

APPROACHES REGARDING THE MATURITY ANALYSIS OF QUALITY MANAGEMENT SYSTEMS AS A RESULT OF IMPLEMENTING ISO 9000 SERIES

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Abstract: *Organization maturity assessment aims to determine its ability to continuously monitor the external environment to identify opportunities, trends and risks, and the internal environment to determine the capability of its processes to achieve planned objectives. The purpose of the organization's maturity assessment is both assuring an efficient management of processes and resources and identifying and attracting the necessary resources to achieve the expected performance. Quality management systems (QMS) help companies develop and maintain an adequate and stable quality of their products by controlling the production process and other business processes supporting it.*

In this paper, the authors suggest the possibility to develop a theoretic framework for assessing organizations' maturity as a result of the implementation and certification of quality management system according to ISO 9000 family of standards.

Key words: *Quality Management System, sustainability, organizational maturity assessment, ISO 9000 series.*

JEL Code: *M11, L15*

Introduction

Organization maturity assessment aims to determine its ability to continuously monitor the external environment to identify opportunities, trends and risks, and internal environment to determine the capability of its processes to achieve the planned objectives. The purpose of the organization's maturity assessment is both assuring an efficient management of processes and resources and identifying and attracting the necessary resources to achieve the expected performance (Paunescu et al, 2010)

Review of literature

Quality management systems (QMS) help companies develop and maintain a proper and stable level of quality of their products by controlling the production process and other business processes supported by it. The ISO 9000 international quality standards series (including the standards ISO 9001, ISO 9000 and ISO 9004) provides a framework for such a management system (QMS). Moreover, winning an ISO 9001 certificate enables companies to signal their quality in business. The standards develop approximately every seven years and therefore they develop their expected requirements and effects on business performance. In 2008 their fourth edition was already issued (the previous issues were published in 1987, 1994 and 2000). The requirements of the last two editions of the ISO 9000 strongly emphasised the effective implementation of business processes. If properly understood and implemented, these requirements bring less bureaucracy and provide a basis for the innovative ways of developing and using QMSs to achieve higher output quality and improvements in business performance (Rusjan, 2010).

ISO 9000 Quality Management System certification requires a focus on performance measures underscoring that an organization's management system is a valuable, non-tangible asset (Bell 2011).

ISO 9000 standards allow organisations, by successfully passing the required audits, to achieve an internationally-recognised registration status.

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Although the popularity of ISO 9000 family of standards is increasing, highlighting the importance given by the implementation process of quality management system there are still many questions about the effects of this standard on the organization's performance and on its customers and suppliers (Olaru, 2009).

Basis for Designing the Model

As an organization progresses from one level of maturity to the next, according to the following description of the CMM, its culture is transformed through the evolutionary improvement of its processes and, as a result, its behaviours should evolve to denote its responsibility towards nature and overall society. It is important to highlight that each advanced level incorporates the attributes of the previous maturity level (Cagnin). The main characteristics of each level in the CMM are:

- **Level 1 – Initial:** management approach inconsistent with the required processes, which are unpredictable and poorly controlled, as well as roughly predictable schedules and costs. Success depends on an exceptional manager and an experienced development team. However, processes cannot be repeatable without the same human resources involved. Hence, capability is a characteristic of individuals rather than of the firm;

- **Level 2 – Repeatable:** project management approach where previously mastered tasks can be repeated. Usual areas of improvement are: assistance and assurance of policy compliance; measurement projects; management of product configurations; management of suppliers; planning and tracking projects, and managing requirements. Here the organization has achieved a stable process with repeatable management control level and project management of commitments, costs, schedules and changes. Thus, new projects are planned and managed based on experience with similar projects and, therefore, policies support managers to establish suitable management processes;

- **Level 3 – Defined:** process management approach where processes are characterized and fairly well understood. The usual areas of improvement are: coordination between organizational groups; provision of organization-wide training; collection of process-level data; deployment and management processes; definition of common processes; identification of required processes; and establishment of improvement infrastructure. Here the organization defines the process as a basis for consistent implementation and with a better understanding and, therefore, the risk of introducing advanced technology is reduced. The process includes readiness criteria, inputs, verification standards and procedures, outputs and completion criteria. Moreover, the process capability is based on an organization-wide understanding of the activities, roles and responsibilities in a defined process;

- **Level 4 – Managed:** addressing the management capability in case the processes are measured and controlled. The usual areas of improvement are: establishment of capability baselines; as well as the quantitative management of processes. Here the organization initiated comprehensive process measurements and analysis. There might be an organization-wide database in use to collect and analyze data from the process of defining the projects. Furthermore, the process is measured and operates within measurable limits, as the trends in the process and the product quality can be predicted;

- **Level 5 – Optimized:** change of the management approach with a focus on processes improvement. The usual areas of improvement are: elimination of causes of defects; evaluation and implementation of improvements; as well as the development of change infrastructure. Here the organization has a foundation for continuously improving and optimizing the processes. The best practice and innovations are identified and transferred throughout the organization. Project teams are capable to analyze the defects and to determine their causes in order to evaluate the process of preventing known types of

defects from recurring and to disseminate the lessons learned in other projects. In addition, the efforts to remove waste, together with the process of changing in the common causes of inefficiency.

The relationship between ISO 9001:2008 and ISO 9004:2009

ISO 9001 is a standard developed by the International Organizations for Standardization and it serves as a framework for quality organizational management systems. This framework is recognized by organizations and governments around the world and has consequently grown into the de facto standard for management systems. Organizations incur significant costs to obtain certification making it worthwhile to study the process to better understand the pertinent measures for certification success.

In the past, the ISO 9004 standard was used either to go beyond ISO 9001 in order to improve performance or to help implement ISO 9001. Now the link with ISO 9001 has largely been broken.

The new ISO 9004 standard seems to have become a success management standard. The sustained success is now the goal of the standard. According to ISO 9004, organizations can achieve this goal by using a quality management approach.

The purpose of the new ISO 9004 standard is to help organizations to achieve sustained success by using a quality management approach.

According to the new ISO 9004 2009, an organization achieves sustained success when it meets its objectives and continues to do so over the long term. It further says that objectives can only be achieved if the organization consistently meets the needs and expectations of its interested parties (stakeholders). While ISO 9001 focuses on meeting the needs of customers, ISO 9004 goes beyond this and talks about meeting the needs of all interested parties (which includes not only customers but also shareholders, suppliers, partners, regulators, employees, unions, bankers, owners, and society in general). This is a far broader and more outward looking perspective.

Organization's maturity levels according to ISO 9004:2009

ISO International Standard describes five maturity levels of the organization as follows: start-up organization, proactive organization, flexible organization, innovative organization and sustainable organization.

Five maturity levels of the organization are used in relation to sustainable performance (Paunescu et al, 2010).

1. Start-up organization

Organizational context and strategic planning:

- the organization focuses on its economic results, products performance and observance of the legal requirements. Only sometimes is the organization environment considered through a reactive approach. Market information is not systematically selected and the organization is unable to anticipate changes;

- the organization has not defined a formal strategy, only the performance objectives;

Processes and resources management:

- resources are identified only for operational processes;

- the organization determines the requirements and resources without monitoring and control;

- natural resources are not identified and planned, neither the impact on the natural environment;

Analysis and evaluation:

- financial indicators are used only in combination with several non-financial indicators (such as delivery time, number of customer complaints);

Learning, improvement and innovation:

- learning, improvement and innovation are not included in strategies and policies;
- no solution is defined to take advantage of internal knowledge;
- improving products and processes is unplanned, following only regulatory requirements or customer complaints.

2. Proactive organization

Organizational context and strategic planning

- the organization has the mission, vision, strategies and objectives defined.
- strategic intentions are limited to: financial results, regulatory and legislative requirements, customer satisfaction.
 - objectives are aligned with the organization's strategy.
 - the management department communicates policies regarding quality management system throughout the organization.
 - the organization's environment is weakly observed and analyzed.
 - the processes, resources and structure are defined, implemented and regularly reviewed according to the strategies.

Processes and resources management

- the organization has identified the resources for the processes;
- there are goals defined for improving the process effectiveness;

Analysis and evaluation of results:

- regular meetings to review the quality management system which include qualitative purposes, quantitative tasks, main processes' performance, product quality indicators and customer satisfaction measurement;
 - there is not a clear link between the purpose and performance indicators;
 - the accuracy of the data that make up the indicators is unknown and the data analysis is very low;

Learning, improvement and innovation:

- the policies for learning and for processes and products improvement are defined;
- a management system is established for the continuous improvement of the processes; the results are shown by measurements and audit;
 - the training program is defined and adapted to the changing technologies used in products and processes.

3. Flexible organization

Organizational context and strategic planning:

- the organization has formally defined its mission, vision, strategy and objectives;
- regular reviews take place to ensure flexibility in the organization according to its environment, needs and strategy;
 - the organization has implemented a continuous improvement approach;
 - for its improvement the organization environment is monitored and analyzed to identify opportunities and risks.
 - the organization plans and provides resources in order to achieve its objectives according to its strategy.

Processes and resources management:

- it has implemented management, operational and support processes and it has identified the resources.
 - there are plans for the use, control, protection and development of resources, including the natural ones.
 - the aims to improve the effectiveness of processes are stable.

Analysis and evaluation of results:

- management decisions are guided by dates.

- the organization connects the important aims to the performance indicators.
- managers are trained and acquire skills in basic statistical analysis, being supported by experts in data analysis.

Learning, improvement and innovation

- the organization demonstrates a steady continuous improvement with implications in staff development.

• a suitable working environment is encouraged for improving innovation and for learning

- the training program is adapted to the change needs of the organization's processes and products, for the majority of staff.

4. Innovative Organization

Organizational context and strategic planning:

- the organization's environment is monitored and analyzed to improve the organization and to identify opportunities and risks;

• the innovation input data are collected from the customer's needs, legal and regulatory requirements, personal experience and the information on opportunities in internal and external environment;

Management processes and resources:

- the organization has implemented effective and efficient processes and it has improved strategic and operational support, including the relations with all relevant stakeholders;

• the processes work in an integrated way.

Analysis and evaluation of results:

- the organization's policies, aims and vision are developed on the organization's structure and processes;

• there are indicators present at all organization levels which measure all the significant financial and operational aspects, but not all aspects related to stakeholders;

Learning, improvement and innovation:

- the organization has defined and implemented a suitable innovation process that affects both processes and products.

• the management system is improved, using approaches and tools for excellent management, based on assessment of their own situation;

- the organization's training and learning program is based on the current and future needs defined in collaboration with the relevant stakeholders;

5. Sustainable organization

Organizational context and strategic planning:

- the customers' needs, the legal and regulatory requirements, the personal experience and the information on the opportunities in the internal and external environment and the risks are gathered and considered input data for sustainability.

• strategic orientation covers up all the gaps between the capabilities needed and the available ones at the time, as well as the opportunities and risks that are identified, based on an understanding of the organization's shortcomings.

Processes and resources management:

- identifies strategic resources for the achievement and development of sustainability through its strategic planning and it develops an effective and efficient plan to control, protect and develop its internal and external resources.

Analysis and evaluation of results:

- the indicators for all the sustainability constraints are highlighted regarding all the stakeholders' significant aspects.

Learning, improvement and innovation:

- the processes and products have been improved up to the last level being considered the best in their class area.
- knowledge management is considered the organization's success key at the strategic and operational level.
- developing and sharing knowledge is seen as a basis for the effective and efficient innovation process.

International standards also provide different models for assessing the ISO 9004 organization's maturity level, being one of them. A maturity model can be used as a benchmark for comparison and support to understand how the organization operates. By understanding the maturity model, organizations can use it not only to assess the current maturity level, but also to help them advance to the next level (Antonucci et al, 2004; Rad et al. 2006). Improving the maturity level of the processes leads to higher quality products or services. And this higher quality will reduce the time cycle and development effort of the products or services.

Conclusion

Over the recent decades, ISO 9000 has been viewed as one of the crucial quality programs for the improvement of the quality of products or services. Many organizations have struggled to obtain the ISO 9000 certification and to transform the ISO 9000 implementation into organizational performance. However, there has been much debate about the effectiveness of the ISO 9000 adoption.

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