Application of the Kaizen philosophy – a road to a learner business

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Abstract
The focus of the article is analysis of the Kaizen method and its application in various companies. The main philosophy of the Kaizen method is that each employee contributes to continuous incremental improvement of company’s processes. It is a wholesome philosophy of management, which includes the entire company and places individuals in the middle of the action. The Kaizen method is not limited to production entities, but it needs to be focused on the company’s vision. The method is an appropriate and a well used tool for identifying and analyzing problems related to productivity with management without a system, with low work productivity, with work safety, and others. The Kaizen method is a Japanese philosophy that focuses on continuous incremental improvement of all aspects of one’s life. Kaizen is not a widely used method for improving quality in businesses. It can be applied in all branches of production since managers are not the only ones striving to improve production processes, production, and to improve the work place, but mainly employees are. It focuses not only on improving quality, but also on improving everything that can be improved within a company, because even a slight improvement affects the quality of production or services. However, it is not a method, but a process oriented way of thinking, which provides a basis for behaviors in one’s daily life.

Key Words: company, innovation, Kaizen, quality management, system, TQM

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1. Introduction
Organizations and particularly production companies consider quality management to be a necessary part of company management. Quality management influences all processes in a company and an organization. The opening of the economy and markets in the 1990s brought to Slovakia foreign investment and allowed national producers to place their products on foreign markets. Foreign partners who were used to well established standards started to require of their Slovak partners that they adhere to the same standards of quality. Later on such systems were implemented in Slovak companies and organizations. Throughout the last years of the 20th century, the current practices in Slovakia have proven the necessity to implement quality systems into companies’ activities and to do this from the companies’ initiatives.

Influenced by foreign partners, Slovak companies implemented quality systems and adhered to the rules that stemmed from them. Quality management spread even more after Slovakia’s entry into the European Union and then after the entry into the monetary union. By implementing quality systems, companies and organizations gained competitive advantage. As more companies implemented quality systems, we also saw establishment of companies providing quality audits. The Slovak Technical Norm – STN has a designation STN EN ISO. As quality is established in companies and organizations, we can see that within the scope of quality, it leads to competition. In 2000 the state decided to support implementation of quality management and established an annual competition, the National Prize for Quality. The competition has been taking place annually for the past 16 years. The competition aids in
developing a business environment in Slovakia. It promotes continuous improvement of quality in all activities, better results than competition, and maximum success in the marketplace. The Slovak Organization for Quality was established in 1993 as a professional association for quality. According to information about quality and acquired experiences, many companies were not satisfied with the established quality systems. As a result a shift to a higher level of quality management, to Total Quality Management (TQM), was recorded (5).

1.1 Modern Quality Management Systems – The Kaizen Strategy

Managers make daily permanent decisions, while managing companies and organizations, which are based on important analysis of situations and with the goal to improve quality. Therefore, methods and tools for correct analysis of situations and involvement in processes and quality management are part of daily practice (2). Due to globalization of economy, managements of companies and organizations look for savings, to lower expenses, to be flexible, and to achieve a more competitive position. Companies more often confront their competition. Successful companies act as role models for others. It is common practice that companies compare themselves to industry leaders with the largest growth, profit, and brand. This way and by utilizing various resources they aim to achieve better results as well as to overtake their competitors. Globalization is today the only specific characteristic of business. For companies to survive the market situation, high volume of good competition, increase in prices and other aspects, they are forced to implement in their practices modern management quality systems.

Leader in achieving high productivity and quality are Japanese industrial companies. These currently specialize in flexible manufacturing technologies. Even European companies slowly implement systems of Japanese manufacturing companies. Slovak companies are no different. One of progressive Japanese quality management systems in companies is the Kaizen strategy. It has been used in Slovakia and in Czech Republic since 2000.

Experience and expertise of manufacturing companies highlight the need for a perpetual improvement of systems, especially of quality processes. We can state that if a company wishes to be successful in a market, it needs to implement innovation and modern strategies that support growth, provide competitive advantage, help attain profit, and maximize market value of the company. We do not wish to contradict opinions of the scholarly and professional public about the Japanese management systems of companies, however, in our article we would like to point out benefits and advantages that implementation of Japanese systems bring. It is worth noting that Japanese companies develop and manufacture products with the help of modern quality management systems. It was proven, that successful companies were able to forecast changes and react to them in time, while they were still manageable. The „How to manage changes“question can be answered very simply, that is „By implementing the Kaizen strategy“. Author Masaaki Imai (Kaizen, 2012, p. 16) as a first person came with the idea that in case of the Kaizen strategy, it is a strategy that can help deal with changes of the new millennium.

1.1.1 Kaizen – Basic Definition of the Strategy

The Kaizen strategy can be defined based on terms determined by several authors. However, Masaaki Imai, the creator of the strategy defines the strategy most appropriately (1). The basis of the term is simple and clear: Kaizen means to improve and to perfect. Lecturers of the Kaizen Institute of Czech and Slovak Republics define the Kaizen strategy as a process of change. In our article, we will also define the Kaizen strategy as a process of change. The Kaizen strategy encompasses other techniques and tools, which are necessary for successful application of the strategy in a company.
By combining all techniques and tools we create a wholesome system, the Kaizen Management System, KMS. It is a system for a company’s long-term profit and growth. It has four basic pillars: TFM – Total Flow Management, TPM – Total Productive Maintenance, TQM – Total Quality Management, and TSM – Total Service Management, that is tied to the TCM – Total Change Management methodology with a change in thinking. The main goal of KMS is to continuously improve from supplies of materials and subcontractors to completely fulfilling customer’s expectations. Main tools are: inclusion of all employees and use of their creativity, set up of all processes, zero tolerance of mistakes and defects, effective use of equipment and technologies, use of systems of lean production and QCD – Quality, Cost, Delivery.

(Picture 1) The basis for creating the system is to open one’s consciousness and to utilize (MUDA) and basic tools, Kaizen Foundations. These are mainly: the 5S method, standardization, problem solving story, and using visual management.

**Picture 1: Kaizen Management System**

**Accomplishment of Wold Class**

![Diagram of the Kaizen Management System](image)

Source: interpretation by Čierna

**1.1.2 Paradigm and Ways to Eliminate It**

The term paradigm stands for a sum of specific opinions, ideas, values, and processes that are shared by a specific group of people. It is a way of thinking, which influences our ability to interpret daily situations or problems. In practice we see a common phenomenon that we cannot eliminate problems. It is caused by a stereotypical or a commonly used approach to solving daily situation and problems. It is common that each person acts according to accepted paradigms. True solution of problems is based on a new view of a problem, change in thinking in all aspects. This means, ability to eliminate all implemented paradigms and to see a problem as a challenge and try to fully remove it with the new approach. If we want to eliminate paradigms, we need to change our thinking.

To change one’s thinking, we can use some suggested tools that are intended for this use. The basic tool for change of thinking is benchmarking. Another one is change in perception,
which stems from active participation in the process of change, continuing education, and training of determination. Experts of the Kaizen strategy consider changing one’s attitude as the fastest way to change thinking. And in the changed attitude run a pilot project. Change in thinking will also bring visible, positive changes.

1.1.3 MUDA and GEMBA

This is basic terminology of the Kaizen strategy, which we will use throughout our article. MUDA can be characterized as waste, loss, deterioration of values, incorrectness. In case that we are able to uncover MUDA, we have successfully uncovered potential profit. The goal of elimination of MUDA from the manufacturing process is to always decrease costs, current or potential. In the manufacturing process, activities tied to adding value to a product could also add to decrease of its value (3).

In the manufacturing process we observe an unlimited amount of MUDA. According to the creator of the Kaizen strategy, Massakiho Imaia, MUDA is eternal and it will never be fully eliminated from processes. In practice we encounter seven most common types of MUDA:

- Waiting – for example waiting for managers’ decisions, orders, supply of materials, arrival of transport, repair of production line;
- Inventory – extend delivery time, locked-in money, takes up production and warehouse areas, extends manipulation time;
- Transportation – requires time that needs to be paid, increases costs for transport technology, increases risk of damaging the transported product;
- Defects – present increase in repair costs, slow down production, etc. These are not waste;
- Over-Processing – incorrectly established procedure or production process and time extension due to losses from storage, transport and defects;
- Overproduction – manufacturing into warehouse or for inventory
- Motion – require time, cause fatigue that can lead to injuries, absenteeism and defects (Picture 2).

**Picture 2: Seven Types of MUDA**

![Image of MUDA categories: Transportation, Defect, Inventory, Over-production, Motion, Over-processing, Waiting.](http://dx.doi.org/10.15414/isd2016.s4.01)

Source: interpretation by Čierna
GEMBA is another term used in the Kaizen strategy. It means or identifies a place where values are created, where improvement of company’s processes takes place and creates place for initiatives to achieve changes. This place can be a workshop in the production process, a warehouse in a service process or an office in administration. Additional term is GEMBUTSU. It is defined as the real product.

As we have indicated above that MUDA cannot be completely eliminated, but its influence can be minimized. Any employee, of any age, at any hour, anywhere, and at any point of the company’s process can try to eliminate MUDA. In this part of our article we can also define an approach of the Kaizen strategy, which means: go to GEMBA, watch GEMBUTSU and apply Kaizen.

1.1.4 THE 5S METHOD

This method is considered to be the basic tool of the Kaizen strategy. It is the corner stone for implementing other, more advanced, methods. The method was taken from standards of the American Army and in a broader meaning of the word can be defined as „making leaner“. The method does not require any advanced management techniques. We deal with five Japanese words:

- **Seiri** – sort - sort out and separate that which is needed and not needed in the area, the result is selected material, more room, awareness, system and bigger flexibility;
- **Seiton** – straighten – arrange item so that finding them will require the least time and effect. All things have their place and this way we eliminate unnecessary searching and waiting– MUDA.
- **Seiso** – shine – tools, work environment and warehouse areas are to be maintained clean and try to remove all sources of pollution. Equipment is in the best possible shape.
- **Seiketsu** – standardize - develop standards that help maintain the state of formally implemented steps; and
- **Shitsuke** – sustain – create a 5S culture, self-discipline, control.

The 5S method cannot become only a formal project, it needs to become the essence of the company. Implementation of the 5S method requires inclusion of employees of all organizational levels.

1.1.5 Visual Management

It is a sum of graphic tools, pictures, and aids that can clarify an entire process and help understand situations and company processes to all interested parties. We can state that visual management allows employees to quickly understand the state of a process, standards, deviations, and many other factors. Among techniques of visual management belong: color coding and labeling, graphics, signals, boards, diagrams, picture documentation, and more. Visual management should be understood as a tool, not as a goal of a company. Appropriate visualizations are: interaction of processes, problem solving story, action plans, standards and basic reasons for bad quality, visualization of optimal workload for employees at a production line.

1.1.6 Kaizen Teams

Experience shows that people who work as part of a team achieve better results than when working independently. One of the priorities of a company should be to create a more productive and effective organization based on teams. To rely only on loyalty of top performing and knowledgeable employees is very risky.
Kaizen teams with their continuous approach use all resources to solve daily problems and to make decisions at work, and the team takes responsibility for these. A team comprises of people whose common goal is to perpetually improve their work. Professional knowledge and personal experience should complement each other.

Education and development are one of the basic conditions of preparedness of a Kaizen team to solve problems related to MUDA. Team members need to learn a number of methods and techniques, which they have until now not used in their work. It is imperative that they have absolute support of the company’s management.

2. Application of the Kaizen Method in Specific Companies in Slovakia

When applying the Kaizen method in companies we focus on comparison of companies where the Kaizen method has already been applied (two companies) with a company that does not use the method in their processes. By appropriately applying this method, we can achieve a more flexible company and better results when utilizing the same resources. We will focus on specific steps, tools, and methods of application of the Kaizen method in companies. The secondary aim will be to show advantages of application of the Kaizen method in the manufacturing and management processes of a company.

For the purpose of this article we have analyzed two companies that operate in Central Slovakia where the Kaizen method is applied and used in processes. The third studied company is a leading paper and pulp producer from Central Slovakia. This company had not implemented the Kaizen method for process management and quality improvement. Due to sensitive information about each company, we do not indicate names of the companies that were used in this study. Through a structured dialogue, we focused in these companies on the level of use of quality management systems and use of standard, modern, management quality systems. After data analysis, we have observed the following results.

3. Results and Discussion

When applying the Kaizen concept and using its tools and methods, we suggest to consult with professional, consulting organizations, which have successfully implemented this concept in numerous organizations. A decision to implement Kaizen must stem from a need to optimize processes of a company, to eliminate problems, to achieve effective manufacturing, to decrease costs, to be more competitive, and to achieve better placement on the market. We do not recommend implementing the Kaizen method as a modern trend since implementation could have an opposite effect.

We have come across interchangeable use of the term Kaizen and innovation. Both concepts of improvement, Kaizen and innovation, can be implemented at any level of company’s chain of processes. Kaizen is usually implemented in research and development, and innovation is part of marketing. The impact of the Kaizen strategy is more noticeable in manufacturing and in sales, while innovation is more applicable in science and technology (Picture 3).
Another aspect of the Kaizen strategy and methods for process improvement, which remains misunderstood, is “pressure” of management to achieve immediate results. This forces employees to focus their attention on innovation, and as a result they do not address optimization, complete improvement of processes, and flexibility of the company.

Improvement and perfecting of processes with the use of Kaizen methods is gradual and often not noticeable, while its effects are more visible in the long run. We recommend managements of companies to be patient when expecting results. We appeal to instead of strictly evaluating based on results rather reward efforts to improve.

Application of the Kaizen method in a company can be successful only if the company’s management and employees are open to changes. Successful improvement that leads to a more effective company is accompanied by fear of change, fear of risk, and concerns about results. We recommend overcoming these fears by analyzing studies about improvements, conducted with leading companies.

To decrease the risk of failure during implementation of changes, we recommend adhering to the following algorithm:

- **Training**
  - choose a new place for vacation, new hotel or restaurant when on business trip instead of familiar places, learn a foreign language at higher age

- **Benchmark**
  - study experiences of those who have already taken the road that you are studying and have achieved results

- **Internet**
  - email communication, to find new suppliers, to compare new options for suppliers

- **Pilot Projects**
  - to test new approaches with limited involvement

- **Brainstorming**
  - use the team method to find possible dangers
Finally, we recommend that companies standardize achieved results in an appropriate format, for example by published internal guidelines that update the new processes. We can say that there is improvement only if in the near future processes are carried out according to the new standard. We recommend that company’s management strictly supervises adherence to the new standard shortly after its implementation. One variable of implementation of the Kaizen method in a company is the fact that it forces company’s management to consider when existing standards were last reevaluated. In terms of this strategy of company management, we recommend that companies during some interval reevaluate their existing standards and try to improve them.

We have achieved the following based on suggested measures of the Kaizen method:

- minimal and controlled inventory of material entries
- profitable costs for storage
- quicker reactions to requirements from manufacturing as an internal client
- higher satisfaction of internal clients

In conclusion, we would like to recommend that companies pay adequate attention to problems. Problems should be understood as opportunities for improvement. Where there is no problem, there is no opportunity for improvement. In a company, anything can constitute as a problem; something that causes problems to employees on various levels, employees in other processes or to end customers. Experience has shown that a person that is causing a problem is not directly affected by this problem. We recommend that an individual not transfer a problem to another process.

The worst that an employee can do is to ignore a problem, hide it or deny it. On the contrary, if management supports Kaizen and motivates employees to improve, employees are ready and capable to identify and solve problems.

We recommend using every opportunity to improve the company, to apply the Kaizen method, because at the beginning of Kaizen is always a problem.
4. Conclusion

The aim of the article to was offer a process of application of the Kaizen method in a specific company, based on analysis. With the help of appropriately selected Kaizen tools we have in a specific company eliminated a problem of increased costs for storage of inventory of material entries and raw materials in the manufacturing process. Based on the results, we suggested measures to the company to eliminate the problem at hand.

In the theoretical part of our study, we concentrated on presenting theoretical information about tools and methods of quality system management. Additionally, we offered a position to the Kaizen method, which Slovak companies are adopting. We focused on analysis of two companies, which used the Kaizen method in their daily activities. We based these on internal resources of both companies. In the third company, through a structured dialogue, we determined level of use of methods and tools of a quality management system. We have determined a problem, which management of the company had not been solving. In the third part we have evaluated benefits of application of the Kaizen method in companies. We made recommendations to the companies of other tools of the suggested concept, which will allow the companies to improve processes and will lead to overall flexibility.

We believe that our suggestions and recommendation for each company, which are outlined in part three, will contribute to wider use of the Kaizen method in Slovak companies.

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