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Overview of the new ISO 9001:2015 standard and challenges ahead

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Abstract

Many South African organizations including those in tourism and hospitality sectors are aware about the launching of the revised ISO 9001:2015 and are concerned as to how the changes will affect them. Some of the reasons for these changes are due to the changing quality systems and technology, a more dynamic business environment, decrease emphasis on documented procedures, move to a culture of risk management, cater for the service industries, promote integration with other standards and ultimately increase value for the organization.Articles in various editions of Quality Progress have indicated that the revised standard will have ten major sections, seven principles of quality, simpler terminology, a more generic format to allow the alignment with other standards and attractive to service centered organizations. The implementation of the standard will include such processes as for risk management, change management, information management, innovation management and strategy management hence moving the quality management system towards a business management system. Although the standard may appear to allow more flexibility inits implementation there will be many managerial and implementation challenges for organizations and their quality practitioners. There is a sense that the standard is moving away from management responsibility to leadership accountability. This article provides an overview of the new standard and provides information on some of the challenges that may be faced.

Keywords: Quality standards, Quality, ISO 9001, ISO revisions, ISO 9001:2015 challenges

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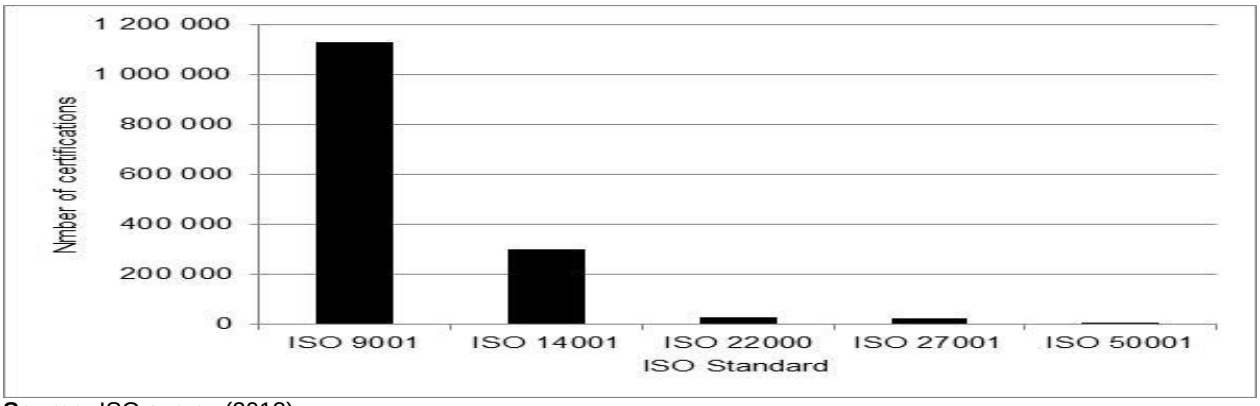
Introduction

ISO is the International Organization for Standardization, headquartered in Geneva, Switzerland and is a worldwide federation of national standards organizations from157 countries. It has published more than 19,000 International Standards. The ISO 9001 is a standard for the management of quality and as shown in figure 1 is the most popular product of this organization. According to Combs (2013) ISO 9001 is much more than a quality management standard and implementing it is one of the quickest ways an organization can become excellent insatisfying and delighting its customers. Given that it was originally drawn up for the manufacturing and industrial sectors, ISO 9001 has been a victim of its own success, and many organizations from other areas have made it their own. Many organizations worldwide including those operating in the hospitality and tourism sectors such as those in the Hilton Worldwide group and Club Dem Spa and Resort (Turkey) have accordingly implemented this system. According to Sanders (2014) the revised standard has many significant definitional shifts, additions and deletions which means, that the upgraded standard will pose various challenges when the new version of the standard ISO 9001:2015 comes into effect.

Figure 1: Number of ISO certifications worldwide in 2013



Source: ISO survey (2013)

Source: Data from ISO survey (2013)

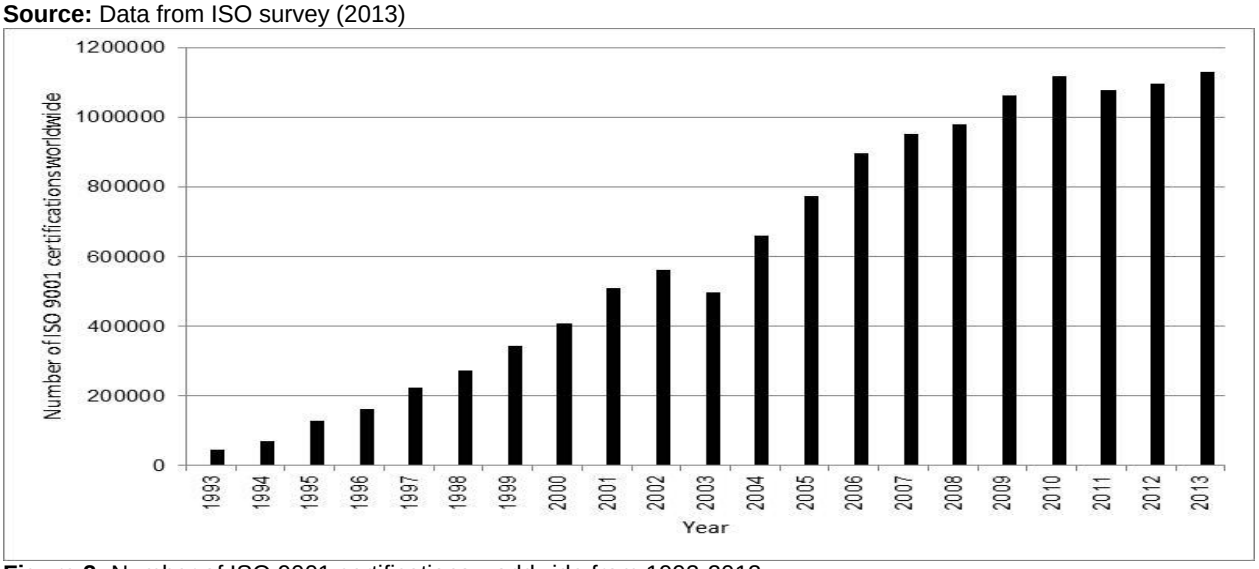


Figure 2: Number of ISO 9001 certifications worldwide from 1993-2013

According to the International Organization for Standardization (ISO), the revised ISO 9001:2015 standard, unlike its previous versions is a major revision since the consolidation of ISO 9001:1994, ISO 9002:1994 and ISO 9003:1994 into the ISO 9001:2000 version (ISO 2015). ISO 9001 refers to the quality management system requirements (current version was revised in 2008). ISO 9002 was a standard that guided the work related to quality assurance in production, installation and servicing. ISO 9003 was a standard for a model for quality assurance in final inspection and tests which covered only the final inspection of finished products.

The development, publishing and administration of ISO standards is maintained by ISO. This body is a worldwide federation of national standards bodies throughout the world. The national standards bodies of various countries are considered as ISO member bodies and play an important role in the revision of current standards or development of new standards. According to Reid (2015) revisions follow a very rigid consultative process of drafting, circulating for comment, revising, and voting with a sequential series of resulting documents; working draft (WD), a committee draft (CD), a draft international standard (DIS), a final draft international standard (FDIS, which is now optional) and the final published version (IS).Each national body has its own local committees to provide input into the standard. For any ISO standard to be published it will require approval from at least 75% of its members. One of the tasks of ISO is to approve and release the new ISO 9001:2015 standard by September 2015. Presently a draft International standard (ISO/DIS 9001) is published.

All ISO standards are revised every 5 years to keep them current and relevant (Palmes 2014). ISO 9001 standard was first published in 1987. Since then revised standards are published every 6 to 8 years to maintain relevancy, promote integration with other standards, increase adoption and applicability in other business sectors such as service sectors, office environments and education sectors. Although ISO standards are voluntary, the ISO 9001 has become a market requirement for business success hence making it compulsory for the implementation of the changes to retain relevance and certification. Reid (2014) lists the following reasons that were forwarded from the ISO technical team for the need to review the 2008 version:

- To incorporate the changes in quality management system practices and technology. Examples offered by (Oddy, 2014) include bar-coding systems for customer property control, more comprehensive integrated quality management system (QMS) software and digital quality manuals, procedures, and forms.
- To provide for a stable core of requirements for the next ten years
- To accommodate for increasingly complex, demanding and dynamic business environment. This is due to organizations operating in increasingly complex and dynamic working environment caused by increasing cultural diversity of the workforce, increasing customer demands for faster, cheaper, and better, increasing focus on environmental and safety requirements, and the growth of leaner environments within which managers operate in multifunctional roles (Oddy, 2014).
- To ensure effective implementation and assessment
- To ensure that organizations remain confident using the standard
- To decrease the emphasis on documented procedures
- To increase the value for organizations
- To move to a culture of risk management
- To provide greater applicability to especially service orientated organizations such as healthcare, hospitality, tourism, banking, education, and consulting sectors.

- To promote the integration of other management system standards

The challenges discussed in this article are based on the draft international standard (ISO/DIS 9001) which will may have some changes before approval and subsequently replace the current ISO 9001:2008 version.However irrespective of any more changes, the discussion presented here remains valid for the integration of quality into the business arena.

Methodology

The methodology used for this paper considered the analyses of some related literature. This literature included various articles and commentaries published since 2013 on the development and progress on new version of ISO 9001.

History of ISO 9001

The history of ISO 9001 has been synthesized from the websites of The British Assessment Bureau Newsletter and J.R. Consultants based in the United Kingdom.

Quality assurance was created in the defense industry based on the requirements for procedures on product manufacture, inspection and ensuring complianceto procedures especially in factories that developed explosive devices.This concept spread rapidly beyond the military and in 1966 the United Kingdom (UK) Government recognized a need for a generic standard for quality assurance to avoid and limit the duplication of effort in the quality assurance processes between suppliers and customers. This led to publishing of the first UK standard for quality assurance (BS 9000) by the British Standards Institute (BSI) in 1971. This was developed primarily for the electronics industry and a more generic standard, Guidelines for Quality Assurance (BS 5179) was published in 1974. This changed the process of quality assurance from the customer to the supplier. With refinement of the standard over many years, the BS 5750 standard was published in 1979 providing a common contractual document for quality assurance in production. The BS 5750 standard formed the foundation for ISO standards.

The first ISO 9001 standard was formally introduced in 1987 and to date has been revised many times as discussed below.

ISO 9001:1987

This had the same structure as BS 5750. It had twenty elements, had a military tone of conformity with procedures and was deemed most suitable for the manufacturing sector. This standard also offered with three 'models' for quality management systems with a choice based on the scope of activities of the organization.ISO 9001 for organizations with design and manufacturing capability, ISO 9002 for organizations with manufacturing capability ISO 9003 for distributors. According to Reid (2015) the scope of the QMS was always expected to include the entire organization—not constituent functions or departments.

ISO 9001:1994

The thrust of the revision was to shift quality management from a “cure” perspective to a “preventative” perspective. Hence, this standard expressed quality assurance via quality preventative activities and maintained the requirements of compliance with documented procedures. The intention was to shift the focus of the standard to quality management systems that checked and monitored the product at every stage in the process, rather than just evaluating the finished product. Hence many organizations became engrossed with documented procedures and elaborate facilities for the storage of evidence such as records and samples to demonstrate compliance.

ISO 9001:2000

This version introduced the concept of process management as the driver of the standard and explained that the standard encouraged a “documented system” and not a “system of documents”. It aimed at

making quality control as an integrated goal of the organization. It also viewed quality as customer driven and developed a set of eight core quality management principles which were, (1) Improved consistency with traceability, (2) Enhanced customer focus (3) Focused leadership (4) The involvement of people (5) A system approach to management (6) Continual improvement (7) A factual approach to decision making and (8) Mutually beneficial supplier relationships. This standard could be adopted by service and educational organizations. According to Reid (2015) customers needed to obtain a copy of the certified organization's certificate to see what was included in the certified QMS scope (for example, design and manufacturing, or just manufacturing) due to the concept of voluntary permissible exclusions of functions been allowed for the issue of one ISO 9001 certificate.

ISO 9001:2008

This version had very minor revisions which was aimed at providing a better understanding of the requirements and to maintain consistency with other standards such as ISO 14001:2004 (Requirements for environmental management) to promote integration.

The ISO 9001:2015 standard

According to the International Accreditation Forum (2015) the main changes include risk-based thinking, fewer prescribed requirements, less emphasis on documents, improved applicability for services, increased emphasis on organizational context, increased leadership requirements and greater emphasis on achieving desired outcomes to improve customer satisfaction.According to Hampton (2014) the new ISO 9001 standard strengthens the requirements for implied processes such as mistake-proofing, change management and risk management which were seen as implied in the previous versions.

Sanders (2013) indicates that the new standard goes beyond a quality management system to a business management system whilst Reid (2014) summarises the changes as opportunities to implement the standard more effectively and to add value to the organization rather than just to implement because customers require it.In addition the new version appears to be more generic appealing to nonmanufacturing sectors (Reid 2014) which will appeal to the services industries (Palmes, 2014). Oddy (2013) indicates that ISO 9001:2015 will be a major force for improvement and process excellence within organizations, will be generic and stable for the next ten years, use more understandable terminology, include a risk-based sensitivity and offers organizations greater flexibility for the need for businesses to integrate their QMS into the overall business strategy. This was discussed by Hampton (2014) as well as eluding to the new standard bringing a positive change to management systems as well as the standard requires the organization to determine its strategic direction. The culture of the new standard is to promote "business thinking" and not "quality conformance thinking" separate from business management (Palmes, 2014). The new version caters for certification to ISO 9001:2015 forfunctions within an organization (Reid, 2015), for example the engineering function can obtain its own certification apart from the manufacturingorganization in which it resides. This will now require customers to obtain many certificates from an organization to determine which functions are covered by a by third-party certification and its suitability for their confidence in doing business with the organization.

The structure of the new standard follows a new format called the high "level structure". This structure reflects a strategic choice that will gradually be applied to all ISO standards of management system. In so doing ISO aims to help businesses and organizations to more easily integrate all or parts of their various management systems and ultimately achieve a truly unified

management system which is ideal for the hospitality and tourism industries as such. According to (Palmes, 2014) the following structural changes have been adopted in the new standard;

- The clause structure and some of the terminology have been changed to improve alignment with other management system standardssuch as ISO 14001.
- The consequent changes the structure does not need to be reflected in the documentation of the quality management system,
- The structure of the clauses will provide a coherent presentation of requirements adopted in a model for documenting policies, objectives and processes and
- There is no requirement for organizations quality management system to mirror that of the new international standard. Organizations have the flexibility to choose their own structure of their QMS so long as the applicable clauses of the standard are included.

The new standard will have ten sections compared to eight in the 2008 version. The new version has no normative references. This section is added to maintain the consistency of the numbering system aligned to other standards. The terms and definitions are explained using the ISO DIS 9000:2014, ISO 1008:2012 (Quality management -- Guidelines on people involvement and competence) and ISO 1087-1:2000 (Terminology work -- Vocabulary -- Part 1: Theory and application) standards.

Some sections of the document has been reconfigured. The section changes shown in table 1 include “general requirements” to “context of the organization”, “management responsibility” to “leadership”, “resource management” to “planning”, “product realization” to “support”, “measurement, analysis and improvement” to “operation”, and two additional sections “performance evaluation” and “improvement” are added.

Table 1: Proposed Section Changes in ISO 9001:2015

Section Number	ISO 9001:2008 (published)	ISO 9001:2015 (Draft)
1	Scope	Scope
2	Normative Reference	Normative References
3	Terms and Definitions	Terms and Definitions
4	General Requirements	Context of the Organization**[changed]**
5	Management Responsibility	Leadership**[changed]**
6	Resource Management	Planning**[changed]**
7	Product Realization	Support**[changed]**
8	Measurement, Analysis and Improvement	Operation**[changed]**
9	-	Performance Evaluation**[new]**
10	-	Improvement**[new]**

Source: Author’s own

A more detailedmatrix is shown in Table 2. showing the differences between the ISO 9001:2008 and ISO 9001:2015 standards.

Table 2: Proposed Section Changes in ISO 9001:2015

Clause ISO 9001:2008	Clause ISO 9001:2015 DIS	Section in ISO 9001:2015	Remarks
0. Introduction	0. Introduction	0. Introduction	
1.1 General	1. Scope	1. Scope	Included in the scope
1.2 Application	4.3 Determining the scope of the quality management system	4. Context of the organization	
2. Normative references	-	2. Normative references	There is no normative reference in the DIS. This has been removed to maintain consistent clause numbering with other standards.
3. Terms and definitions	Various definitions and explanations	3. Terms and definitions	Reference to ISO DIS 9000:2014, ISO 10008:2012, ISO 1087-1:2000 standards.
4. Quality Management System	-	4. Context of the organization	
4.1 General Requirements	4.4 Quality management system and its processes	4. Context of the organization	
4.2 Documentation Requirements	7.5 Documented information	7. Support	Reduced requirements for documentation
4.2.1 General	7.5.1 General	7. Support	
4.2.2 Quality Manual	-		Quality Manual not required
4.2.3 Control of Documents	7.5 Documented Information	7. Support	Records and Documents are now required as documented information
4.2.4 Control of Records	7.5 Documented Information	7. Support	Records and Documents are required as documented information
5. Management Responsibility		5. Leadership	Management responsibility is changed to leadership
5.1 Management Commitment	5.1.1 Leadership and commitment for the quality management system	5. Leadership	
5.2 Customer Focus	5.1.2 Customer focus	5. Leadership	
5.3 Quality Policy	5.2 Quality policy	5. Leadership	
5.4 Planning		6. Planning for the quality management system	Planning changed to planning for the quality management system
5.4.1 Quality Objectives	6.2 Quality objectives and planning to achieve them	6. Planning for the quality management system	
5.4.2 Quality Management System Planning	6.3 Planning of change	6. Planning for the quality management system	
5.5 Responsibility, Authority, and Communication	5.3 Organizational roles, responsibilities and authorities	5. Leadership	
5.5.1 Responsibility and Authority	5.3 Organizational roles, responsibilities and	5. Leadership	

Table 2: Proposed Section Changes in ISO 9001:2015

Clause ISO 9001:2008	Clause ISO 9001:2015 DIS	Section in ISO 9001:2015	Remarks
	authorities		
5.5.2 Management Representative	-	-	Management representative not required
5.5.3 Internal Communications	7.4 Communication	7. Support	
5.6 Management Review	9.3 Management Review	9. Performance Evaluation	
5.6.1 General	9.3.1 Management Review	9. Performance Evaluation	
5.6.2 Review Input	9.3.1 Management Review	9. Performance Evaluation	
5.6.3 Review Output	9.3.2 Management Review	9. Performance Evaluation	
6. Resource Management	-	7. Support	
5.6.1 General	9.3.1 Management Review	9. Performance Evaluation	
5.6.2 Review Input	9.3.1 Management Review	9. Performance Evaluation	
5.6.3 Review Output	9.3.2 Management Review	9. Performance Evaluation	
6. Resource Management	7.1 Resources	7. Support	
6.1 Provision of Resources	7.1 Resources	7. Support	
6.2 Human Resources	7.1.2 People	7. Support	
6.2.1 General	7.2 Competence	7. Support	
6.2.2 Competence, Training, and Awareness	7.2 Competence 7.3 Awareness	7. Support	
6.3 Infrastructure	7.1.4 Infrastructure	7. Support	
6.4 Work Environment	7.1.5 Environment for the operation of processes	7. Support	
7. Product Realization	-	8. Operation	
7.1 Planning of Product Realization	8.1 Operational planning and control	8. Operation	
7.2 Customer-Related Processes	8.2 Determination of requirements for products and services	8. Operation	
7.2.1 Determination of Requirements Related to the Product	8.2.2 Determination of requirements related to products and services	8. Operation	
7.2.2 Review of Requirements Related to the Product	8.2.3 Review of requirements related to products and services	8. Operation	
7.2.3 Customer Communication	8.2.1 Customer communication	8. Operation	
7.3 Design and Development	8.3 Design and development of products and services	8. Operation	
7.3.1 Design and Development Planning	8.3.2 Design and development planning	8. Operation	
7.3.2 Design and Development Inputs	8.3.3 Design and development inputs	8. Operation	
7.3.3 Design and Development Outputs	8.3.5 Design and development outputs	8. Operation	
7.3.4 Design and Development Review	8.3.4 Design and development controls	8. Operation	
7.3.5 Design and Development Verification	8.3.4 Design and development controls	8. Operation	
7.3.6 Design and	8.3.4 Design and	8. Operation	

Table 2: Proposed Section Changes in ISO 9001:2015

Clause ISO 9001:2008	Clause ISO 9001:2015 DIS	Section in ISO 9001:2015	Remarks
Development Validation	development controls		
7.3.7 Control of Design and Development Changes	8.3.6 Design and development changes	8. Operation	
7.4 Purchasing	8.4 Control of externally provided products and services	8. Operation	
7.4.1 Purchasing Process	8.4.1 General	8. Operation	
7.4.2 Purchasing Information	8.4.3 Information for external providers	8. Operation	
7.4.3 Verification of Purchased Product	8.4.2 Type and extent of control of external provision and 8.6 Release of products and services	8. Operation	
7.5 Production and Service Provision	8.5 Production and service provision	8. Operation	
7.5.1 Control of Production and Service Provision	8.5.1 Control of production and service provision	8. Operation	
7.5.2 Validation of Processes for Production and Service Provision	8.5.1 Control of production and service provision	8. Operation	
7.5.3 Identification and Traceability	8.5.2 Identification and traceability	8. Operation	
7.5.4 Customer Property	8.5.3 Property belonging to customers or external providers	8. Operation	
7.5.5 Preservation of Product	8.5.4 Preservation	8. Operation	
7.6 Control of Monitoring and Measuring Equipment	7.1.6 Monitoring and measuring resources	7. Support	
8. Measurement, Analysis, and Improvement	9.1 Monitoring, measurement, analysis and evaluation	9. Performance Evaluation	
8.1 General	9.1.1 General	9. Performance Evaluation	
8.2 Monitoring and Measurement	9.1.1 General	9. Performance Evaluation	
8.2.1 Customer Satisfaction	9.1.2 Customer satisfaction	9. Performance Evaluation	
8.2.2 Internal Audit	9.2 Internal Audit	9. Performance Evaluation	
8.2.3 Monitoring and Measurement of Processes	9.1.3 Analysis and evaluation	9. Performance Evaluation	
8.2.4 Monitoring and Measurement of Product	8.6 Release of products and services	8. Operation	
8.3 Control of Nonconforming Product	8.7 Control of nonconforming process outputs, products and services	8. Operation	
8.4 Analysis of Data	9.1.3 Analysis and evaluation	9. Performance Evaluation	
8.5 Improvement	-	10. Improvement	
8.5.1 Continual Improvement	10.3 Continual Improvement	10. Improvement	
8.5.2 Corrective Action	10.2 Nonconformity and corrective action	10. Improvement	
8.5.3 Preventive Action	6.1 Actions to address risks and opportunities	PA is being replaced with risk based thinking	8.5.3 Preventive Action is replaced

Source: Quality Handbook (2015)

Quality Principles

The principal "System approach to management" has been removed because it is obvious and inherent in the standard, hence the new standard will have seven quality principles. However the requirement for each principle has been expanded as shown in table 3.

Table 3: Proposed Section Changes in ISO 9001:2015

ISO 9001:2008	ISO 9001:2015 (ISO/DIS 9001:2014(E)	Aspects in ISO 9001:2015
Customer focus	**Customer focus**	Includes interested parties as customers
Leadership	**Leadership**	Includes strategies, processes and resources to achieve objectives
Involvement of people	**Engagement of people**	Emphasis on competent, empowered and engaged people
Process approach	**Process approach**	Includes interrelated processes as part of the system
System approach to management	_	This is excluded as seems obvious for a management system
Continual improvement	**Improvement**	Focusses on internal and external conditions and new opportunities
Factual approach to decision making	**Evidence based decision**	Focusses on evaluation of data and information for decision making and consequences
Mutually beneficial supplier relationships	**Relationship management**	Considers relationships with all interested parties

Source: Author's own

Terminology

The following are some of the significant terms that are redefined in the ISO DIS 9001:

- Organization refers to sole trader, company, corporation, firm enterprise, compliance authority, partnership, association, charity institution inclusive of any private or public entities.
- Interested parties refers to customers, owners, people in the organization, suppliers, unions, infact all stakeholders that impact on the organization.
- Competence is ability to apply the knowledge and skills to attain the intended results.
- Documented information can be in any format and media and from any source.
- Performance can relate to quantitative and qualitative finding.
- Context of the organization refers to internal and external factors and conditions that can impact on the business.
- Infrastructure refers to a system of facilities, equipment and services needed for the operations of the organization.
- Strategy is the planned actives to achieve the objectives.
- The words "procedure" and "record" are replaced with the term "documented information" to provide more flexibility in the QMS documentation needed.
- "Products" is changed to "Products and services"
- "Continual improvement" is changed to "improvement"

New clauses

The section context of the organization includes two new clauses "understanding the organization and its context" and "understanding the needs and expectations of interested parties" (Hampton, 2014). This will require organizations to determine issues related to the context of the

organization to include into the planning of the quality management system.

The section quality management system and processes now lists the set of requirements for a process. These requirements include defining the inputs and outputs, interaction with other processes, performance indicators of the process, resources to the process, responsibilities to manage the process, identification of the risks and opportunities and to be managed as visiting to the process and identification of activities related to the process (Hampton, 2014).

- The word “preventative is now replaced with “risk. The words “continual improvement” is now replaced with improvement.
- “Leadership” is now shown as a clause on its own and requires top management to demonstrate accountability, leadership and commitment with respect to the quality management system (Hampton, 2014).
- The clause “support” shows that infrastructure, business environment, monitoring and measuring devices, knowledge needs must be determined, provided and maintained.
- The clause “operation” describes customer requirements as determination of market needs and interaction with customers. Purchasing requirements has been replaced with control of external provision of goods and services.
- Monitoring measurement and analyses in now incorporated into the clause “performance evaluation”

Challenges for organizations

The following challenges are highlighted for organizations to address in preparation for the changes:

Time lines
Time lines are normally set by the respective certification body. However according to the international accreditation forum (2015), shows that an organization has to renew certification to the new standard within the transition period of three years after the issue of the new standard. Inother words the certification to ISO 9001:2008 will not be valid after three years after the release of ISO 9001:2015. The challenges that can face organizations in the hospitality and tourism sector is to consult with the various certification bodies when renewing their current certifications, for example for ISO 22000, ISO 14000, etc.

Cost
It is viewed that there will be additional costs for training and competency evaluations of employees as well as for documentation changes, information systems and knowledge systems.

Context of the organization
This clause will force organizations to move away from an inward-focusing approach to one where the impact of external factors on the QMS have to be monitored and managed. Examples of such factors include changes in the economy, government policies and legislation, industry changes, competitor behavior and generally those that impact on risk management.

Changes
According to Whittington and Associates (2015) managing all changes such as those planned, unplanned or unintended are required to be managed via the QMS. A “planned” change is based on a deliberate decision to make a needed change, an “unplanned” change is an immediate change that must be made due to an unforeseen situation and an “unintended” change is the unexpected outcome resulting from a change. The challenge will be for organizations to categorize the changes and implements respective change models.

Exclusions
The problematic issue of “exclusions” from the last revision is replaced with text indicating that where a requirement in the standard can be applied, it must be applied. There could be some difference of interpretation regarding what this means.

The challenge in this aspect is for organizations to identity any exclusions and to provide evidence that these exclusions have been considered and reasons as to why they have opted not to address them (Reid 2015).

Customer focus

Customer focus includes internal and external customers as well as interested parties. The DIS defines this term as a "person or organization that can affect, or be affected by, or perceive themselves to be affected by a decision or activity." Examples of interested parties can refer to unions, lobby groups, communities, government agencies, society and even competitors. Organizations have to spend some time of identifying all interested parties and how relevant they are for the quality management systems. It could be a challenge to include unions as part of customer focus.

Leadership

This includes "leaders at all levels" who "create conditions in which people are engaged". This does not appear to refer to top management only. Organizations have to consider who are the leaders at different levels such as the senior managers, middle managers, junior managers, union leaders, community leaders, etc. and how their leadership impacts on the quality management system.A formal management representative who had the task of overseeing the QMS in terms of the effectiveness is no longer prescribed. The leadership have to engage on how the effectiveness of the system will be managed in future. There has to some thought on structures that will monitor the effectiveness of the system, for example in the hotel environment will it be the chief executive office, the respective general manger or a committee of members. Some challenges in the hotel sector will include developing the quality policy with strategic goals of the hotel chain, the QMS integrating with the business processes and due consideration of developing one integrated manual for all audits and hotel certifications(for risk audits and hotel grading certifications).

Planning

The set of objectives must be supported with plans to implement them. Current thinking is that planning the QMS up front is the best preventive action. Plans must list who is going to do what and at what time in the project or process, the required resources, how progress will be measured along the way and the identification and mitigation of risks (Reid 2014 nov). The challenge will be for organizations for spend a considerable amount of time on the planning side.

Engagement of people

This requires people to be competent, empowered and engaged. Organizations will have to describe jobs beyond just a job description. It will require job specifications, competency criteria and methods of evaluation, competency records. The new standard will require documented information as the evidence of competence. Labor cost issues is one of the challenges experienced in the hospitality sector (Wang and Wang, 2009). Organizations in this sector will have to draw find balance between cost controls, guest satisfaction and the quality management system. It must be noted that people are the most important and integral part of the guest experience.

Risk Management

Risk based thinking is one of the approaches required in the new standard.Quality results from proper management of these risks, which go beyond the strict scope of the product or service deliveredManaging risk also means working towards continuous improvement. Corrective action corresponds to an unidentified, wrongly qualified or mismanaged risk; preventive action addresses a risk of possible but un-occurred noncomplianceRisk has its counterpart: opportunity. The ISO9001:2015 standard

also embraces this concept of positive uncertainty. This approach will require organizations understand internal and external issues and define and address its risks and opportunities (Lieberman, 2014).An organization will have to analyze organizational risk, strategic risk, compliance risk and operational risk. Operational risk will comprise of management systems risk, customer satisfaction risk, supply chain risk, revenue risks, security risks, logistics risks and natural disaster risks. This will require knowledge of how to recognize the risks, analyze them and manage them. Lamprecht (2013) also comments that some "requirements of risk" are difficult to implement as the references to risks are vaguely stated, open to a myriad of interpretations and seemingly driving higher process capabilities and unintended outputs, leading to a sharper focus on change management and knowledge management. A recommendation will be for organizations to consider the parallel implementation of ISO 31000 (risk management standard) with the new standard.

Innovation

Merril (2014) advises that the organizations can now implement agile quality management systems that can promote innovation. Organizations should look for opportunities for innovation in activities when examining external changes, improving processes, developing or reviewing strategy, when planning, when recruiting people, when determining customer requirements, when addressing complaints, when conducting management reviews and sourcing suppliers. The challenge will be for the leadership to set the culture of innovation within the organization. West and Cianfrani (2015) emphasize that organizations should adapt a formal process to foster innovation within the QMS.

Information management

The new standard does not require "documented procedures" and "records" but requires "documented information". The purpose of the standard is to take account of technological and societal changes. Information is no longer created, organized, managed, maintained, disseminated and accessed as it was 20 years ago when paper was the primary medium.This change also allows for greater flexibility in companies' organization. It is now possible to comply with the standard without jeopardizing managerial agility, as long as the fundamental principles are respected Dunmire (2014) indicates that implementing an information management system to incorporate electronic data with automated computer systems, and recognizing what should be documented and recorded, what should not and at the same time meeting auditing requirements will pose a big challenge for organizations. There will no longer be a need for a formal documented "Quality Management System" (Merril, 2014) but the challenge will be for organizations to find an effective methodologyof an effective documentation management system.A quality manual still can remain as one possibility for fulfilling this requirement for information management. The general 21 documents required are shown in table4.

Table 4: Documented requirements for ISO 9001:2015

Clause	documented requirements	Clause	documented requirements
4.3	Scope	8.5.1	Evidence of application of the development processes, the output of the suitability.
5.2	Policy	8.6.1.a	Information that describes the chracteristics of goods and services.
6.2	Quality objectives	8.6.1 c	Information that describes activities to be performed and the results achieved , and traceability requirements.
7.1.4	Evidence of fitness for use of monitoring and measuring devices	8.6.6	Results of the review of changes, personnel authorising the changes and any necessary actions.
7.2	Evidence of competence	8.7	Persons authorising the release of goods and services for delivery to the customer
8.1	Documented information to the extent necessary to have confidence the processes and carried out as planned	8.8	Nature of nonconformities and any subsequent actions concessions obtained.
8.2.3	Evidence of the review of requirements of goods and services prior to the supplier.	9.1.1	Evidence of monitoring and measuring has been carried out in a manner that is consistent with monitoring and measurement requirements.
8.2.3	When amendments are made evidence of the personnel made aware of the changed requirements.	9.2	Evidence of the implementation of the audit program and audit results
8.4.2	Results of the evaluation of external providers	9.3	Evidence the results of the management reviews
8.4.2	Documented information to be provided external providers	10.1	Evidence of the nature of nonconformities and actions taken and results of action.
8.4.3	Documented information describing the results of monitoring for external providers		

Source: Adapted from Hampton (2014)

A QMS structure for ISO 9001:2015 is shown in figure 3, which assists to show the flow of information, decisions and documentationflow.Dunmire (2014) indicates that organizations may have flexibility in terms of digital systems but the challenge will be to address related concerns such as data validation, data integrity, confidentiality and information availability

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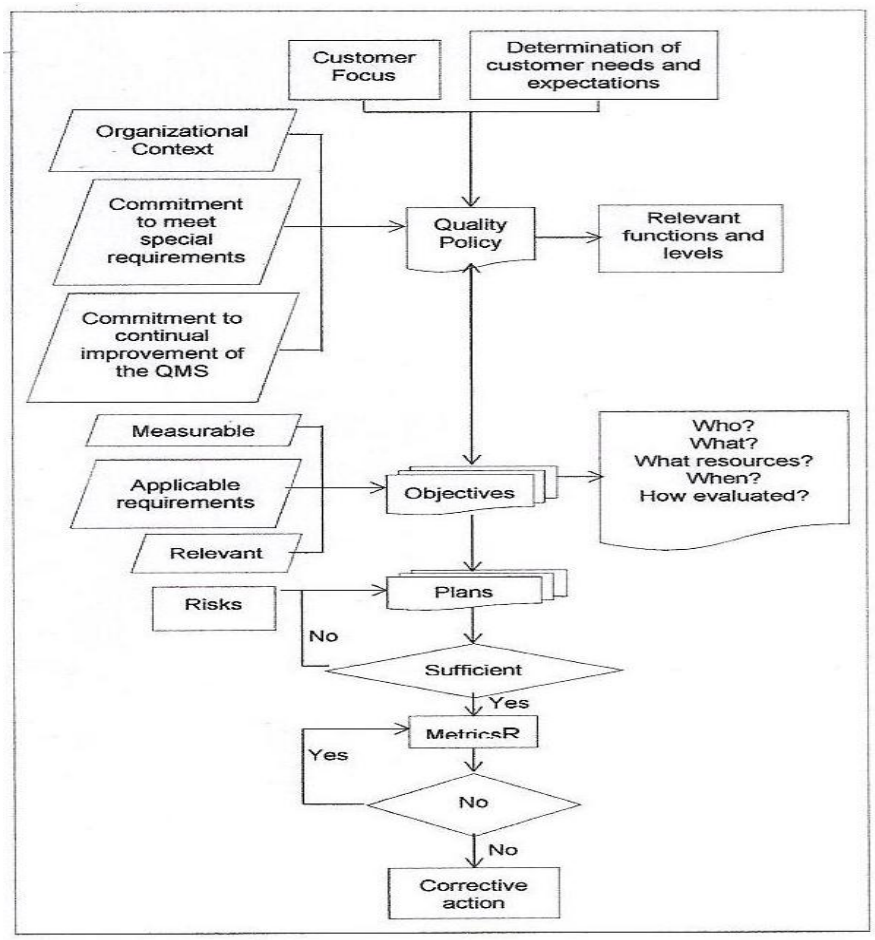
Figure 3: ISO 9001:2015 QMS structure



Source: Adapted from Reid (2014b)

Knowledge management

The new standard considers knowledge as necessary for the operation of the quality management system and its purpose and is that these processes to ensure conformity of goods and services and customer satisfaction. Therefore knowledge is to be monitored and protected and made available when required. Hence one of the challenges of organizations will be to create systems for knowledge management.

Internal auditing

As per the international accreditation forum the (2015), the new standard promotes the need to demonstrate system effectiveness and the application of risk based thinking through the process approach. This may result in the need for new auditing techniques and assessments. This will require internal auditors to be trained in the understanding of the new standards as well as new techniques for auditing.

Going green

Going green is now a critical issue and organizations are wanting to integrate sustainability solutions into business management (Wang and Wang, 2009). Business sustainability does not just depend on financial performance anymore, but depends on the ethical, social and environmental performance of the organization (Rossouw & van Vuuren, 2013). The new standard may provide an opportunity to integrate ISO 14001 and ISO 26001 so as to provide an economically viable greening plan, manage and promote business as caring for profits, people and

the planet. There are also opportunities to include green outsourcing. Green outsourcing is the contracting out of a process to an external provider ensuring that the provider is more efficient and effective in environmental issues and concerns relating to that process. In other words, hotels for example, who want to outsource their cleaning of the apartments, will have to ensure that the cleaning contractor is able to contribute to the hotel's objectives relating to environment and sustainability management. This will require the management to select external parties who are very conscious, ethical and responsible organizationsand who have aalower negative environmental impact when adopting the process.

Performance Management

Performance evaluation will require the organization to identify and manage risks and opportunities so as to determine what has to be monitored and measured to demonstrate the conformity of goods and services, performance of the processes, effectiveness of the quality management system, customer satisfaction levels and performance of the external providers. The organization has to determine the methods to be used, the frequency of measurements, the analytical procedures of the data collected and establishment of the performance indicators.

After sufficient plans are in place, leading and lagging indicators of the performance metrics are needed to monitor progress in achieving the objectives and specified requirements (Reid Nov 2014).Examples of these indicators can be number of customer complaints, costs of quality, returns and financial health.

Integration with ISO 22000

The ISO 9001 is a quality standard whilst the ISO 22000 is a food safety standard for those organizationsoperating in the food supply chain. When implementing food safety standards it is imperative to implement various prerequisite programs (PRP) complementing and supporting the standard. Such a programme could be forexample for personal hygiene. In addition an approach for Hazard Analysis Critical Control Point (HACCP) is also required. The South African Bureau of Standards has developed a South African National System(SANS) for standards development or adoption. The South African standard for HACCP is SANS 10330:2007.Table 5 shows a comparison of SANS 10330, ISO 9001:2008 and ISO 22000:2005. The ISO 9001:2015 changes applicable are shown in square brackets within ISO 9001:2008.

Table5. ComparativeanalysesofSANS10330:2007,ISO9001:2008andIS022000:2005.

Topic	HACCP SANS 10330:2007	ISO9001:2008 **[ISO: 9001:2015 changes]**	ISO22000:2005
	Hazardidentification andcontrol,PRPs	Quality management system	Foodmanagement system,PRPs
Scope	HACCPmanagement system	Quality management System **[no change]**	Food safety management system
Application	Organisationsthat wish to prevent biological, chemical andphysical hazards in food	All organisations including food organisations **[no change]**	Organisationsinthe food chain
Exclusions	N/A	Limitedtoclause 7 **[no exclusions]**	No exclusions

Table5. ComparativeanalysesofSANS10330:2007,ISO9001:2008andIS022000:2005.

Topic	HACCP SANS 10330:2007	ISO9001:2008 **[ISO: 9001:2015 changes]**	ISO22000:2005
	Hazardidentification andcontrol,PRPs	Quality management system	Foodmanagement system,PRPs
Riskanalyses	Required	Notrequired **[Required]**	Required
Policy	N/A	5.3. Quality policy **[no change]**	5.2. Foodsafety policy
Seniormanagement commitment and responsibility	5. Management.Management responsibility	5.1Management commitment **[Leadership commitment]**	5.1Management commitment
Continual improvement		5.4 Planning 5.5 Responsibility, authority and communication 5.6 Management review 8.5 Improvement **[Performance Evaluation]** **[Improvement]**	5.8 Management review
Continual improvement		5.4 Planning 5.5 Responsibility, authority and communication 5.6Management review 8.5 Improvement **[Performance Evaluation]** **[Improvement]**	5.8Management review
Food Safety planning	8. HACCPstudy requirements	**Can be incorporated in [planning for the QMS]**	7.4 Hazardanalysis 7.5Establishingthe operational prerequisite programs
Food safety and quality policy	5.1 General	4.2.1 General 5.1Management commitment 5.3 Quality policy **[Quality Policy]**	5.2Food safety policy
Manual	4.1The HACCPmanual	4.2.2. Quality manual **[left to the organization's choice]**	

Table5. ComparativeanalysesofSANS10330:2007,ISO9001:2008andIS022000:2005.

Topic	HACCP SANS 10330:2007	ISO9001:2008 **[ISO: 9001:2015 changes]**	ISO22000:2005
	Hazardidentification andcontrol,PRPs	Quality management system	Foodmanagement system,PRPs
Organisationalstructure, responsibility and management	5.Management responsibility	5.5Responsibility, authority and communication **[Leadership]**	5.4Responsibility and authority
Representative	5.2Management representative	5.5.2Management Representative **[no longer required]**	5.5Food safety team leader
Contractreviewand customerfocus		5.2Customerfocus 7.2Customer-related processes 8.2.1Customer satisfaction	5.6Communication
Internal audit	8.12.2.2 Internal audits	8.2.2 Internal audit **[Performance Evaluation]**	8.4.1 Internal audits
Purchasing-supplier approval and performance monitoring	6.2(l) PRP forcontrolof suppliers	7.4Purchasing **[Operation]**	7.2 PRPs 7.3.3 Product characteristics
Generaldocumentation requirements	8.13.1 Document control	4.2.3Control documents 4.2.4Control ofrecords **[No longer a requirement. A system of documented information of the organizations choice is required]**	4.2.2Control of documents 4.2.2Control ofrecords 7.7 Updating of PRPs
Corrective and preventive action	7.Corrective action 6.2(k) PRP for traceability and product recall	8.5.2Corrective action 8.5.3Preventive action **[Corrective action is part of improvement. Preventative action is replaced with actions to manage risks and opportunities.]**	8.5.1Continual Improvement 7.10.2Corrective actions 5.7Emergency preparedness and response 7.2PRPs

Table5. ComparativeanalysesofSANS10330:2007,ISO9001:2008andIS022000:2005.

Topic	HACCP SANS 10330:2007	ISO9001:2008 **[ISO: 9001:2015 changes]**	ISO22000:2005
	Hazardidentification andcontrol,PRPs	Quality management system	Foodmanagement system,PRPs
Traceability	6.2(k) PRP for traceability and product recall	7.5.3 Identificationand traceability 7.5.4Customerproperty **[Operation]**	7.9Traceability system
Productionand service provision	8. HACCPstudy using the 12 stageprinciples:	7.5.1Productionand service provision 7.5.2 Validation of productionand service provision	7.2PRPs 7.6.1 HACCPplan 8.2 Validation of control measure combinations
Operations Environment	6. PRPs	6.3 Infrastructure 6.4 Workenvironment **[Support – environment for the operation ofprocesses**].	7.2PRPs
Staff facilities, hygiene, housekeeping, waste removal, pest control	6. PRPs	6.3 Infrastructure 6.4 Workenvironment **[Support – environment for the operation ofprocesses**].	7.2PRPs
Chemical andphysical product contamination control	6. PRPs	7.5Production and service provision **[Operation]**	7.2PRPs
Foreign body detection		7.5Production and service provision **[Operation]**	7.2PRPs
Productpackagin gand ingredients		7.5Production and service provision **[Operation]**	7.3.3.1Rawmaterials, ingredients and product-contact materials
Storage andtransportation	6. PRPs	7.1Planning of product realization 7.5.4Customerproperty **[Operation]**	7.2PRPs

Table5. ComparativeanalysesofSANS10330:2007,ISO9001:2008andIS022000:2005.

Topic	HACCP SANS 10330:2007	ISO9001:2008 **[ISO: 9001:2015 changes]**	ISO22000:2005
	Hazardidentification andcontrol,PRPs	Quality management system	Foodmanagement system,PRPs
Planning of product realization	6. PRPs	7.2.1 Determination of requirements relatedto the product 7.2.2.Reviewof requirements relatedto the product7.2.3.Customer communication **[Operation]**	7.3.4 Intended use 7.3.5Flow diagrams, processsteps and control measures 5.6.1External communication
Productdesign development	8.12.3 HACCPplan review	7.3 Designand development **[Operation]**	7. Productrealization
Product inspectionand laboratory testing	8.12.2.1The HACCPteam shall establisha system fortheverification of all HACCP procedures and records. Verificationand	7.5Production and service provision **[Operation]**	7.2PRPs 8.2 Validation of control measure combinations
Controlof non-conformingproduct		8.3Controlofnon-conformingproduct **[Operation]**	7.10 Control of non-conformity
Product release	8.11Establish corrective action plans (only for unsafe product)	8.2.4Monitoring and measurement of product 8.3Controlofnon-conformingproduct **[Operation]**	7.6.5 Actions when monitoring results exceed critical limits 7.10 Control of non- conformity
Complaint handling	5.4.3Management review (Review ofcomplaints and recall incidents)	7.2.3Customer Communication **[Operation]**	5.6 Internal andexternal communication
Controlof operations	8.10 Establish a monitoring systemfor eachCCP	7.1Planning of product realization 7.5Production anservice provision **[Operation]**	7. Planning and realization of safe products

Table5. ComparativeanalysesofSANS10330:2007,ISO9001:2008andIS022000:2005.

Topic	HACCP SANS 10330:2007	ISO9001:2008 **[ISO: 9001:2015 changes]**	ISO22000:2005
	Hazardidentification andcontrol,PRPs	Quality management system	Foodmanagement system,PRPs
Calibration and control of measuring equipment	6. PRPs	7.6Controlof monitoring and measurement Equipment **[Support]**	8.3Control of monitoring and measuring equipment
Training	6. PRPs	6.2 Humanresources **[Support]**	6.1Provision of resources 6.2 Human resources
Medical screening	6.2PRPs	**[Support]**	7.2PRPs
Protective clothing for employees and visitors to production areas	6PRPs	**[Support]**	7.2PRPs

Source: Adapted from Ramphal&Simelane (2009)

Future research topics

The introduction of the revised standard will seed a plethora of research topics of interest to academics. Some of these can be listed as follows:

- Value of the ISO 9001:2015 standard
- Impact of the ISO 9001:2015 standard
- Quality culture with the ISO 900:2015 standard
- Auditing requirements based on the ISO 2015 standard
- Is ISO 9001:2015 changed the ISO philosophy

Conclusions

ISO 9001:2015 revision is once again adapting to its times with more focus on business management. It requires organizations to determine relevant internal and external issues, understand the need and expectations of interested parties, specify the scope of applicability of the quality system and consider these aspects together in order to understand the opportunities and risks they represent when implementing and achieving the outcomes the quality management system. In addition the standard ensures that there is a culture to entrench the appropriate competencies necessary for personnel doing work that affects quality performance. Various challenges were discussed that could face organizations when implementing the new standard. Quality practitioners will need to understand and implement such concepts as risked based thinking, strategic planning, digital information management, reducing work procedures to enhance customer satisfaction, change management and knowledge management so as to add value

to the organization. One wonders if organizations have now made a full circle back to 1987 when there was a much organizational anxiety starting with the ISO 9001:1987 based quality management systems which is in many ways similar to the current anticipation of ISO 9001:2015.

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