

Juozas RUŽEVIČIUS

NEW CHALLENGES FOR QUALITY MANAGEMENT

The article analyzes global trends in the modern science of quality. It summarizes researches of the author and foreign scholars in the field. The model of maturity of innovations, concepts, methods and values, as well as innovative methods of quality grading have been shown, the essence of "deep knowledge" of E. Deming has been revealed. Author formulates his insights on the development of the sciences of quality and basic directions of priority research and applied studying.

Keywords: quality, quality management methods, innovation maturity, insight.

Ружевичюс Ю. Новые вызовы к управлению качеством. Анализируются мировые тенденции развития современных наук о качестве. Обобщены исследования автора и зарубежных ученых в данной области. Приводится модель зрелости новшеств, концепций, методов и их ценности, а также градация инновативности методов менеджмента качества. Раскрывается суть "глубокого познания" Э. Деминга, представлены авторские модели продвижения организации к совершенству и эффективному развитию. Формулируются инсайды автора о развитии наук о качестве и основных направлениях, требующих первоочередного научно-прикладного изучения.

Ключевые слова: качество, методы менеджмента качества, зрелость новшеств, инсайд.

"We are what we repeatedly do.
Excellence, then, is not an act, but a habit" – Aristotle,
Greek critic, philosopher, physicist, & zoologist (384 BC–322 BC)

Background. Modern challenges to quality management are caused by the following factors [1–11]:

- Partnership development (between the authorities, organizations of enterprisepreneurs and non-governmental organizations);
- increasing volume of innovations in various fields of human activity;
- the need for lifelong, permanent and longitudinal studies;
- relevance of education to responsibility of entrepreneurs as well as all members of the society;
- the need to adapt to the fleeting changes and their large amount;
- globalization of the world food market, complication of products compounding (dietary supplements, GMOs, new technologies etc.);
- increasing awareness and demands of consumers and society as a whole;
- the development of individual and collective social responsibility;
- origin and development of Global Responsibility;

- expansion of economic and cultural globalization and internationalization;
- increasing importance of knowledge management;
- growing differentiation of production and services;
- new standards of quality of life (QOL) and QOL at work;
- topical demographic challenges such as an aging society etc.;
- Need for a new level of workforce and others.

Earlier, the author of the article analyzed the main results of the global study of quality issues, conducted in 2013 by the American Association of Quality [9; 10]. He provided an overview of Status Quo in the field of quality in organizations around the world, carried out benchmarking of culture, communication, education, methods applied and other quality tools.

The aim of the article is to show that the quality can be attractive, field of quality is endless, and that scientists, and practice have not studied all the spheres of quality.

Material and methods. This article was prepared using the methods of summarising scientific literature, logical analysis, benchmarking, survey of organizations and entrepreneurs, using methodologies "case study" and audit of enterprises. To formulate generalizations author's experience of the consultancy in the field of total quality management and socially responsible business was used.

Results. Each scientific paper answers particular questions and opens up new opportunities and challenges. The aforementioned global study of quality issues [9] puts forward a number of new questions for future research in the field of quality management (*Fig. 1*).

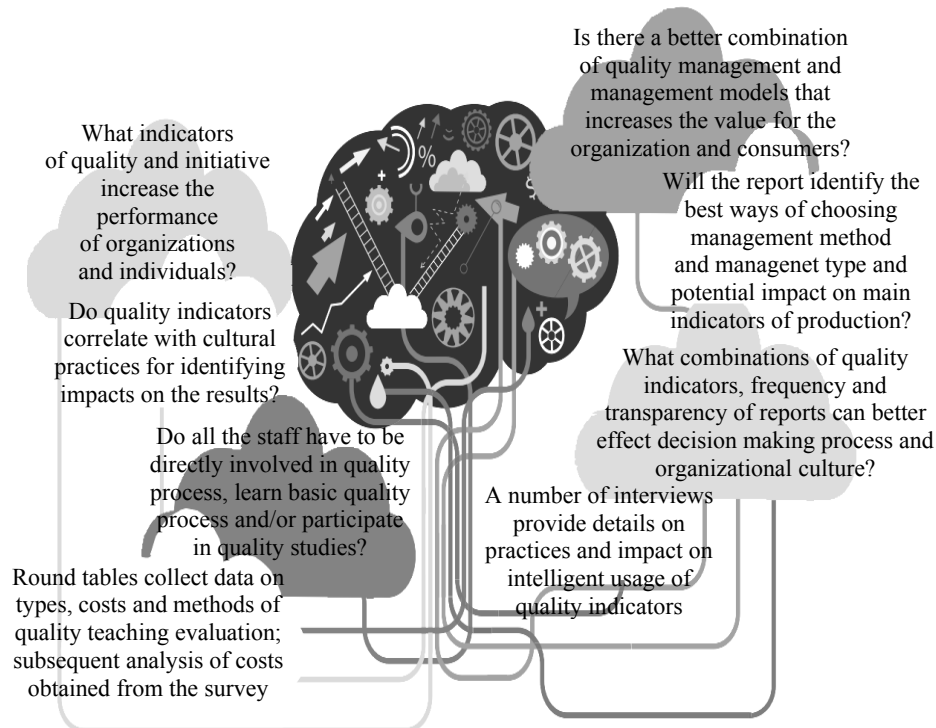


Fig. 1. Areas of possible further research in the field of quality [9]

Special attention and development require the so-called "soft" management techniques related to the quality culture, interaction of stakeholders, quality obligations and the principles, and others. It is necessary to determine what quality models give the maximum benefit for the both an organization and its customers. It is essential examine to more thoroughly how the system for measuring the quality and promotion of certain types of personnel affect the quality of both the organization and the professional growth of the individual. It is also important to establish what combination of quality measurement, the frequency of communicating it to enterprise's staff and customers and its transparency can most effectively influence the decision-making processes and organizational culture.

Based on the synthesis of the literature [1–11], the data of its own research and experience in consulting work, the author proposes are other possible areas of quality, requiring priority system applied scientific study:

- development of the methodology for determining the costs of design, implementation and support of quality management systems (QMS) and environmental management systems, as well as assess their profitability and efficiency;

- the study and assessment of the impact of standardization, certification, QMS and environment management systems on the added value of the organization and the gross national product of the country;

- comparative study of the real value of quality certificates issued by different certification bodies;

- disclosure of the intellectual products quality (trademarks, industrial design, inventions, works of authorship, sui generis and other products.) and the development of evaluation methodology;

- the study of the content, measure and evaluation of Attractive Quality of products and services;

- systematic study of the effect of national cultures and religions of the world on specifics of the effectiveness of the practical application of modern methods of quality management (unfortunately, the majority of European quality management textbooks and manuals do not baselessly include products of religious-ethnic, quality and certification aspects);

- assessment of the quality of public authorities and local governments;

- development of methodologies for effective quality management activities in specific organizations (religious confessions and organizations, political parties, prisons, courts, law enforcement agencies, legal organizations and others);

- development of methodologies for assessing the quality of legal acts (legal documents);

- the study of the impact of socially responsible (CR) activities on the financial and non-financial results of organizations and society as a whole (including the specific CR areas – socially responsible investment, Faire Trade, responsible consumption etc.);

– in-depth study of so-called soft tools of quality management – quality culture, communication quality, commitments and principles of quality, value principles, emotional quality etc.);

– the development of concepts and practical application of calculation methods of the carbon (CO₂) footprint and ecological footprint, as well as the development of possible means of contributing to a reduction of the aforementioned environmental indicators;

– improvement (clarification and simplification) of the methodologies to assess the quality of life at work (including the quality of academic life). This area will be more fully disclosed in the author's book [7];

– the development of concepts and systems of practical action contributing to the sustainable consumption of products;

– development of techniques for identifying and assessing the management maturity level (as well as level of maturity of social responsibility) in organizations of various types and specialties;

– determination of the real value and effectiveness of the new (and old ones) concepts, theories and methods of quality management.

We will comment the latter direction of studying quality comment in greater detail. You can hear among consultants: "I have read a new book or technique (on TQM – Total Quality Management, a GQM – Global Quality Management, on the TOC – Theory of Constraints, for LEAN-Six Sigma, on the 20 Keys Management, etc.) – I liked it, besides, now, it's in vogue – I will introduce it...". He or she often does not think about whether it's applicable and if the tool management is effective for a particular enterprise, whether it complies with the level of organizational maturity and intelligence of its employees. Developing new methods and concepts, you should always remember the predictions of "deep knowledge" of E. Deming, the four main components of which are summarized below [1–2; 7].

1. *System perception – Human Resource Management – Factors:*

- education, training;
- providing information, resources;
- leadership and management;
- obstacles at work;
- policy and management methods.

2. *Realizing the inevitability of variability change.*

3. *The theory of knowledge and cognition:*

- there is no knowledge without proper interpretation;
- the **experience** without the **theory** does not have a high value.

4. *Psychology:*

- 2 groups of employee motivation – internal and external;
- increasing salary is not strong and long-term motivator;
- the recognition of the achievements of the workers and their remuneration should be adjusted individually (or in groups).

According to the author of this article, training others in the use of the results of their own research, their own scientific, consulting and

practical experience provides the best results for the development of knowledge and skills of people studying – both students and practitioners. From various research sources we know that we remember or assimilate from: the lecture – 5–10 %, reading – 10–15, audio-visual – 20–30, demonstration – 30–40, discussion group – 50–60, practice by doing – 75–80 and teaching others – up to 90 %. So quite clearly we need to turn our students into teachers to make them understand what they should be learning. Recognising that this might not be achievable we need to look at other means of improving learning and the gaining of knowledge [7; 10].

Continuity between effective teaching and active research of a university teacher is confirmed by the following insight (saying) quality guru Edward Deming: *"It seems to me that the prime requirement for a teacher is to possess some knowledge to teach. He who does no research possesses no knowledge and has nothing to teach The only suitable judges of a teacher's knowledge are his peers. The only objective criterion of knowledge is research worthy of publication – measured on some scale of contribution to knowledge, not by numbers of papers"* [2].

The most important mission of the teacher is to spark the passion, enthusiasm and motivation of the student for purposeful, coherent and high-quality studies. It is very important to provide business students with practical skills and involve them not just to business games, but also the real-life problem solving in organizations. Why is it important?

The answer to that was suggested already 2.5 thousand years ago by great Chinese thinker, philosopher and teacher Confucius (circa 450 BC). He once said:

- *"Tell me – and I will forget"* (traditional lecture – JR)
- *"Show me – and I may remember"* (workshops, seminars – JR)
- *"Involve me (in real activities, processes – JR) – and I will understand"* (you will learn and start doing things and solving issues independently – JR);
- *"Let me free (give me the decision responsibility, freedom of activity the mandate – JR) – and I will work successfully"*.

What is an excellent or professional teacher? In author's opinion, it is a teacher who harmoniously combines six characteristics:

1. Scientific, pedagogical and professional applied knowledge generation development expertise.
2. Self-confidence.
3. Positive energy;
4. The belief in what he teaches.
5. Enthusiasm and
6. a genuine love for the most important customer and partner-student.

Every innovation – whether it's a concept, theory or method has it's life cycle – from the top of the excessive expectations of its use, then often follow their frustrations and to understanding and evaluating its real efficiency (Fig. 2). Depending on the circumstances, the real efficiency of

the use of specific method and may decrease and increase, as compared with the former value in a period of frustration (see the curves 1 and 2 in Fig. 2).

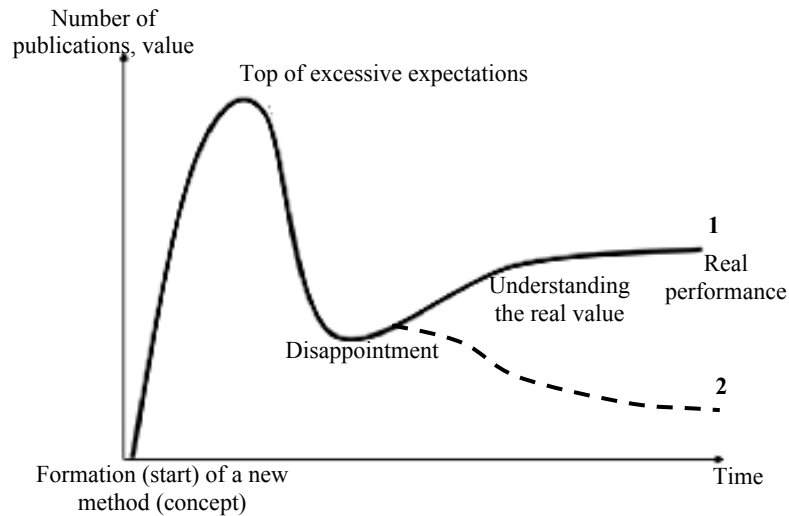


Fig. 2. Model of innovations, concepts and methods maturity and their value
(Source: developed by the author using [8])

Quality management methods used in the organization can be subdivided into 4 levels – from the logic and intuition to complex methods. According to the complexity of their development and implementation for clarity, they can be compared with the availability of fruit on the apple tree (Fig. 3). The more apples – the harder they are to get, the tastier and sweeter they are. The same often happens with the use of methods of quality in practice.

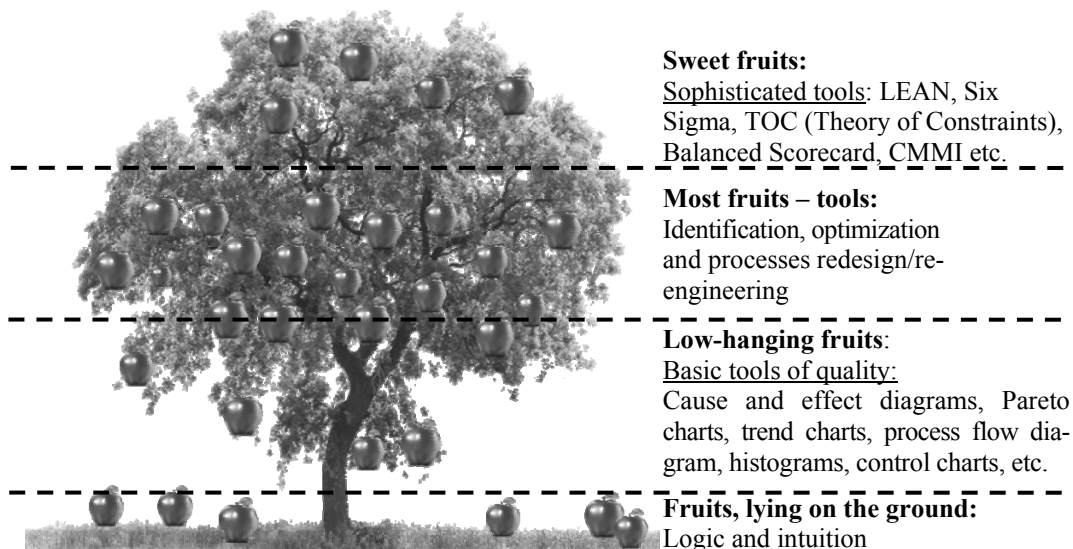


Fig. 3. Grading innovation of quality tools and possible degree of their usefulness
(Source: developed by the author using [4])

As practice shows, sophisticated management methods such as LEAN, Six Sigma, TOC (Theory of Constraints), Balanced Scorecard, CMMI (Capability Maturity Model Integration) are often implemented in organizations separately, without combining them into a single system. It does not allow get a proper synergy, which in turn reduces their possible combined effectiveness. Scientists should develop a methodology for integrating LEAN, Six Sigma, TOC techniques in a single instrument system of quality management of enterprises.

Great insights and statements about the real values and the fallacy of certain quality doctrines and slogans can be found in an article by T. N. Goh, Professor at the University of Singapore (Important Paradigm Shifts in Quality Management Practices; Six Sigma at Crossroads). A full text and other interesting articles on the quality can be found in the Internet home page of Master Program Quality Management of Vilnius University at the address – www.kv.ef.vu.lt.

Conclusions and final insights. The globalization of world economy together with the expansion of international trade has led to the fast processes of quality internationalization, as a crucial element of companies' competitiveness. These processes appear by wider application of the same methods, principles and criteria while determining quality policy, creating international accreditation, notification and quality certification systems in various countries. The partnership between business, state institutions and community organisations is equally important in ensuring a certain standard of quality. During these processes overall standards, technical regulations, quality management systems, procedures of quality conformity evaluation and certification are being widely used in different countries. They are being used to help both to insure the product and services quality and to eliminate technical barriers in trade. The European Union created effective cures for barriers in fluent movement of products. In this case the special place is taken by *New and Global approaches* of the product quality regulation. Their main requirements limit governmental interference in quality of companies. These aspects are not enough studied in the scientific works.

Contemporary quality management is very sophisticated issue, with all the colors of the rainbow to be used in different human life areas and activities. To the modern concept of quality a few new dimensions need to be introduced, e.g. social quality, global quality management, quality of government, quality of life, quality of working life, variance in product quality, economic management quality, partnerships, facilities quality management, intellectual products quality, ecological and carbon footprints evaluation and management, organizations social responsibility maturity levels evaluation, quality value orientations, etc. Interrelations between worldwide religions and quality as well as influence of national cultures and religion to the using effectiveness of modern quality management methods demand more profound further scientific researches.

The "wheel" of quality, economics, business and sciences interaction is cyclical by nature – that is fundamental discoveries of science are integrated into technical, economic, management systems of business and public sectors. On the one hand, consumers' buying habits, tastes, preferences and values are shifting violently with time. On the other hand, nowadays quality is regarded more as an attitude than technicalities. Hence, in summary we can say that quality is the expression of human excellence.

The oldest universities in Europe all the times were treated as cradles of innovations, new ideas and values. It is important to highlight that values and activities policy of modern higher education institutions, affected by nowadays environmental conditions related with modern economy, globalization and internalization of science and studies, should cover quality management, environment protection, social responsibility and other spheres of sustainability and excellence. That is why it is advisable for universities and colleges to form social responsibility and sustainability development strategies, including inculcation of different resources sparing and frugal culture or development of institutional quality, environmental protection and sustainability management system. These practices have been adopted by several Germany and Scandinavian countries universities yet. To be a pioneer in this sphere is an affair of honour for every university as well as one of their modern missions. The applied quality, sustainability and excellence policy could raise students' awareness in management, sustainable development, social responsibility not only from theoretical manuals but from practical university activities, if the range of the higher institutions' functions could be broaden by the mention innovative areas as well. Therefore, after graduation from universities or colleges the gained experience and knowledge could be disseminated broader. The spread of own positive experiences and best practices is not only a principal of total quality management but also one of the most important objectives of higher institutions mission. Adopted practices would benefit university or college not only materially, educationally, or culturally but it would also make a positive influence on European higher institutions' image among global academic community, business professionals and society. It all goes to show that business universities need the new professional teachers and the new teaching and education technologies. It is also valuable to pay attention to the significant insight of quality guru B. P. Crosby – "*Quality is the result of a carefully constructed cultural environment. It has to be the fabric of the organization, not part of the fabric*" [7].

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Articles submitted to editor's office of 19.05.2015.

Ружевичюс Ю. Нові виклики до управління якістю.

Постановка проблеми. Сучасні виклики до менеджменту якості обумовлені зростаючим обсягом інновацій в різних галузях людської діяльності, необхідністю лонгітюдного навчання, актуальністю освіти та едукації відповідальності підприємців і всіх членів суспільства.

Раніше автором проаналізовано основні результати глобального дослідження проблем якості, проведеного в 2013 р. Американською Асоціацією Якості. Представлено огляд *Status Quo* в галузі якості в організаціях різних країн світу, здійснено бенчмаркінг культури, комунікації, навчання, застосованих методів та інших інструментів якості.

Мета статті – представити якість як привабливо-аттрактивну категорію, яка перманентна, невичерпна и не до кінця вивчена.

Матеріали та методи. Використано методи узагальнення наукової літератури, логічного аналізу, бенчмаркінга, опитування та досвіду консультативної роботи автора в галузі всезагального управління якістю і соціально відповідального бізнесу.

Результати досліджень. Глобальні проблеми якості висувають низку нових напрямів для майбутніх досліджень в галузі менеджменту якості. Звернено увагу на "м'які" методи менеджменту, пов'язані з культурою якості, взаємозв'язком зацікавлених сторін, зобов'язаннями і принципами якості тощо.

Автор пропонує низку інших можливих царин якості, які потребують першочергового системного науково-прикладного вивчення. При цьому, опановуючи нові методи й концепції, варто враховувати, чи застосовний чи ефективний цей засіб менеджменту для конкретного підприємства, чи відповідає останнє рівню зрілості організації та інтелекту його співробітників.

Застосування результатів власних наукових досліджень, власного наукового, консультаційного та практичного досвіду дає найкращі результати для навчання інших і освоєння ними знань та навичок. Автор на прикладах демонструє, що кожне нововведення – чи то концепція, теорія або метод – проходить свій життєвий цикл.

Використані методи менеджменту якості умовно розділені на 4 рівні – від логіки та інтуїції до складних методів. Останні – *LEAN, Six Sigma, TOC, Balanced Scorecard, CMMI* – часто впроваджуються в організаціях окремо, без об'єднання їх в єдину систему. Це не дає можливості отримати від них належний ефект синергії, що знижує їхню сукупну ефективність.

Висновки. Якість, економіка, бізнес і науки циклічно взаємодіють. Якість сьогодні є уособленням людської досконалості. З метою ефективного усунення бар'єрів у просуванні продукції особливе місце займають нові, глобальні підходи регулювання її якості.

Один із основних викликів до управління якістю – обмежити втручання суспільства в менеджмент якості компанії. Сучасний менеджмент якості є дуже складним процесом, який буде використовуватися в різних галузях і видах життєдіяльності людини.

Особливої уваги й розвитку потребують "м'які" методи менеджменту. Вченим потрібно розробити методіку інтеграції *LEAN, Six Sigma, TOC* методів в єдиний системний інструмент менеджменту якості діяльності підприємств.

Ключові слова: якість, методи менеджменту якості, зрілість нововведень, інсайд.