

## *Coordinating Editor's Prologue*

### **The ISO 9000 Family of International Standards – Three Decades**

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*The international scientific journal **Asigurarea Calitatii – Quality Assurance** dedicates a special issue to a special anniversary in the field of standardization: three decades ago, in **1987**, the standard **ISO 9000** was published by the **International Organization for Standardization (ISO)**.*

*This standard was based on the **BS 5750** series of standards from the British Standards Institution (BSI), that were proposed to ISO in 1979. However, its history can be traced back some twenty years before that, to the publication of government procurement standards, such as the United States Department of Defense MIL-Q-9858 standard in 1959, and the UK's Def Stan 05-21 and 05-24 [6,7].*

*The ISO 9000 family of standards represents an international consensus on good quality management practices. It consists of standards and guidelines relating to quality management systems and related supporting standards.*

*The **ISO 9000 standards** are very dynamic and have undergone many revisions since their beginning, in order to make them more efficient and relevant.*

*The first revision was in **1994**, focused on trying to clear up the indistinct elements of the 1987 version as well as place a greater concentration on quality assurance through preventative actions. It also maintained its requirement for verification of compliance with documented practices.*

*One of the most significant and successful revisions is those from the year **2000**. The **ISO 9001:2000** version combined the previous ISO 9001, 9002, and 9003 versions into one and introduced a new set of eight core quality management principles that consist of: (1) Customer focus; (2) Leadership; (3) Involvement of people; (4) Process approach; (5) System approach to management; (6) Continual improvement; (7) Factual approach to decision making; (8) Mutually beneficial supplier relationships.*

*The idea behind these principals is for them to act as a foundation that will help guide an organization towards improved performance and productivity.*

*After the next revision, those from **2008**, the standard remained fairly consistent with the 2000 version and the eight core quality management principals. The main objective during this revision was to clarify the existing requirements and to design the document to work in congruence with ISO's other management standards, such as ISO 14001:2004.*

*It is important to mention that in 2009, **ISO 9004** (which accompanied ISO 9001:2000 for the first time) was revised to promote a sustainable business approach. This version focused on all stakeholders and not just customers and social conditions. [1,3,4,6,7]*

***ISO 9001** is undoubtedly the best known and most widely used of the many standards developed by the International Organization for Standardization (ISO).*

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In 2012, ISO TC 176 – responsible for ISO 9001 development – celebrated 25 years of implementing ISO 9001, and concluded that it is necessary to create a new QMS model for the next 25 years. This is why commenced the official work on big revision of ISO 9001, starting with the new QM principles. As a result of an intensive work of this technical committee, the revised standard ISO 9001:2015 was released in September 2015.

The most significant change to ISO 9001:2015 is that the entire document is now focused around the idea of risk-based thinking. An emphasis on leadership and increased flexibility regarding documentation are other notable changes in the 2015 revision.

We have dedicated a special issue to the launching of the standard ISO 9001:2015, moment that was considered by important specialists in the field as „beginning of a new era development of quality management systems”. [1,2]

The need for International Standards is very important as more organizations operate in the global economy. The family of standards ISO 9000 – together with the family of standards ISO 14000 – has become thoroughly integrated with the world economy.

During all these years, the **ISO 9000** family of international quality management standards and guidelines has earned a global reputation as a basis for establishing effective and efficient quality management systems.

According to the last ISO Survey of Certifications (2017), more than 1,644,000 valid certificates of ISO management system standards were reported worldwide (from which, more than 1,106,000 ISO 9001 certificates) [5]. This high number of certifications is another proof of the utility and of the success of these standards.

At the same time, a whole industry has arisen – during the last three decades – from the need for third-party audits to system management standards.

## Genesis and Structure of the Special Issue

Beginning with the end of 2017, the Editor-in-Chief of the journal *Asigurarea Calitatii – Quality Assurance* and, at the same time, the coordinator of this special issue, Prof. **Ioan Bacivarov** contacted an important number of renowned specialists in the field in order to obtain their views and also the organizations they lead

concerning the family of standards **ISO 9000**, at their 30<sup>th</sup> anniversary.

The response to this approach has been very encouraging: consequently we are happy that we can include in this special issue the views of the leaders of the main international organizations involved in the development and implementation of ISO 9000 standards, including International Organization for Standardization (ISO/TC176) and International Certification Network – IQNet, as well as of the other top international experts in the field.

Achieving this special was done under time constraints related to the development, review and revision of articles\* Completion of articles for this special issue involved an intense activity and a proper management: hundreds of messages were exchanged between the Coordinating Editor, potential authors and reviewers and all the problems were solved in a record time. Therefore we want to thank everyone who made this possible: authors, reviewers, and publishers.

Following are brief presentations by the Coordinating Editor about each article of this special issue, in their order of appearance.

The first two papers of this special issue present the points of view of top officials of organizations involved in the development / implementation of the ISO 9000 standards, namely **ISO (TC176/SC2)**, and **IQNet**.

In the opening paper to this special issue, Dr. **Nigel Croft**, the Chairman of ISO/TC176/SC2, the ISO sub-committee responsible for ISO 9001 and ISO 9004, analyses the evolution of the **ISO 9000 standards** during the last 30 years. A special attention is given to ISO 9001, the best-known standard of the ISO 9000 series and which is used extensively for third party certification in global supply chains for products and services.

Dr. Croft concludes that the ISO 9000 standards have come a long way in the last three decades, but still provide the bedrock onto which other sustainable development components can be constructed into a single, harmonized management system. From their origins in the manufacturing sector, with a series of prescriptive, “document-heavy” requirements, they are now more user-friendly to a whole range of organizations, with a focus on managing processes in order to achieve successful outcomes.

In the second paper of this special issue, the President of the International Certification Network – IQNet,

\* Several articles were not framed in the time constraints related to publishing this special issue; consequently, they will be published in future issues of the journal *Asigurarea Calitatii – Quality Assurance*, but will be considered as part of this special issue.

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Mr. **Alexandru Stoichitoiu** underlines the fact that IQNet – one of the major users of ISO and ISO/CASCO documents – strongly supports ISO Strategy, supports ISO/CASCO activities and participates in various forms to these ones. The IQNet President analyses the results of an IQNet sponsored empirical research study on **ISO 9001:2015** transition process and certification benefits.

Organizations have to move from Product Quality to the next level of Quality of an organization by implementing an effective and efficient management system that is led by top management and is focused on the organization ability to meet the needs and expectations of its customers and other relevant interested parties, over the long term as the way to achieve sustained success of the organization. While ISO 9001:2015 focuses on providing confidence in the organization's products and services, the new standard **ISO 9004:2018** is focused on providing confidence in the ability of the organization to achieve sustained success. In his paper, Dr. **Isaac Sheps** – who is the convener of ISO TC176/SC2/WG25 responsible for the revision of the ISO 9004 standard – demonstrates the need for the above described development in quality and management systems.

The paper of **Dzedik, Ezrakhovich and Navolotskaya** addresses the steps in development of standardization and quality management and makes a prediction of the need for its further development using advanced information technologies, such as machine learning and artificial intelligence.

In his article entitled “ISO 9001: Three Decades of Leveraging Business Success in A Constantly Changing World” Mr. **David Balme** argues that **ISO 9001** return on investment over the last decades is most clearly tangible in life-critical industrial sectors. To explain how ISO 9001 achieved such a spectacular result, it is shown how the standard managed to regularly adjust its requirements to take up both local and global business challenges over time, sometimes in a disruptive way. It is also illustrated how relevant key quality management principles are to achieve corporate success. It is also reminded that not all components of our societies have yet benefited from ISO best management practices. Finally, a tentative outlook of new quality management principles is provided, based on process digitization and machine learning.

**Smith, Kourouklis and Cano** present the results of a research study which aimed to evaluate the impact the revised quality management standard ISO9001:2015 has had, through the introduction of the explicit risk-based thinking approach.

Their paper provides early additional knowledge relating to a risk-based thinking approach and the revised **ISO 9001:2015** quality management standard. It also points to the need for further review after the revised standard has become fully embedded and the 2008 equivalent has been made fully obsolete. Organizational value is also considered, for organisations looking to introduce an ISO based quality management system or modify existing quality management system to be capable of meeting the revised requirements.

## Acknowledgments

This special issue has been made possible due to the contribution of numerous people involved in the domain of quality management and certification.

First of all, special thanks are due to the prestigious authors, who submitted valuable papers for this issue.

Last, but not least, we thank all the reviewers for taking time from their busy schedules in order to provide useful feedback on very short notice.

Our sincere thanks to all participants who made this special issue possible.

## References

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## About the author



**Ioan C. BACIVAROV** received the MSc in Electronics and Telecommunications (1971) as Major of Promotion (Valedictorian) in Telecommunications and the PhD in Reliability Engineering (1978). He is full Professor at the Electronic Technology and Reliability Department of Polytechnical University of Bucharest (UPB), Romania and Director of EUROQUALROM-ETTI laboratory, both beginning with 1996.

Dr. Ioan Bacivarov was an Invited Professor at ETH Zurich, Switzerland, TIMA-National Polytechnical Institute Grenoble and University of Angers, France and a Visiting Professor at several universities from European Union – including Erasmus University Rotterdam, ENSAM Paris, University of West Scotland, INP Grenoble, Polytechnic University of

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Professor Ioan Bacivarov is co-founder and President of the Romanian Association for Information Security Assurance – RAISA and coordinates the *International Journal of Information Security and Cybercrime – IJISC*. He is/was a member of the Board of SRAC and RENAR and is the President of NTC 144 ASRO-IEC (Dependability).

His teaching and research interests include quality and dependability (esp. reliability and security) engineering and management, electronic technology, and cyber-security. He has published 22 books, more than 250 papers and coordinated 50 national/international research & educational projects in the above areas.

Prof. Bacivarov is Scientific Chairman of the *International Conference in Quality and Dependability – CCF*, organized in Romania (from 1986) and member of the Scientific Board of several international conferences in quality and dependability including ESREL, MMR, QUALITA, PSAM a.o.

Dr. Bacivarov is currently Editor-in-Chief / Editor of several international scientific journals including: *Asigurarea Calitatii – Quality Assurance*, *Quality – Access to Success*, *Quality Engineering*, and *Forum Qualite Scientifique* and was an Editor of the journals *Optimum Q*, *Reliability Engineering & System Safety* and *Maintenance Management International* a.o. He coordinated 18 special issues in quality and dependability of the above mentioned journals, including „Quality efforts in Europe” – *Quality Engineering* (USA) – 1995 and the last two special issues of *Quality Assurance* concerning ISO 9000 series.