 7 The reasons of poor quality finished dishes

The result shows that the most important reason affecting the finished dish quality is lack of standardized recipe and the second important reason is uncommon orders that create difficulty for production. Poor quality ingredients are ranked third, and the experience or skills of the cooks are said to be not major cause to the poor quality.

Information exchange

The information exchange between inventory and production department is critical issue in big companies. Though Aiya is not a big-scale company and the production managers are partly responsible for inventory themselves, the communication with inventory department is still needed, because most of major decisions regarding inventory and purchasing are made by the owner and inventory manager. The sixth and seventh questions are set to cover this issue.

The sixth question asked the chefs how often they exchanged material related information with the inventory section. The scale is from 1 – “never” to 5 – “always”. Three chefs answers with 2 – “rarely”, and only one chef answered 3, which means “sometimes” the information exchange happened.

The seventh question is regarding the issues that were discussed during information exchange. There were three issues raised in the answer, and the “other” option for the chef to freely fill in different issues. The mostly discussed issue is the quality of materials taken from the warehouse; this answer was chosen by 3 out of 4 chef. Only one chef discussed the availability of materials in upcoming time; and none discussed about the possibility of new dishes. Besides, there is also no other issue mentioned.

The results of sixth and seventh questions indicate that the chefs are currently quite passive in communicating with inventory section. Though the passiveness will not be harmful in short-term period, it definitely restrains the development of the restaurant chain in the future. Nurturing an effective communication web within the organization is significant to keep the information flow healthy, through which maximize the quality of products.

Hygienic issues

The eighth question is about the hygiene in the kitchen. The chef is asked to mark all the hygiene issues that need improvement in their opinions. All possible options should be marked. The following table displays the issues raised in the answers and corresponding number of respondent choices

Issue	Number of respondent choices
The cleanliness of air and water supply	0
The cleanliness of kitchen area and equipment	2
The treatment of waste and disposal	2
Employee health	0
Employee habits and behaviors	4
Food handling code	1

Table 8 The hygienic issues that need improvement

All the respondents chose “employee habits and behaviors” as an issue to be improve, make this the most important issue to concentrate in hygiene improvement. The cleanliness of kitchen area and equipment, as well as the treatment of waste and disposal should also be checked to make sure these factors do not affect the food quality. On the other hand, employee health and the cleanliness of air and water supply are not concerned problem. Food handling code was mentioned by one chef, hence, should also be revised though this is not considered urgent issues.

The last question set in food production part is an open-ended question asking for the chefs’ suggestions to improve finished food quality and consistency in Aiya. Three chefs gave answers for this question. The suggestions are as follows:

- To develop clear and understandable recipe for each dish
- To build a better training program for new cooks

The development of clear recipe for each dish can be considered urgent, as 2 out of 4 chefs suggest this.

4.5 Customer interaction

Because the service quality is not covered in the scope of this thesis, the questionnaire made for restaurant management only focus on the tasks of monitoring quality of food served, and taking customer feedback as a material for food quality control and improvement. The respondents of this questionnaire are four restaurant managers.

Monitoring quality of food served

The first question asked the restaurant managers how often they observe the foods before they are brought to the customers. Two managers said that the frequency of observation depends on the busyness of the restaurant. There is one manager answered with “every time”, and another observed only when the waiter/waitress reported suspect problems.

Taking customer feedbacks

The second question asked the managers’ opinion about the importance of recording customer feedback for future improvement of food quality in Aiya. The scale is set from 1 – “extremely unimportant” to 5 – “extremely important”. 3 out of four managers answered with 3, and one answered with 4. The result indicates that the awareness about the importance of customer feedback in food quality among managers in Aiya is moderate. In fact, taking customer feedback is one of the most important tasks that need to be incorporated in quality management system, according total management philosophy. There awareness among managers needs to be increase as a basis to build sufficient customer feedback system in Aiya.

The third question asked the respondents to evaluate the frequency of several customer-feedback related issues. The scale is from 1 – “never” to 5 – “always”. The following table displays the issue and the result, as well as the average frequency calculated.

Issue	1	2	3	4	5	Average
You directly ask customers for feedbacks	0	3	1	0	0	2.25
You instruct the waiters/waitresses to collect customer feedbacks	0	2	2	0	0	2.5
The waiters/waitresses actively ask customers for feedbacks	0	4	0	0	0	2
Customers actively give feedbacks	0	2	2	0	0	2.5
Customers give positive feedback about food quality	0	3	1	0	0	2.25
Customers give negative feedback about food quality	0	1	3	0	0	2.75
You record customer feedbacks	0	2	2	0	0	2.5

Table 9 The frequency of customer-feedback-related issues

All issues listed are related to customer feedback. The average gives an overall view about how frequent these issues happen in all the restaurants in the chain. All issues happen in the regular basis between “rarely” and “sometimes”. The customers are not usually actively give feedback, and they tend to give more negative than positive ones. In the other word, the customers tend to speak only when they are not happy; and passively waiting for customer feed back is not a good option to collect data.

According to the table, all actions related to customer feedback gathering is not highlighted in Aiya. Especially, the waiters/waitresses are not active in asking for customer feedback, though this was included in the training session. The managers also rarely directly ask the customers, and do not record the feedbacks often enough.

Information flow

The fourth question is in order to find the frequency of communication between restaurant managers and the chefs/cooks, regarding customer feedback about food quality, using the same scale if third question. The issues and results, as well as the average frequency are displayed in the following table.

Issue	1	2	3	4	5	Average
Customer complaints are immediately communicated to the kitchen	0	0	3	1	0	3.25
Customers' positive feedbacks are immediately communicated to the kitchen	0	3	1	0	0	2.25
You discuss with the chef about the reasons of customer complains	0	1	3	0	0	2.75
The chef actively asks about customer feedbacks	1	3	0	0	0	1.75
Customer feedbacks lead to changes in food production	0	3	1	0	0	2.25

Table 10 The frequency of communication between the two departments

The table shows that the chefs are very rarely actively ask for customer feedback. Fortunately, the customer complaints are communicated immediately to the kitchen with moderate frequency, which are not optimal but somehow acceptable. However, customers' positive feedbacks are less communicated to the kitchen compare to negative feedback, which might be partly because the negative feedbacks are more urgent in terms of making amendment. The restaurant managers only discuss the reasons for complaints on moderately regular basis. Together with the insufficiency of feedback database, it is expected that customer feedbacks is not strong enough to lead to changes in food production.

The last question regarding this matter is to observe the weaknesses of current food quality control process in Aiya under customers' point of view. The managers are asked to trace the last ten complaints, and classify the reasons according to different group. The results and corresponding percentage of each reason are showed in the table below.

Issue	R1	R2	R3	R4	Total	Percentage
The food is not hygienic (strange materials, hair in food...)	1	0	0	0	1	2.5%
The food is not delicious	4	5	5	6	20	50%
The food flavor is different from the last time they visit	4	3	4	4	15	37.5%
The portion is too little compare to the last time they visit	1	2	1	0	4	10%
Some ingredient is spoiled and the food is not edible	0	0	0	0	0	0%
Total	10	10	10	10	40	100%

Table 11 The reasons of customer complaints

As showed in the table, the most common reason for customer complaints are “the food is not delicious”, which account for 50% of the 40 recent complaints. While many other causes apart from ineffective food quality control process may lead to this complaint, the following two reasons is strongly relevant to the quality control issues. 37.5% the complaints accused that the food flavor was different from that in the last time of visit, which means the problem of food quality inconsistency in Aiya need immediate improvement. The following common reason, which account for 10% of the complaints, was about the quantity of food in one portion. This can be the result of intended or unintended change in portion size. In case the change was unintended, the production process needs to be revised, because in maintaining quantity consistency is also considered as a part of food quality control. The hygienic reasons only composed 2.5% of negative feedback. Though this number is not extreme yet, it is an indication that improvement is still needed in hygienic aspect to reach the no-defect point.

5 SUGGESTIONS

The following chapter will offer suggestions to improve the food quality control process in Aiya. These suggestions are based on the theory framework as well as the survey analysis presented in the previous chapter.

5.1 Update rules and regulations

Rules and regulations are the basic tools for the management to control the performance quality of subordinates, which related directly to the quality of products. Though overdose of rules and regulations result in a heavy and inflexible structure, an incomplete set of regulations also drives the

organization into trouble. Currently, Aiya regulations and rules do not reflect exactly the expectation of the owner in some aspects. For instance, the owner expects the inventory manager to do market price research for at least every two weeks; while according to the documented rule, the minimum frequency of this practice is once a month. The result of the survey showed that the manager only do the research on monthly basis, despite the fact the owner reminded him a couple of time to do it more frequently.

Every time a new issue comes up in any restaurant in the chain that requires for a new rule, the owner should document the rule as official, and consider applying it throughout the chain if necessary. This practice belongs to feedback control phase (p. 11), considered as an act to correct the problem and prevent it from reoccurring in the future.

The new rules and regulations regarding food quality have to be approachable for all employees, include the managers, in the restaurants. At the moment, the regulations are only attached in the introduction file sending to the employees when they begin their work. During working, these rules are only reminded if there is some mistake takes place. In fact, the management can prevent the mistake from taking place by ensuring the rules are well understood and remembered by employees, so as the works are done accordingly to minimize the defect. For example, the hygiene regulations should be emphasized in the training program, while printed version is also presented on the wall in the kitchen.

5.2 Standardization

Besides regulations, standardization is effective tool in controlling the food quality. In order to assure the quality of finished dishes, the quality of each ingredient, as well as handling and preserving methods cannot be neglected.

Firstly, the quality of delivered materials should be standardized and documented. The survey outcome shows that most of the chefs determine this quality based on the expiry date and their own experience. However, the expiry date on the package alone only means that the product can be used for a certain time, and do not mean it is at good quality. Apart from negotiating with the supplier to always get the best grade of materials available for a certain price, checking the quality at delivery is important. The experience of chefs is valuable, nevertheless, will not be useful if another cook has to check the goods because the chef is absent. These cases do not happen frequently, however, they do happen and usually leave unnecessary mess. To avoid the uncertainty, the best method is creating a set of standards to determine the quality of delivered material. The standardization should cover all categories of supplies, and be presented to all employees possibly related to the tasks. The standardization of ingredient quality not only helps to reduce uncertainty, it also increases the consistency of food quality throughout the chain.

The most important process that needs to be standardized is food production. The current version of recipes is only useful in terms of cost and price calculation. It is not specific, informative and clear enough as an instruction for the cooks. Different cooks have different knowledge background and habits; unclear instruction will lead to difficulty for them to produce foods with desired quality. The chef cannot monitor every single cooking step of all cooks, especially in peak time, which certainly leads to poor-quality dishes. A detail and clear recipe should be documented and included in the training session, in order for all the cooks to get basic knowledge about cooking methods in Aiya. A clearly defined recipe also leaves less space for error, as well as locks the quality of finished product to the standards. (Sethi 2004, 196.)

Additionally, the training program for new cooks is significant, as it directly affects the quality of food production. A document regarding the content of an efficient training program should be established and presented to all chefs, as a guideline to follow during training session. This reduces the risks of neglected training in certain tasks, and assists the new cooks in understanding about food quality requirement in Aiya.

5.3 ABC analysis implementation

The ABC analysis is proven to be effective, simple and easy to apply (Sethi 2004, 340). The author suggests Aiya to apply this tool to divide materials into different group for inventory management, instead of arranging based on suppliers and alphabet order. As explained in the theory part, using ABC analysis supports the management on defining the important category product to focus on. Currently, in Aiya, the ingredients that are most frequently checked for shrinkage are the most expensive one, according to the price per kilo. However, the ABC principles state that this practice is not helpful. The most important ingredients are not the most expensive ones, but the ones generate highest annual value. The inventory management should calculate this value of each ingredient to define the critical material groups.

5.4 Basic quality management tool implementation

Within the seven basic tools introduces in the theory chapter, the authors suggest Aiya to use at least three following tools to improve food quality control process.

Process flowchart:

The process flowchart is very simple, yet effective way to demonstrate the process of doing some tasks. The process flowchart should be included in the training program for cooks and waiters/waitresses, to help them understand more thoroughly how the process happens and their roles in it. The

chart is proven to be most supportive if the employees participate in defining and drawing the process.

Hereunder is an example of process flowchart, for the process of bringing finished dishes from the kitchen to the customers.

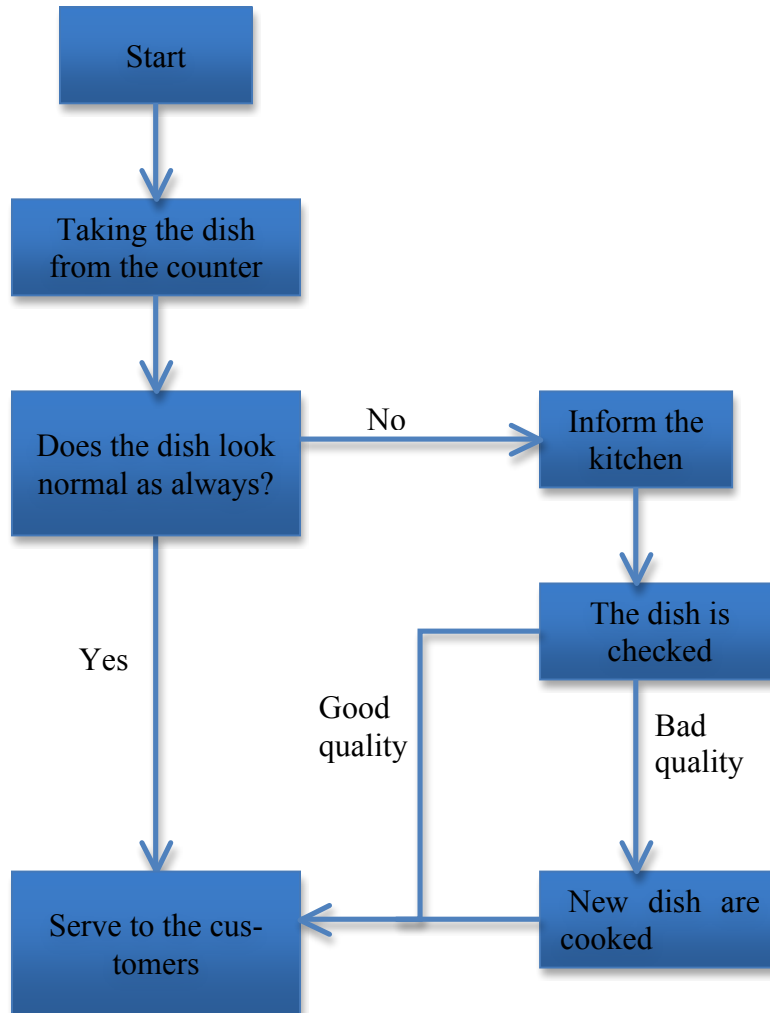


Figure 11 The process of bringing finished dishes from the kitchen to the customers

Check sheets

Check sheet is a simple method to keep track of the defects happening during food production such as equipment failure or unexpectedly disruption of some ingredient. This tool is effective to record data into neat groups for later use. There are many valuable data sources that have been wasted due to the absence of databases for recording information. The author recommends the owner to use check sheets to collect information about the issues listed below:

- Defects in food production
- Violated hygienic issues
- Reasons to return delivered material
- Reasons of customer complain

- Reasons of inventory shrinkage

Based on the check sheets, the owner can observe the pattern and frequency of the factors and use this info to determine the focus and priority of the improvement.

Fishbone Diagram

This diagram should be used in management meetings as a tool to discover the root causes of problem. The diagram is very flexible, and the management team can approach the defect in different angles to ensure the investigation is thorough. The example of low-quality finished food problem is given below.

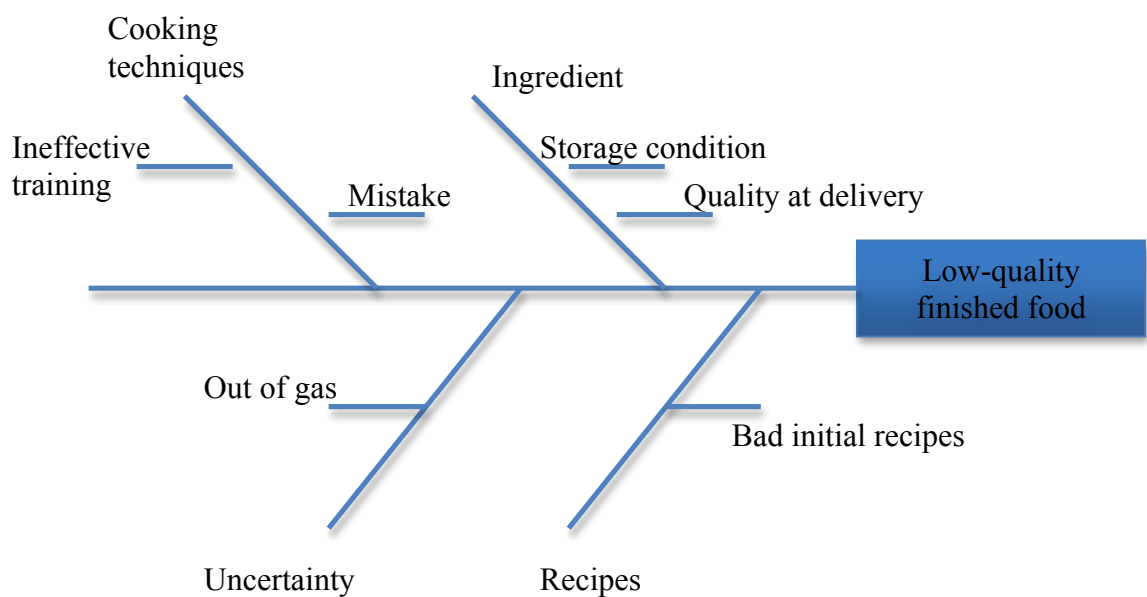


Figure 12 Reasons for the problem of low-quality finished food

5.5 Tactics to reduce shrinkage and employee theft

Paperwork procedure takes a critical role in inventory management. Currently, the delivery and receipt notes, as well as disposal form are used in Aiya, as a way to keep track of the material flow in and out of the restaurants. However, the method of using these papers is not effective enough to facilitate shrinkage prevention and inspection. It is visible in the survey outcome that the inventory manager does not always use delivery and receipt notes to trace shrinkage. Scarborough (2012, 502) emphasizes that the first move in inspecting shrinkage should be looking back to the papers. The shrinkage is commonly a result of neglected paperwork. Therefore, to ensure the accurateness of inventory documents is the basic practice.

The material should also be re-measure at the delivery, to avoid vendor frauds. Besides, the rotation of materials between warehouses needs to be recorded every time being made. The disposal form of materials should also be filled out in short order. The practice of accumulating disposal cases, filling out and signing the forms every week is not helpful in terms of waste control, because the manager can hardly remember exactly whether the disposal was made or not.

Though the managers did not chose employee theft as a serious reason that leads to shrinkage, the owner emphasized that this is the problem that worried her the most. Indeed, employee theft is the trouble that businesses have to cope with at some stage of development (Scarborough 2012, 638). Though there is hardly a way to totally eliminate employee theft, some simple practices can be implemented to help to reduce its likelihood.

The theft likely happens if the employee has exclusive power over some certain issues. The owner had the experience with this, in the case of firing the previous inventory manager for manipulating the price. The manager, at that time, had total power over the price negotiation with the suppliers, because he is one of the most trusted employees in the company. The owner considered him as a partner, rather than a normal employee. This attitude is common in small organization, however, is proven to likely result in security breaches (Scarborough 2012, 635). In the case of Aiya, the owner should carry out the price negotiation herself at least every two month, to detect any suspect behavior of the suppliers. The price negotiation needs to be transparent to other departments, such as accounting and food production. Transparency can restrain the desire to steal and increases the probability of early-discovered theft.

In order to prevent internal theft in Aiya, the inventory department may need support from human resource department. The owner stated that when unserious cases employee theft discovered, sometimes they are looked through, because the managers afraid that the employees may quit jobs because of pressure. This unintentionally nurtures the negative thought among employees that unless the theft is serious, their jobs are secured. In order to reduce shrinkage, every discovered steal has to be punished. This practice also contributes in creating the honest environment in the restaurants. Nevertheless, the human resource department plays a big role in the process, by ensuring the sources of substitutes in needed case.

Lastly, designing a stricter process is only a short-term solution. The improvement of morale and working attitude among employees is necessary for long-term benefit. An environment of honesty starting from the management will encourage the employee to hold the same positive attitude.

5.6 Feedback database as source for future development

Customer feedbacks are critical reference source for food quality development in every restaurant. The Six Sigma emphasizes that customer's need is the first priority in quality management. Hence, the restaurants

should consider collecting the feedbacks and using them to continuously improve the quality of food as obligated works.

There are different methods to collect the feedbacks. The restaurant website and social media accounts are effective channel to interact with the customers and listen to their expectation. Beside, a feedback forms can be designed and placed on each table with pens, so the customers can fill out after having meal and drop to customer feedback box before they leave.

The collected data should also be analyzed, arranged into groups and input into the database for future use. As suggested before (p.), the check sheet is an effective tool that is easy and cost-effective to implement. This work needs to be done on regular basis, to ensure that the database is always updated.

5.7 Information flow between departments involved in the process

No matter how much information gathered, it will not be useful unless being communicated to the right departments. Food quality control is a process requiring the participation of all departments throughout the company; therefore, the connection and communication are crucial. In Aiya, there are two connections that need to be set first; between inventory and food production, and food production with customer service section.

The materials relate directly to the quality of food served. Furthermore, the cost of ingredients account for roughly 60 percent of total cost. This means that the change in quality or price of ingredient can lead to great change in the quality and price of served dishes. The regular communication between the inventory and food production departments joins the knowledge of these two, to produce optimal combination of what, when and how much to order to maximize the quality and minimize the costs.

The information flow between food production and customer service should be highlighted as well. As stated in the survey result, all the negative feedback when to the kitchen, while positive feedback are considered not important to be delivered instantly. Actually, not only the complaints, but also the compliments from customers should be reported to the cooking team. In this way, the cooks will know which to amend and improve, and which to maintain. In addition, the compliments are good sources of encouragement; and encouraged employees always perform better. Besides, negative feedbacks from customers should be reported in constructive way, rather than assigning guilt to the cooks.

5.8 The people factor

Though some of the suggestions are regarding the process solely, other suggestions in this thesis require more than making change in procedure. In the long term, Aiya's management team has to be more proactive with

strong awareness about the importance of food quality, in order to enhance the efficiency of the quality control process. The awareness throughout the organization can be improved through organizing effective training program, building quality-focused culture, and constructing a clear and supportive quality management process. However, changing morale and work attitude is a great topic that is not covered in the scope of this thesis; for that reason, this study provides no specific suggestion regarding this.

6 CONCLUSION

This study was commissioned by Aiya restaurant chain, a newly opened restaurant in Vietnam providing customer with hygienic street-side foods. The core idea and mission statement of Aiya restaurants was described in introduction chapter, to give readers a better picture about the importance of food quality in this chain of restaurants. Up until now, the food quality control process in Aiya is incomplete and allows space for many defects. The purpose of this study is to offer a set of tactics to improve the current food quality control process in Aiya. The suggestions are expected to be easy to implement, as well as cost-efficient, yet effective enough to improve the current situation.

The theory background of this thesis consists two parts. The first part contains general theories related to quality and quality management. In this part, the concept of quality in the present time and different levels of quality are introduced, to provide basic knowledge about the topic. The quality management theory used in this study is mostly process-oriented, as the research question is focus on the process improvement. The philosophy of Total quality management and Six Sigma principles are included, which emphasizes the significant role of customers in quality management. The basic seven tools of quality management and the method to implement these tools effectively into the process are studied, because these tools are simple, yet very efficient with proper implementation.

Restaurant is a special industry, because food is different from every other product because it is easy to perishable and requires different handling techniques. The quality assessment of food, conducted by the customers, hence is also very subjective and difficult to predict. The author spares the latter part of theory to provide in-depth information about quality management process in food and beverage industry. The two parts of theories was used in harmony to develop the suggestion.

The current situation of food quality control in Aiya was studied in two chapters. An overall picture about quality control process was formulated through several interviews with the owner, because the process has not yet been documented. There are many defects occurred in all steps involved, such as shrinkage, food inconsistency and price manipulation. The owner is eager to provide information and discuss about the problems.

Empirical study takes an important part in completing the analysis of current process. The survey was conducted among management team, with

three questionnaires developed in total to gather data in three main areas: inventory, food production and customer service. The survey was expected to show the effectiveness of current process, as well as level of the congruence between quality regulations and the real works.

The result analysis presented that all the managers were performing according to the regulations. However, the practices were mostly done on minimum frequency. The shrinkage was the most highlighted issue in inventory; however, shrinkage inspection and prevention in the restaurants and warehouses were not carried frequently. While the owner underlined employee theft as the most important reason, the managers believed that paperwork errors and wasted perishable ingredients are the most likely reasons that lead to shrinkage. The survey result also indicated unclear recipe and instruction as the issue that need improvement the most in food production. The chefs also suggested training program to improve the cooks' working attitude and behaviours to be included in the list for development.

The questionnaire designed for restaurant managers was solely regarding food quality problem. The purpose of this questionnaire was to determine the level of interaction with customers, to record feedbacks as a material for food quality control and improvement. The result showed low level of interaction in all restaurants, which partly due to lack of database and regulations. Besides, the feedbacks were not communicated effectively to the kitchen on regular basis. The last question in the questionnaire is the only question in the survey reflects customer opinion about food quality issue in Aiya, yet provided useful information about the weaknesses of current food quality control process. 37.5% of recent customer complaints are because of quality inconsistency, which also the issue the owner was concerned in the beginning.

Based on the theory background and the empirical study, the author offers a set of tactics to improve current food quality control process in Aiya. The recommendation includes implementation of different tools to support the quality management, as well as suggested changes in different steps along the process. All of the suggestions are not costly in terms of money; however, some suggestions require high awareness from the management and employees, which can only be achieved in the long term of development.

Quality has always been a crucial issue to all businesses; especially those operate in restaurant industry. This thesis and its contents are expected to create simple yet positive changes in food quality management in Aiya restaurants. This is considered as the first move towards the goal of continuous improvement in food quality control in Aiya, to fulfill the mission statement of this restaurant chain.

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COVER LETTER

Dear respondents!

I am last- year student in Hamk University of Applied Sciences and I'm doing my final thesis concerning how to improve food quality control process in Aiya restaurants.

Would you please spend a few minutes of your time filling out the following survey by clicking to the link below? The link will be available for 10 days so please answer by the 15th of April 2012. This survey is designed exclusively for the management team. Your responses are very importance as they form an important practical framework used for exploring and improving the process

Please click to this link to reach the questionnaire:
<http://www.formstack.com/forms/?11473451-shDchLbGTr>

All the answers will be analyzed and used only for this study. Besides, the questions are neutral and harmless. The only purpose of this survey is to gather in-depth information about the current process. There will be no judgements afterwards. Therefore, please keep your answers truthful.

Thank you for your participation.

Best regards!

Tram Anh Nguyen



QUESTIONNAIRE

Questionnaire 1: Inventory

1. How often do you do market price research?
 - Once per week
 - Once per month
 - Every 6 months
 - Other: _____

2. How often do you file a report of market price research?
 - Always
 - Sometimes
 - Only when the market prices are lower than that of the suppliers
 - Never

3. Please mark any practices included in the process to control material expiry dates.
 - Order in well-calculated quantity based on costs and usage rate
 - Check expiry date at delivery
 - Input expiry date of every lot to data sheets for later control
 - Do periodic investigation to dispose expired materials
 - Apply first in, first out rule
 - Maintain inventory rotation within the chain of warehouses

4. How often do you check the storage conditions, such as temperature and humidity for different ingredient categories?
 - Once a week
 - Once a month
 - Every 6 months
 - Other: _____

5. How often do you inspect inventory shrinkage?
 - Once a week
 - Once a month
 - Every 6 months
 - Other: _____

6. Please pick a number from the scale to show how often you use material delivery and receipt notes to trace inventory shrinkage. (1 = never; 5 = always)



- 1 2 3 4 5

7. Please rank the reasons of inventory shrinkage listed below in their order of importance. Jot the number 1 next to the one that is most important, number 2 by your second choice, and so forth.

- ___ Vendor fraud
- ___ Perishable ingredients expired before being used
- ___ Internal/ employee theft
- ___ External theft
- ___ Paperwork errors, for example, inter-warehouse transfers are not recorded

8. Your suggestion to reduce inventory shrinkage in Aiya

Questionnaire 2: Inventory & Food Production

1. Please mark any practices included in the process to control material expiry dates.

- Order in well-calculated quantity based on costs and usage rate
- Check expiry date at delivery
- Input expiry date of every lot to data sheets for later control
- Do periodic investigation to dispose expired materials
- Apply first in, first out rule
- Maintain inventory rotation within the chain of warehouses

2. How often do you check the storage conditions, such as temperature and humidity for different ingredient categories?

- Once a week
- Once a month
- Every 6 months
- Other: _____

3. How often do you inspect inventory shrinkage?

- Once a week
- Once a month
- Every 6 months
- Other: _____



4. Please pick a number from the scale to show how often you use material delivery and receipt notes to trace inventory shrinkage. (1 = never; 5 = always)

1 2 3 4 5

5. Please rank the reasons of inventory shrinkage listed below in their order of importance. Jot the number 1 next to the one that is most important, number 2 by your second choice, and so forth.

___ Vendor fraud

___ Perishable ingredients expired before being used

___ Internal/ employee theft

___ External theft

___ Paperwork errors, for example, inter-warehouse transfers are not recorded

6. Your suggestion to reduce inventory shrinkage in Aiya

Food production

1. How often do you need to make urgent orders for dry or frozen ingredients? (1 = never; 5 = always)

1 2 3 4 5

2. How often late delivery happens? (1 = never; 5 = always)

1 2 3 4 5

3. Please mark any factors you depend on to determine the quality of delivered fresh materials.

Documented standards

The reliability of supplier

Expiry date

Observation based on experiences

4. Please mark any human resource issues that need improvement?

The training program for cooks

The connection and interaction between cooks

The morals and working attitude of cooks

The working atmosphere



5. Please rank the reasons of poor-quality finished dish listed below in their order of importance. Jot the number 1 next to the one that is most important, number 2 by your second choice, and so forth.

___ The cook is new and/or has not been trained enough

___ Poor-quality ingredients

___ Uncommon cases that never come up before (e.g.: larger portion, special order)

___ The standardized recipe and instruction are unclear

6. Apart from placing order, how often do you exchange material related information with the inventory section? (1= never; 5 = always)

1 2 3 4 5

7. Please mark any issues that are included in information exchange with inventory section.

- Quality of materials taken from the warehouse
 The availability of materials in upcoming time
 Possibility of new dishes

8. Please check any hygienic issues listed below that needs improvement.

- The cleanliness of air and water supply
 The cleanliness of kitchen area and equipment
 The treatment of waste and disposal
 Employee health
 Employee habits and behaviors
 Food handling code


9. Your suggestion to improve finished food quality and consistency in Aiya
-
-

Questionnaire 3: Customer Interaction

1. Please pick a number from the scale to show the importance of recording customer feedback for future improvement in food quality (1= extremely unimportant; 5 = extremely important)

1 2 3 4 5

2. How often do you observe the foods before they are served to the customers?

- Every time
 Depends on the busyness of the restaurant
 Only when the waiter/waitress reports suspect problems
- 

Other ____

3. Please pick a number from the scale to show how often the things listed below happen, and jot on the left of the item (1 = never; 5 = always)

- You directly ask customers for feedbacks
- You instruct the waiters/waitresses to collect customer feedbacks
- The waiters/waitresses actively ask customers for feedbacks
- Customers actively give feedbacks
- Customers give positive feedback about food quality
- Customers give negative feedback about food quality
- You record customer feedbacks

4. Please pick a number from the scale to show how often the things listed below happen, and jot on the left of the item (1= never; 5 = always)

- Customer complaints are immediately communicated to the kitchen
- Customers' positive feedbacks are immediately communicated to the kitchen
- You discuss with the chef about the reasons of customer complains
- The chef actively asks about customer feedbacks
- Customer feed backs lead to changes in food production

5. Of the last 10 times that you receive customer complaints, how many times are the complaints because of each reason below?

(Please be sure to make the total equal 10)

- The food is not hygienic (strange materials, hair in food...)
- The food is not delicious
- The food flavor is different from the last time they visit
- The portion is too little compare to the last time they visit
- Some ingredient is spoiled and the food is not edible
- Other _____

