

Discrepancy between ISO 9000 standard and its applicability toward business performance

JESUS GERARDO CRUZ ÁLVAREZ¹

BERENICE MENDEZ*

CARLOS MONGE PERRY*

Resumen

El presente trabajo de investigación se enfoca al análisis de la discrepancia existente entre el estándar ISO 9000 y su implementación; La discrepancia fundamental radica en el método de identificar y seleccionar los procesos clave de la organización y la alineación estratégica apropiada hacia los indicadores que mueven el desempeño de la organización. Se presenta una propuesta metodológica para la hacer una alineación entre los procesos clave y los indicadores de alto nivel para lograr niveles de superiores de desempeño basados en el estándar ISO 9000.

Palabras clave: ISO 9000, enfoque de procesos, indicadores clave de proceso, desempeño organizacional.

Abstract

This research focuses on understanding the discrepancy between ISO 9000 standard and its implementation; the fundamental discrepancy lies in the method for identifying and selecting key processes of the organisation and proper alignment to business indicators driving performance. We present a methodological proposal to perform the correct alignment between processes and key indicators to engage the organisation to higher level of performance on the based on ISO 9000 standard.

Keywords: ISO 9000; process approach; key process indicators; business performance.

¹* Universidad Autónoma de Nuevo León, Facultad de Contaduría Pública y Administración.

Introduction

ISO 9000 is broadly adopted standard focus on quality system; it defines the foundation of quality based on three key areas: 1) Quality system's documentation: quality manual, quality policy, quality objectives, and mandatory procedures, 2) Process management approach, and 3) Quality records. The international standard it is self-explanatory according to the related guidelines in regards of the requirements of quality documentation and quality records; even though ISO 9000 focus on process management approach there are some discrepancies in spite of its applicability towards business performance. Therefore, this empirical research paper will present a model that helps in this matter.

Purpose

The purpose of this article is to argue for an alternative approach to ISO 9000 implementation towards business process management. The proposed process management business model is unique because it offers a new perspective of management processes identification that complies with ISO 9000 and aligns core organisational functions and support areas to key process indicators.

An appropriate process management selection focus on key process indicators will lead the organisation to higher level of productivity and competitiveness.

Literature review

1.1. International requirements

ISO 9000 is a broadly implemented standard in which different countries around the world have gotten to an agreement about the specific requirement need to fulfil and be in compliance; According to Kumar and Ahuja (2007) the international standard ISO 9000:2008 focus on specific principles, system documentation, mandatory system procedures and regulatory requirements, all requirements need to be fully integrated into a process management approach in order to focus to business performance (Table 1). Calisir, Osman, and Dogan (2005) focus on the relevance of ISO 9000 and its benefits such as: integrated vision toward customer satisfaction and business performance.

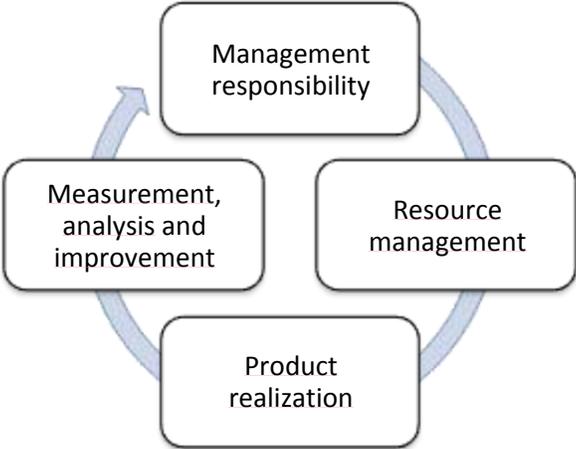
Table 1. Quality system requirements based on ISO 9000:2008 standards.

Quality documents	Mandatory Procedures	Quality Records
4.2.2. Quality manual	4.2.3 Control of documents	5.6.1 Management review
5.3 Quality policy	4.2.4 Control of records	6.2.2.e) Education, training, skills and experience
5.4.1 Quality objectives	8.2.2 Internal audit	7.1.d) Evidence that the realisation processes and resulting product fulfill requirements
	8.3 Control of nonconforming product	7.2.2 Results of the review of requirements related to the product and actions arising from the review
	8.5.2 Corrective action	7.3.2 Design and development inputs relating to product requirements
	8.5.3 Preventive action	7.3.4 Results of design and development reviews and any necessary actions
		7.3.5 Results of design and development verification and any necessary actions
		7.3.6 Results of design and development validation and any necessary actions
		7.3.7 Results of the review of design and development changes and any necessary actions
		7.4.1 Results of supplier evaluations and any necessary actions arising from the evaluations
		7.5.2 d) As required by the organisation to demonstrate the validation of processes where the resulting output cannot be verified by subsequent monitoring or measurement
		7.5.3 The unique identification of the product, where traceability is a requirement
		7.5.4 Customer property that is lost, damaged or otherwise found to be unsuitable for use
		7.6 a) Basis used for calibration or verification of measuring equipment where no international or national measurement standards exist

Quality documents	Mandatory Procedures	Quality Records
		7.6 Validity of the previous measuring results when the measuring equipment is found not to conform to requirements
		7.6 Results of calibration and verification of measuring equipment
		8.2.2 Internal audit results and follow-up actions
		8.2.4 Indication of the person(s) authorising release of product.
		8.3 Nature of the product nonconformities and any subsequent actions taken, including concessions obtained
		8.5.2 e) Results of corrective action
		8.5.3 d) Results of preventive action

Source: Based on international requirements and guidelines of ISO 9000:2008 and its related references: (ISO/TC 176/SC 2/N 544R3, 2008), (ISO/TC 176/SC 2/N 525R2, 2008), and (ISO, 2008).

Figure 1. Quality system fundation.



Source: Based on international requirements and guidelines of ISO 9000:2008 (ISO 9000 / TC176, 2009).

As a summary, ISO 9000 structure requires definition and implementation of three quality documents, six mandatory procedures and twenty one quality records, all of these requirements organised and supported by process approach (Figure 1) driven core quality principles.

1.2. Process approach

As Douglas, Kirk, Brennan, and Ingram (1999) described in their research ISO 9000 can be considered the foundation of a quality system that triggers the quest for higher business performance levels; Golden Pryor, Toombs, Cooke, and Humphreys (2011) and Alonso-Becerra, Michelena-Fernandez, and Robaina (2013) concurs in regards of process approach as the way to align the organisation to key performance indicators.

On one hand ISO 9000 implementation requires process approach. However, there is no written methodology in order to help organisations to select, define and implement process management that is engaged to business performance results (Jurica & Jurova, 2012; Singh and Sharma, 2013); on the other hand Pirnea (2011) suggests the use of balanced score card to align processes to business key process indicators. However, there is not an agreement on process approach methodology that helps organisations to select, define and implement process management approach.

1.3. Business performance driven by key process indicators

Rodriguez-Escobar, Gonzalez-Benito, and Martinez-Lorente (2006) made an empirical analysis about ISO 9000 certified firms and the outcome of this research trigger implies that ISO 9000 certification have high-level of expectations throughout the company. However, when the organisation is not able to achieve ISO 9000 certification through process management based on the proper connections to key performance organisation will influence directly to dissatisfaction on managerial levels; on the other hand there are some empirical evidence that the ISO 9000 success is not only relying on process management definition and deployment. Therefore, quality system success also depends on the maturity level of the organisation, focus on business goals and performance (Popescu & Tifrea, 2011).

Ashrafi and Bashir (2011) made a comparison between ISO 9000 certified versus non certified organisations in order to find the key factor that drives business performance; the result indicates that certified companies have formal ISO 9000 system and structure (as expected) however there were no statistical evidence that business performance has been influenced due to ISO 9000 implementation; On the contrary Singh and Sharma (2013) found a connection between productivity and quality driven taking into account ISO 9000 system as the basement for management. This dialectic remains unsolved and is not getting to a common consensus about the ISO 9000 link to business performance. One underlying

factor to these opposite perspective is that companies that fail to have the appropriate engagement to business key performance indicators are not solid enough about their foundation of process management approach (Bernardo, Casadesus, Karapetrovic, & Heras 2012); This statement is also supported by Lohrmann and Reichert (2013) that emphasises a clear link between goals and process management in order to provide a holistic foundation of quality system.

Methods

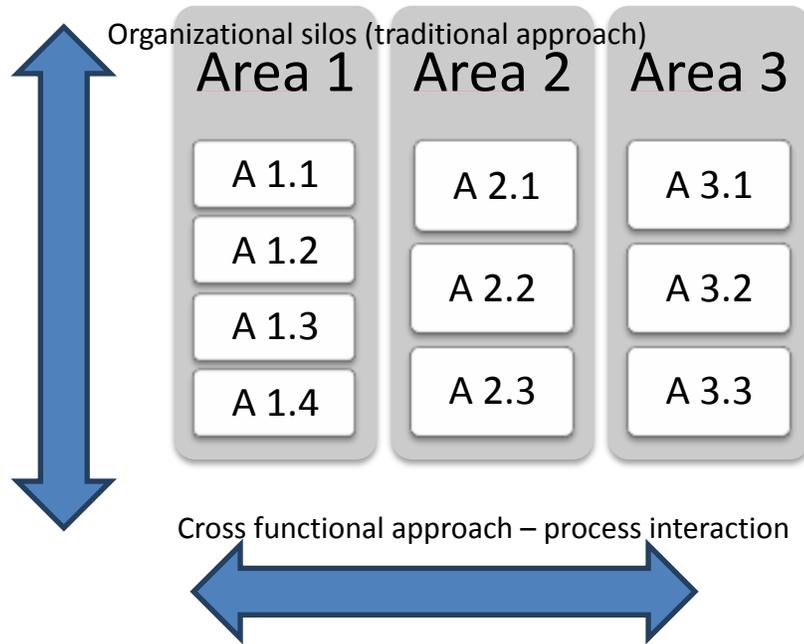
This empirical research uses deductive approach in order to propose a weighted criteria matrix in order to help the organisation to select the appropriate processes for ISO 9000 documentation and deployment that aligns each process to business key performance indicators.

Results

There are three relevant aspects of ISO 9000: 1) Specific documented quality system requirements, 2) ISO 9000 business model driven by process management approach, and 3) Discrepancy between process management approach and its implementation.

One challenge for any organisation is to properly select the key process in with the top management will base their business performance; Such processes should be aligned to the core of the business and truly relevant to the key process indicators. In Figure 2, we will notice the difference between traditional organisational silos versus process approach. Process approach emphasises the effectiveness and efficiency of all related activities driven and linked to particular key process indicators; process approach does not seek the effectiveness of a particular department or activity, instead process approach can be used as a support tool for business performance driven by results.

Figure 2. Traditional organisational silos versus process approach.



Source: Made based on proposed models by Beltran Sanz, Carmona Calvo, Carrasco Pérez, Rivas Zapata, and Panchon (2012).

Table 2 illustrates the way in which you can list all the organic functions of the company to be able to cross-reference items and relevant to the quality system and key performance factors of the organisation. The list can be displayed from top to bottom in the first instance being those processes that actually have high impact to the elements of organisational performance.

Table 2. Quality system requirements based on ISO 9000:2008 standards.

Function	Relevance to the core of the business	Relevance to business performance key process indicators	Critical to support quality system	Total weighted sum
Manufacturing	3	3	3	9
Engineering	3	2	3	8
Continuous	2	3	3	8

Function	Relevance to the core of the business	Relevance to business performance key process indicators	Critical to support quality system	Total weighted sum
improvement				
Process engineering	2	3	3	8
Procurement	1	3	2	6
Human resources	2	2	1	5
Maintenance	1	2	1	4
Environmental, health and safety	1	2	1	4
Marketing	1	1	1	3

Source: Self-development using weighted code: 3-Most relevant. 2-Moderate relevance. 1-Less relevant.

Discussion

According to the literature review we have found some theoretical convergences in regards ISO 9000 and process management approach. However, the method of selecting the key processes has not been clearly identified - this is ISO 9000 number one discrepancy in regards of its application -; Another relevant factor is that the appropriate identification of those key processes to drive business performance, such processes may fall into the following categories: management support processes, customer oriented processes or support processes, the main difference between such processes relies on the correspondence to business process performance - this is ISO 9000 number two discrepancy-; There are theories that supports that ISO 9000 provide the foundation of a quality system and maximised business performance focus on process oriented approach when these processes are linked to key performance indicators. However, there are some other researchers that found that one of the common lessons learned in ISO 9000 implementation journey is the proper alignment between process and performance management otherwise the outcome of ISO 9000 will be dissatisfaction and low driven results.

This empirical research presents a model that the organisation can list all of their different areas/departments in order to weight their roles and functions toward three elements: relevance to core business, quality system and key performance indicators; Once the organisation has made the

categorisation and top down sorting final numbers, then we will be able to identify the most relevant processes for the company - primarily customer oriented processes, others may fall into another process category such like support processes, management process and others are specific activities not processes.

References

- Ashrafi, R. & Bashir, H.A. (2011). Implementation of quality management in organizations operating in the Sultanate of Oman: ISO 9001:2000 vs. non-ISO 9001:2000 certified organizations. *International Journal of Productivity and Quality Management*, 7 (1), 183–201.
- Alonso-Becerra, A.S., Michelena-Fernández, E.S. & Robaina, D.A. (2013). Dirección por procesos en la Universidad. *Ingeniería Industrial*, 34 (1), 87-95.
- Beltran Sanz, J., Carmona Calvo, M.A., Carrasco Pérez, R., Rivas Zapata, M.A. & Tejedor Panchon, F. (2012). Guía para una gestión basada en procesos. Recuperado de http://portaldocomerciante.xunta.es/miredic/userfiles/Biblioteca/13390ad6f0273cafa4dbguia_gestionproceos.pdf
- Bernardo, M.C., Casadesus, M., Karapetrovic, S. & Heras, I. (2012). Do integration difficulties influence management system integration levels? *Journal of Cleaner Production*, 21 (1), 23-33.
- Calisir, F., Osman, K. & Dogan, I. (2005). Factors influencing Turkish textile companies' satisfaction with ISO 9000. *Total Quality Management & Business Excellence*, 16 (10), 1193–1204.
- Douglas, A.K., Kirk, D., Brennan, C. & Ingram, A. (1999). Maximizing the benefits of ISO 9000 implementation. *Total Quality Management & Business Excellence*, 4 (5), 507–513.
- Golden Pryor, M., Toombs, L.A., Cooke, J., & Humphreys, A.H. (2011). Strategic quality management: the role of process ownership, management and improvement. *International Journal of Business Excellence*, 4 (4), 420–439.
- ISO 9000/TC176. (2009). *Selection and use of the ISO 9000 family of standards*. Retrived from http://www.iso.org/iso/iso_9000_selection_and_use-2009.pdf
- ISO/TC 176/SC 2/N 525R2. (2008). *ISO 9000 introduction and support package: Guidance on the documentation requirements of ISO 9001:2008*. Geneva: ISO 9000.
- ISO/TC 176/SC 2/N 544R3. (2008). *544R3: ISO 9000 introduction and support package: Guidance on the concept and use of the process approach for management systems*. Geneva: ISO 2008.
- Jurica, P.J. & Jurová, M. (2012). Methodology for assessing the level of process management. *Economics and Management*, 20 (2), 30–36.
- Kumar, S.I. & Ahuja, I.S. (2012). ISO 9000 quality management system: Literature review and directions. *International Journal of Technology, Policy and Management*, 12 (4), 312–343.

- Lohrmann, M. & Reichert, M. (2012). Understanding business process quality. En M. Glykas (Ed.), *Business process management: Theory and applications* (pp. 41–73). Berlin: Springer.
- Pirnea, I.C. (2011). Considerations on the use of balanced scorecard as a basis for implementing performance management: Concepts and techniques. *Quality - Access to Success*, 12 (125).
- Popescu, S.T. & Tifrea, D.I. (2011). Quality management systems' maturity, a measure of the ISO 9001 implementation process. *Quality - Access to Success*, 12 (12-44).
- Rodríguez-Escobar, J.A, Gonzalez-Benito, J. & Martínez-Lorente, A.R. (2006). An analysis of the degree of small companies' dissatisfaction with ISO 9000 certification. *Total Quality Management & Business Excellence*, 17 (4), 507–521.
- Singh, H.S. & Sharma, H. (2013). Improvement in quality and productivity through ISO 9001. *Indian Streams Research Journal*, 3 (1), 1–4.