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# THE PLACE AND ROLE OF KAIZEN MANAGEMENT IN THE KNOWLEDGE-BASED ORGANIZATION

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ABSTRACT: This article is structured around the principles of KAIZEN and the way they can be applied within a knowledge-based organization to improve activities and reduce waste in its processes. The main concepts of the KAIZEN philosophy are presented, including continuous improvement, waste elimination, process orientation, and employee involvement in improving working methods. The case study focuses on a technical and commercial process, namely the quotation process, within a company operating in the field of industrial automation. The main problems, the factors that influence process performance, and the opportunities for improvement are identified. Based on these elements, several solutions are proposed regarding the standardization of activities, increased process visibility, and the use of digital technologies for repetitive tasks. The article highlights the place and role of KAIZEN management within a knowledge-based organization and the way it can contribute to reducing waste, using resources more efficiently, and supporting the continuous improvement of organizational activities.

KEYWORDS: KAIZEN management, knowledge-based organization, continuous improvement, quotation process, standardization

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## 1. INTRODUCTION

Modern organizations are undergoing rapid changes driven by technological development and the economic environment. For this reason, they need to become more flexible and adaptable. Maintaining a constant level of performance is no longer sufficient, as continuous improvement is necessary to preserve competitiveness and long-term performance [1].

In the context of Industry 4.0 and digital transformation, organizations increasingly use information systems, automation, and tools based on artificial intelligence. These technologies contribute to information management and to increasing process efficiency [2]. Employee experience, technical competencies, and decision-making capabilities remain important, especially in complex processes.

KAIZEN, based on small and continuous improvements, can also be applied within knowledge-based organizations, where information, employee experience, and collaboration represent fundamental resources. KAIZEN management focuses on eliminating activities that do not add value, standardizing working methods, and involving employees in identifying opportunities for improvement [1].

The aim of this article is to highlight the place and role of KAIZEN management within the knowledge-based organization. The practical section includes a case study of a technical and commercial process, namely the quotation process within a company operating in the field of industrial automation. The main problems, the causes that influence process performance, and the directions for improvement are identified.

## 2. KAIZEN MANAGEMENT IN KNOWLEDGE-BASED ORGANIZATIONS

In modern knowledge-based organizations, information represents one of the most important resources for carrying out activities and maintaining competitiveness. This type of organization depends mostly on employee experience, technical competencies, and the way in which information is used in daily processes. The ability to transform information into useful knowledge and to use it in the decision-making process contributes to the performance and adaptability of the organization [3].

Knowledge management has the role of ensuring the collection, organization, and efficient use of information. An important aspect is the standardization of information and the documentation of processes [4]. When information is clearly structured and accessible to employees, activities become easier to carry out, while dependence on the experience of a single person is reduced. The documentation of good practices facilitates knowledge transfer and contributes to maintaining the continuity of activities [5].

Collaboration is another important element. The exchange of information and experience between employees contributes to the faster identification of problems and to finding suitable solutions [6].

Through employee involvement and constant communication between teams, organizations can respond more easily to changes and support the continuous improvement of processes.

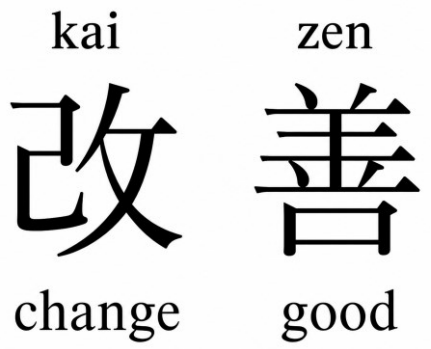


**Figure 1.** Meaning of the Japanese Term KAIZEN

KAIZEN is based on the idea that any activity can be improved, even when it already works well. Improvements are not achieved through major and sudden changes, but through small steps applied consistently over time. KAIZEN management focuses on process orientation, the elimination of activities that do not add value, standardization, and the involvement of all employees in improving working methods [7] [8].

In knowledge-based organizations, waste is not only material but can also be informational or intellectual. The loss of information, the existence of several versions of the same documents, the time spent searching for data, and dependence on the experience of certain employees represent forms of MUDA. These problems can generate delays, repetitive activities, and errors within processes [4] [9].

The application of KAIZEN management contributes to reducing these losses through the standardization of information, improved communication, and the more efficient use of existing knowledge. At the same time, employee experience can be transformed into procedures, standards, and good practices that can be used across the organization [5].

In the context of digitalization, KAIZEN and technology can coexist. Digital systems and tools based on artificial intelligence can support repetitive activities, reduce processing time, and increase process visibility [2] [10].

The use of digital tools together with employee expertise supports the development of hybrid processes, in line with the principles of Lean 4.0 [2]. Experience, analysis, and decision-making remain the responsibility of specialists, especially in complex activities. In this way, KAIZEN management supports the development of hybrid processes based on collaboration between people and technology [10].

## 3. CASE STUDY OF THE QUOTATION PROCESS

### 3.1 Research Methodology and Organizational Context

The study includes the analysis of the quotation process within a company operating in the field of industrial automation, specifically in measurement solutions for industrial processes. The selection of this process is determined by its importance within the organization and by the possibility of studying it from an internal perspective. This allows the direct observation of activities, the understanding of working methods, and the identification of difficulties encountered in daily work.

The study uses both bibliographic sources and information obtained from the activities carried out within the quotation process. The data come from the activity of a quotation team organized by sales areas. The main stages of the process, the people involved, and the digital tools used are followed. Situations that generate delays, additional clarifications, repeated activities, or difficulties in information management are also identified.

The study is conducted in relation to KAIZEN principles, with emphasis on activities that do not add value and on opportunities for improvement. The 5 Why method, GEMBA principles, the 5S technique, the PDCA cycle, and performance indicators are used. Based on these elements, proposals are formulated to reduce waste, improve the flow of information, and increase the efficiency of the quotation process [1] [11].

The quotation process involves the collaboration of several departments and requires the continuous exchange of technical and commercial information. Because of this, even small delays, incomplete information, or repeated activities may affect the overall processing time and the quality of the final quotation. These characteristics make the process suitable for the application of KAIZEN principles focused on continuous improvement and waste reduction.

3.2 Description of the Current Quotation Process

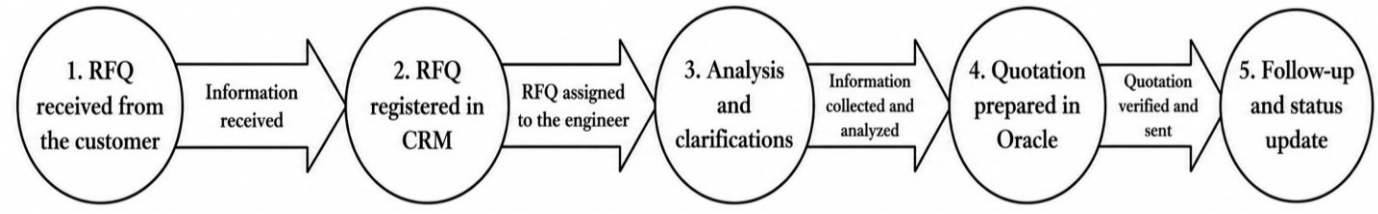


**Figure 2.** Quotation Process

The quotation process begins when the company receives a Request for Quotation, RFQ, from the customer. The request is registered in the CRM (Customer Relationship Management) by the person responsible for receiving and distributing the requests.

After registration, the request is assigned to a Technical Sales Engineer by the person responsible for this activity. The engineer verifies the information received, analyses the requirements, and establishes the appropriate technical solution. When the available information is insufficient, additional clarifications are requested from the customer or from other people involved in the process.

After the technical analysis is completed, the quotation is prepared in the Oracle system. At this stage, the products are configured, and the prices, commercial conditions, and required documents are established. The quotation is then verified and sent to the customer, while its status is updated in the system. Follow-up activities are carried out to obtain a response and identify possible changes or additional requirements.

The process is organized by teams according to regions and countries. Requests for quotation are divided into three levels of complexity. TIER 0 includes simple requests that can be processed using standardized information and solutions. TIER 1 includes requests with a medium level of complexity that require additional analysis. TIER 2 includes complex requests that require detailed analysis and collaboration with other departments or specialists.

The process is functional and supported by digital systems. At the same time, several opportunities for improvement are identified, especially regarding processing time, information management, and status updates.

3.3 Current Process Performance Analysis

The quotation process is well structured and supported by several digital tools used in daily activities, including Microsoft Teams, Outlook, CRM, OCM, Oracle, SharePoint and Microsoft Power BI. These platforms support communication, request registration, information analysis, quotation preparation and status monitoring throughout the process.

The workflow follows clearly defined stages, from receiving the Request for Quotation (RFQ) to sending the quotation and performing follow-up activities.

**Table 1.** Average Quote Turnaround Time by Tier

| Tier | Average turnaround time |
|---|---|
| Tier 0 | 1.67 days |
| Tier 1 | 2.90 days |
| Tier 2 | 5.35 days |

The processing time depends on the complexity of the quotation. TIER 0 quotations are based on standardized products and information, while TIER 1 and TIER 2 quotations require additional technical analysis, collaboration with specialists and further validation.

Key Performance Indicators (KPIs) are measurable values used to evaluate process performance and the achievement of operational objectives [12].

The main KPIs considered in the quotation process are:

- Quote cycle time;
- Quote turnaround time;
- Productivity, expressed as quotes completed per working day;
- Follow-up time;
- Status update accuracy;
- Quote conversion rate.

The current year-to-date average productivity is 2.1 quotes per day, compared with the FY26 target of 2.4 quotes per day.

**Table 2.** Technical Sales Engineer Productivity Targets and Results

| Indicator | Quotes per day |
|---|---|
| FY24 Target | 2.0 |
| FY25 Target | 2.2 |
| FY26 Target | 2.4 |
| Previous Year Average | 2.0 |
| Current YTD Average | 2.1 |

The annual productivity targets have gradually increased from 2.0 quotes per day in FY2024 to 2.4 quotes per day in FY2026.

This reflects the organization's objective of continuously improving process efficiency, while the current year-to-date average of 2.1 quotes per day remains below the FY2026 target.

**Table 3.** Technical Sales Engineer Productivity by Period

| Indicator | FY25-P09 | FY25-P10 | FY25-P11 | FY25-P12 | FY26-P01 | FY26-P02 | FY26-P03 | FY26-P04 | FY26-P05 | FY26-P06 | FY26-P07 | FY26-P08 | FY26-P09 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quotes/day | 1.8 | 1.9 | 1.9 | 2.2 | 1.9 | 1.9 | 1.9 | 2.4 | 2.1 | 2.5 | 1.9 | 2.0 | 1.9 |

The monthly productivity results show a generally stable level of performance, although some differences can be observed between periods. The highest value was recorded in FY26-P06, with 2.5 quotes per day.

These variations may be related to workload and quotation complexity. The results show that more complex quotations can reduce daily productivity and confirm the need for continuous process improvement.

**Table 4.** Evaluation of KAIZEN Maturity in the Quotation Process

| Evaluated Component | Level | Observation |
|---|---|---|
| Data and KPI use | High | CRM and KPI support process monitoring |
| Process standardization | Medium | Some activities depend on quotation complexity |
| Employee involvement | High | Active collaboration and knowledge sharing |
| Waste reduction (MUDA) | Medium | Waiting time and repeated clarifications remain |
| Digitalization and automation | High | Digital tools support the process; automation can be extended |
| Information management | High | Information is accessible and used efficiently |
| PDCA application | High | The process is monitored and continuously improved |
| Reduced dependence on individuals | Medium | Some activities still depend on individual experience |

Based on the evaluation criteria, the quotation process demonstrates an intermediate to high level of KAIZEN maturity. The process benefits from a structured workflow, digital support, performance monitoring and continuous improvement practices. Further opportunities for improvement are related to information standardization, the reduction of repetitive activities and the more efficient use of the available digital tools.

### 3.4 Problems and Waste Identified in the Process

The main waste is associated with incomplete information received from the customer, the need to request data from other departments, and the waiting time for responses or approvals. These situations may lead to repeated activities and increase the time required to prepare the quotation.

Other forms of MUDA include entering the same information into several systems, searching for data in different sources, and inconsistent status updates. These activities require additional time and reduce visibility over the progress of quotations.

Repetitive activities related to low complexity requests and repeated quotation revisions were also identified. The manual processing of simple requests may lead to the inefficient use of specialized resources, which could be allocated to quotations with a higher level of complexity.

A significant part of the time required to prepare a quotation is not generated by value-added activities, but by waiting periods, the collection of additional information, and repetitive tasks [9]. The identified forms of MUDA do not significantly affect the operation of the process, but they reduce its efficiency by increasing processing time and resource use.

### 3.5 Application of KAIZEN Tools

The 5 Why method, GEMBA principles, the 5S technique, the PDCA cycle, and performance indicators were used to analyze and improve the quotation process [1] [11].

The 5 Why method was used to identify the main cause of the long processing time [13]. Some activities are repeated manually and depend on the experience of each employee. The root cause is the lack of standardization and the existence of repetitive activities that consume time.

**Table 5.** Root Cause Analysis Using the 5 Why Method

| Stage | Analysis |
|---|---|
| Problem | Long quotation processing time |
| Why? | A large part of the time is spent obtaining the information required to prepare the quotation. |
| Why? | Additional clarifications and searches across different sources, such as the customer and specialists, are required. |
| Why? | The information initially received is not always complete or sufficiently detailed. |
| Why? | There is no fully standardized method for collecting and organizing the information required to prepare the quotation. |
| Why? | The process has developed gradually, and some activities still depend on different working practices and individual experience. |
| Root cause | Limited standardization of information and the existence of repetitive activities that consume time without adding direct value. |

GEMBA refers to the direct observation of activities at the place where the work is carried out, allowing problems and waste to be identified more accurately [1]. In this study, GEMBA principles were applied through the direct observation of the activities performed within the quotation process.

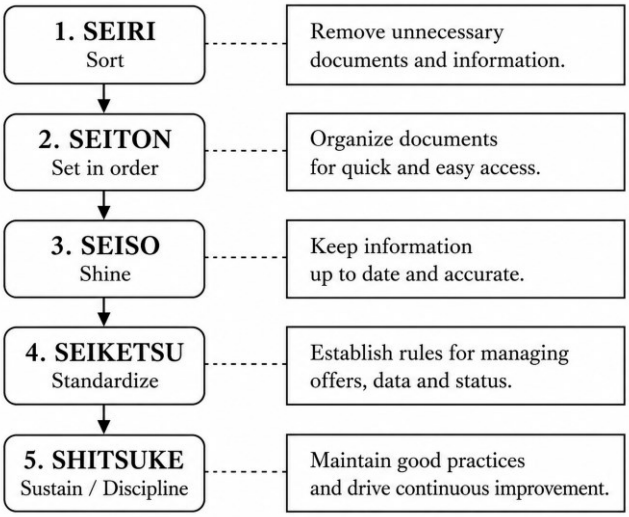


**Figure 3.** The 5S Method Applied to the Quotation Process

The 5S technique supports the organization and standardization of the workplace and can also be adapted to digital working environments [11]. In the quotation process, it was applied by organizing documents and information, removing outdated data, and establishing clear working rules.

Performance indicators were used to monitor processing time, productivity, follow-up activities, and status updates.

The PDCA cycle provides a structured approach for planning improvements, implementing them, checking the results, and standardizing effective solutions [1]. For this study, the cycle was used to organize the proposed improvement measures.

The application of these tools contributes to reducing the loss of time and information, increasing process visibility, and using internal platforms more efficiently.

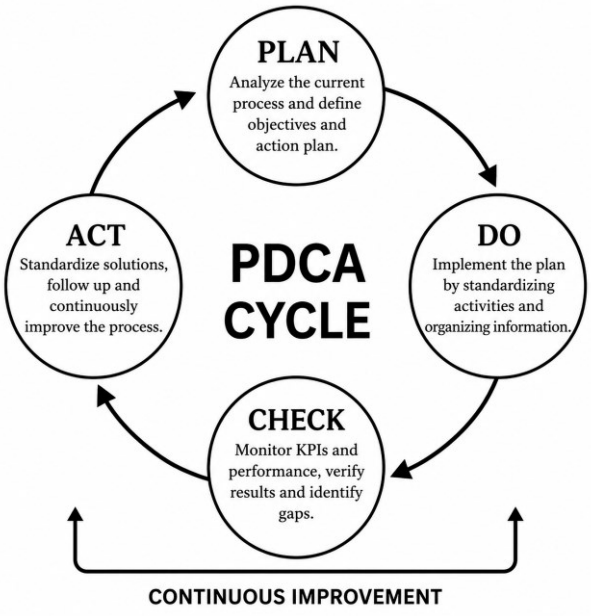


**Figure 4.** Application of the PDCA Cycle to the Quotation Process

### 3.6 Proposed Improvement Measures

The proposed measures focus on using the technology currently available to support the quotation process and reduce repetitive activities.

Based on the identified waste and the process performance results, the proposed measures were selected according to their potential to reduce processing time, improve information access, and increase process visibility. Their implementation should follow a gradual approach, starting with information standardization and pilot testing, followed by wider application and continuous monitoring through the selected KPIs and the PDCA cycle.

The model focuses on optimization, automation, standardization, clear information, and higher process efficiency.

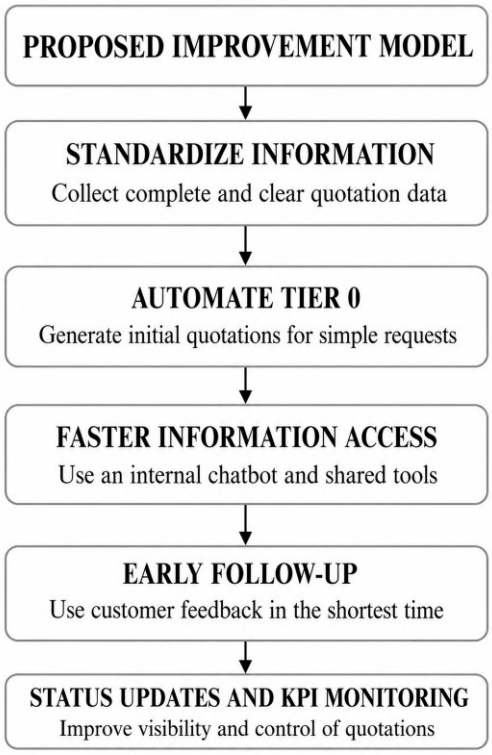


**Figure 5.** Proposed Improvement Measures

For TIER 0 quotations, some activities can be automated, such as generating an initial version of the quotation. This version is then checked and validated by the Technical Sales Engineer before being sent to the customer. In this way, specialists can allocate more time to TIER 1 and TIER 2 quotations, which require technical analysis and collaboration with other departments.

An internal chatbot can support faster access to technical and commercial information, procedures, and configuration rules. This solution can reduce the time spent searching for information and limit dependence on the individual experience of employees.

Follow-up activities should be carried out as soon as possible after the quotation is sent. They are based on customer feedback and allow the rapid identification of changes, clarifications, or additional requirements.

The correct use of existing tools, such as CRM, SharePoint, and Microsoft Power BI, contributes to more accurate information updates, better process visibility, and easier identification of bottlenecks. These measures can be supported through employee training and their involvement in proposing improvement ideas.

## 4. EXPECTED RESULTS

The implementation of the proposed measures may contribute to reducing processing time and using the available resources more efficiently. The automation of some activities related to TIER 0 quotations may free up time for TIER 1 and TIER 2 requests, which require technical analysis and collaboration with other departments.

The standardization of activities and the clearer organization of information may reduce repetitive tasks and dependence on the individual experience of employees. The correct use of existing digital tools may also increase process visibility and support the faster identification of bottlenecks.

Follow-up activities carried out shortly after the quotation is sent may support the faster conversion of quotations into orders. Customer feedback helps identify the clarifications, changes, or commercial conditions that influence the purchasing decision. Based on this information, the quotation can be adjusted more quickly according to customer requirements.

The expected results can be monitored through indicators such as processing time, productivity, status update accuracy, follow-up time, and quotation conversion rate. The gradual implementation of the proposed solutions allows the results to be verified and the effective measures to be standardized.

## 5. CONCLUSIONS

The study shows that KAIZEN management has an important place and role within knowledge-based organizations. It supports continuous improvement, the efficient use of information, the standardization of activities, and employee involvement in improving working methods.

The application of KAIZEN principles can contribute to reducing waste and transforming employee experience into procedures, shared knowledge, and good practices. At the same time, digital technologies can support repetitive activities and increase process visibility, while specialists remain responsible for analysis, validation, and decision-making.

The quotation process analyzed in this article provides a practical example of these principles. The proposed model combines employee experience, standardized activities, and digital technologies to support more efficient and adaptable organizational processes.

The findings also show that KAIZEN management is not limited to production activities. Its principles can also be applied to technical and commercial processes, such as the quotation process, to reduce delays and improve overall performance. This confirms the broader applicability of KAIZEN within knowledge-based organizations.

## 6. REFERENCES


[1] Imai, M., Gemba Kaizen: A Commonsense Approach to a Continuous Improvement Strategy, Second Edition, McGraw-Hill Education, New York, (2012).

[2] Elafri, N., Tappert, J., Rose, B., Maleh, Y., Lean 4.0: Synergies between Lean Management Tools and Industry 4.0 Technologies, *IFAC-PapersOnLine*, Vol. 55, No. 10, pag. 2060-2066, (2022).

[3] Nonaka, I., Takeuchi, H., *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford University Press, New York, (1995).

[4] Davenport, T.H., Prusak, L., *Working Knowledge: How Organizations Manage What They Know*, Harvard Business School Press, Boston, Massachusetts, (1998).

[5] Magnier-Watanabe, R., Getting Ready for Kaizen: Organizational and Knowledge Management Enablers, *VINE*, Vol. 41, No. 4, pag. 428-448, (2011).

[6] Brunet, A.P., New, S., *Kai*zen in Japan: An Empirical Study, *International Journal of Operations & Production Management*, Vol. 23, No. 12, pag. 1426-1446, (2003).

[7] Carnerud, D., Jaca, C., Bäckström, I., Kaizen and Continuous Improvement: Trends and Patterns over 30 Years, *The TQM Journal*, Vol. 30, No. 4, pag. 371-390, (2018).

[8] Liker, J.K., T*he Toyota Way: 14 Management Principles from the World's Greatest Manufacturer*, McGraw-Hill, New York, (2004).

[9] Ohno, T., *Toyota Production System: Beyond Large-Scale Production*, Productivity Press, Cambridge, Massachusetts, (1988).

[10] Cheng, C.H., Li, M.H., Tang, B.J., Cheng, Y.R., The Impact of Knowledge Management and Organizational Learning Promotion in Small and Medium Enterprises on the Implementation of Industry 4.0 and Competitiveness, *Administrative Sciences*, Vol. 14, No. 8, article 161, (2024).

[11] Țîțu, M.A., Oprean, C., Grecu, D., *Applying the Kaizen Method and the 5S Technique in the Activity of Post-Sale Services in the Knowledge-Based Organization*, International MultiConference of Engineers and Computer Scientists, IMECS 2010, Vol. III, pag. 1863-1867, Hong Kong, (2010).

[12] Bhatti, M.I., Awan, H.M., Razaq, Z., The Key Performance Indicators and Their Impact on Overall Organizational Performance, *Quality & Quantity*, Vol. 48, No. 6, pag. 3127-3143, (2014).

[13] Goetsch, D.L., Davis, S.B., *Quality Management for Organizational Excellence: Introduction to Total Quality*, 8th edition, Pearson, Boston, Massachusetts, (2016).