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New principles, tools, and infrastructures for quality management in modern changed business environments

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From problems and confusions to excellence and clarity

In many cases quality development has not redeemed its promises indisputably. There are serious problems in the prevalent quality management approaches. These including:

- Business management is not involved / committed. – Quality is a specialist issue.
- Communication between business managers and quality experts is not effective.
- Quality initiatives – e.g. building distinct quality systems – are not business-centered.
- People don't recognize or understand – not even experts – difference between quality management (QM) and quality assurance (QA) (ref. ISO 9000).
- There are lots of different, distinct, and competing quality methodologies on which even quality experts don't share the same opinions.
- Many other specialized managerial initiatives compete with quality development.
- Quality initiatives in organizations are certification-emphasized and not enhancing business performance. Certification is commercialized and lost its credibility, and may even be considered harmful.
- Often quality related actions are only reactive and very little proactive.
- Formal documentation is highlighted instead of a comprehensive management and application of business information and knowledge.

Genuinely all quality initiatives and measures should strive for enhancing overall operational (business) performance.

When striving for practical and effective solutions for quality management, all recognized references emphasize integration and innovation. An innovative quality approach is needed in market driven business environments. There are no single solutions to business challenges. Integration implies:

- Implementing effective and efficient quality principles and methodology embedded within normal strategic and operational business management activities
- Enhancing business performance in a systematic way and collaborative learning in the organization
- Acting against building distinct ”quality systems”

Cornerstones and goals of an organization’s successful management and performance excellence – as summarized in figure 1 – are a) clear understanding of the guiding ideas, concepts, and principles b) effective management tools, and c) effective innovative management infrastructure (Senge, Roberts, Ross, Kleiner, 1995).

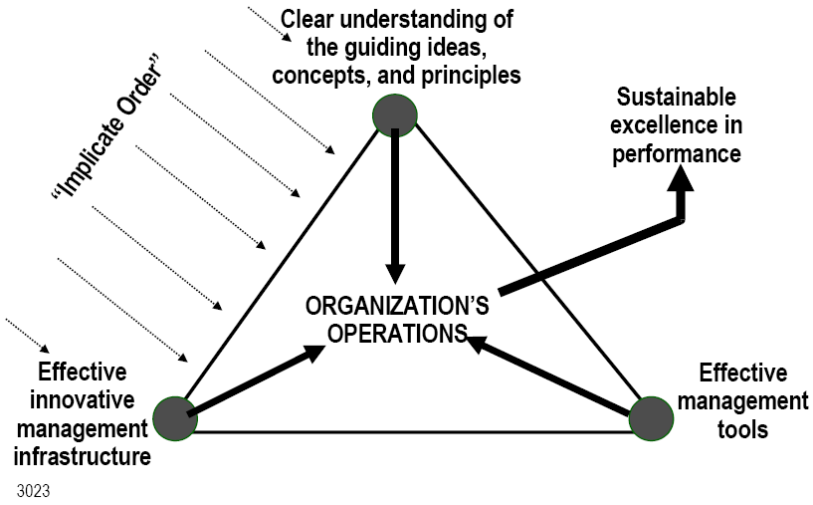

Figure 1. Cornerstones and goals of quality management

Organizational identity and profile

Starting point to the quality development is organizational identity and knowing environment of the organization. An organization’s integral and holistic oneness is created by the company itself. A company’s ethos – the way of life, the mindset – should be in harmony with its environments. Business leaders’ duty is to establish, maintain and develop the holistic business identity of the organization in the real business environments. Even quality initiatives should be aligned with that.

There are useful practices and tools available to define organization’s business profile. Malcolm Baldrige criteria define a framework for the organizational profile (NIST, 2006). Also in the ISO 9000 standardization, there is under consideration a particular tool (figure 2) for the same purpose (ISO/TC176/SC2/WG18, 2006).

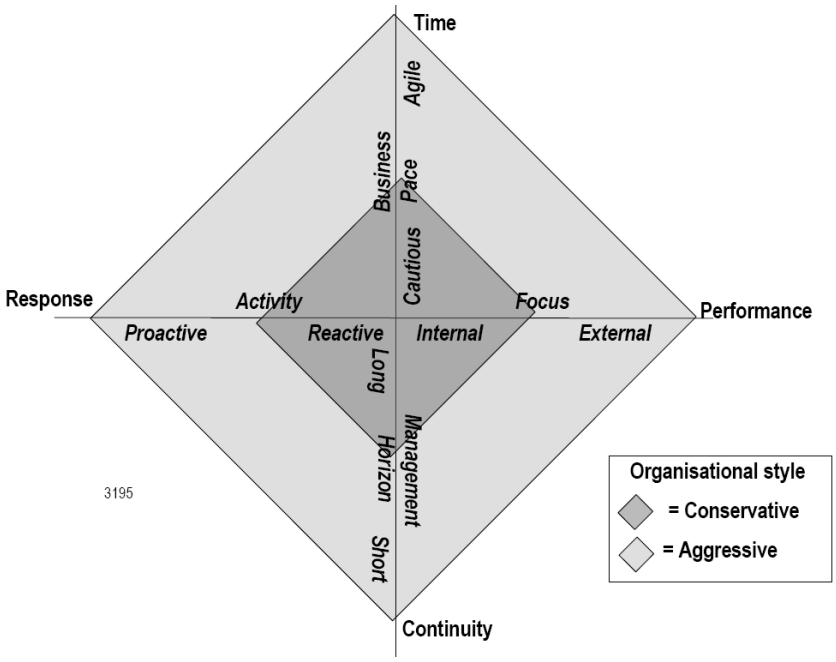

Figure 2. A managerial grid defining an organizational profile developed in the ISO 9000 standardization committee

Operational realities and environments

Business environments of all kinds of organizations have been changed from certainty and predictability to uncertainty and ambiguity (Locke et al, 2000) (Anttila, 2004-1). That includes the following:

- All are linked with everything else, all linkages are not known.
- Organizations are operating in emergent and self-organizing networks of actors.
- There are many heterogeneous global actors in virtual networks.
- Business processes are complex responsive processes of relating.
- There is a paradox freedom of the actors (”both-and” instead of ”either-or”)
- Simultaneous there are requirements for agility and maturity.
- Significance of immaterial issues (information, knowledge, services) is greater than of material issues.
- Transaction phenomena are key aspect for forming business organizations and arrangements.
- Increased speed of activities and change are prerequisites for all business.
- Work of people and business leaders are under immense pressure.

Principles and models for a good management

Traditional basic concepts of quality and quality management are still valid in today’s business circumstances. However, the very basic concepts of quality management (QM) and quality assurance (QA) must be understood in an innovative and integrative way.

QM equals quality of management. Quality management is the responsibility of business leaders and it is taking place through the managing actions of business leaders. Quality management system (QMS) is the basic concepts for getting quality of management happen in any organization. There are two parts in this concept:

- Management system (of an organization), MS: A system to establish policy and objectives (of an organization) and to achieve those objectives
- Quality, Q: A qualifier (attribute) characterizing a management system (MS) to which degree it fulfils the needs and expectations of organization's interested parties

QA is for the external purpose of business for creating and strengthening confidence within customers (and other external parties) in business relationships. QA is particularly a communication issue between an organization and its stakeholders.

There are many appreciated references for principles of a good / excellent management. Especially the following four sets of principles for a good management could be used in all organizations: a) ISO 9000 – Quality management principles b) Malcolm Baldrige - Core values and concepts c) EFQM - Fundamental concepts of excellence d) Deming Application Prize – Total quality management (TQM) principles (Anttila, 2005). Although these references use different titles and phraseology their contents are very similar and they all relate to good principles for managing an organization. When applying these "standard" principles in a particular organization one should take into account organization's specific business needs and situations in an innovative way.

As an example, a company tried to take into account all aspects of the mentioned references and apply them in their modern business environments. They focused the results into following seven fundamental principles for managing the organization towards performance excellence:

a) Centering on customers' needs and expectations individually
b) Envisioning the future challenges
c) Valuing employees
d) Managing the organization as a system of responsive and agile business processes
e) Discovering, collaborating, and learning for enhancing the business performance
f) Valuing partners
g) Responding to the needs and expectations of the modern society

How could an excellent performance of management be achieved? There is a huge amount of research and literature on management. There are also many competing schools for a good management, and plenty of managerial tools are available. Many feel the situation confusing. A well-known general and recognized model for all areas of management is PDCA (Plan-Do-Check-Act) model. In organizational environments the PDCA model is to be applied in three different scopes that cover the whole area of QM: a) control, b) prevention and operational improvements, c) breakthrough improvements By using the PDCA model comprehensively one may also apply the ISO 9000 standards and performance excellence models (quality award criteria) for finding advice to the details. Again organization's own identity, organizational profile, and business needs

must be emphasized. Both ISO standardization and excellence model organizations support the combined use of ISO 9004 standard and excellence models (ISO, 2005).

Operational infrastructures

Modern organizations operate in networked business environments. Genuine networks are unplanned, emergent entities. In networked business environments conventional quality systems, quality organizations, quality manuals or quality records, traditional work of quality managers, or third party certifications have very little or no beneficial role for the real purpose of quality management. In fact, they may even cause more harm than advantage.

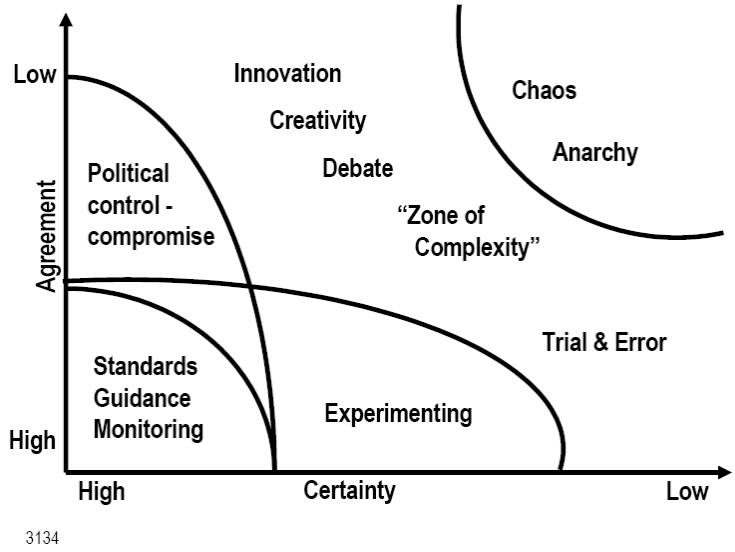

Figure 3. Many different kinds of activities may exist in the complex responsive processes of relating. Appropriate management actions should be selected based on the degree of certainty and level of agreement on the issue in question (Stacey, 2002/2003).

Networked business processes are complex responsive processes of relating (figure 3) (Stacey, 2002/2003). Activities of the processes represent different levels of agreement and degree of certainty. Appropriate management actions should be selected based on nature of the activity. Management of the business situations depends on the following three aspects (Naidoo, 2005):

1. Identity of the actors: The actors themselves (process / activity / automatic actor / person) and the set of characteristics by which actors are definitively recognizable
2. Relationship of actors: Level of agreement, degree of certainty, level of win / win
3. Communication between actors: Open / restricted / closed / fuzzy

Managerial quality tools

Managerial quality-tools consist of practical systematic operating models, methodologies, means, etc. and even useful theories. There is a huge amount of different tools for quality management available. In a consistent management system, tools are developed and maintained in a proper way. As an example, the following methodologies were the major managerial tools in a "business excellence tool kit" of an organization with which particularly quality experts were involved:

- Process management model
- Project management model
- Balanced strategy card (further developed from balanced scorecard)
- Self-assessment methodology
- Process performance assessment methodology (auditing practice)
- Benchmarking methodology
- Problem solving and innovative performance improvement methodology

Process management model is the most significant methodology in striving for excellence in managing an organization, even more significant in modern business environments. Other tools from other expert areas, e.g. financial management, human resource management, technology management, risk management, purchasing and logistics, marketing, etc. are also essential for the quality of management.

Successful organizational management is based on right knowledge and managerial skills to use the knowledge for the current business needs. Additionally, exchange of information is necessary between customers, employees, shareholders, suppliers, business partners, and the great public. The use of information and communication technology (ICT) has been increased overwhelmingly within all kinds of organizations, their management systems, business processes, and relationships with stakeholders. However, this has often taken place in terms of ICT solutions only, and induced to difficult situations in many business cases. One should also take into account thinking, understanding, competences, skills, commitment, and feelings of users of the ICT systems. These things are linked to the tacit or implicit knowledge of people.

Also quality management is primarily based on the beneficial use of business related data, information, and knowledge. Multifarious methodologies, tools, and practices of managing knowledge should be used in the context of professional quality applications. Quality experts and the application of recognized quality references have traditionally emphasized explicit information, e.g. documentation, written descriptions and procedures, specifications, agreements, and information records. Tacit knowledge has not been considered as consistently and in the same details and deepness. However, the most voluminous and important part of knowledge from the business point of view is tacit (Anttila, 2004-3).

Separate information / knowledge bases and communication systems and practices are not necessarily effective for leveraging the beneficial use of information / knowledge in an organization. The new approach is striving for integrated and effective solutions

consisting of portals / portlettes, integrated IT solutions (SOA), and collaborative group work and social networking infrastructures of Web 2.0. (O'Reilly, 2005) (Anttila, 2004-3)

Effective learning is the key for developing quality in management (Smith, Argyris, 2001). Organizational and personal learning are prerequisites for enhancing management / leadership skills. For quality management this particularly means enhancing quality awareness within an organization (Anttila, 2006) (Anttila, Savola, Kajava, Lindfors, 2007). Management learning in organizations has been based on training by traditional or e-learning means. However, investments in these solutions have not proved effective. Effective e-learning requires application of new learning theories like connectivity, interactivity, and sharing information. (Downes, 2004) (Siemens, 2004) (Gloor, 2004)

Knowledge Work Environment (KWE) is a modern ICT supported approach to facilitate effective and efficient knowledge-intensive and networked business activities (Anttila, 2006) (Arina, 2006). KWE provides means for learning through improving internal and external interactive and collaborative communication of management and experts, and building social knowledge and intelligence. (Nonaka, Toyama, Konno, 2000)

KWE consists of ability to lead knowledge workers into electronic work areas, where they work in collaboration to learn by building new knowledge. They have also all relevant explicit information easily available through related documents. The basic KWE tools include blog, wiki, aggregator, forums, and files that are based on modern proved social software or Web 2.0 technology.

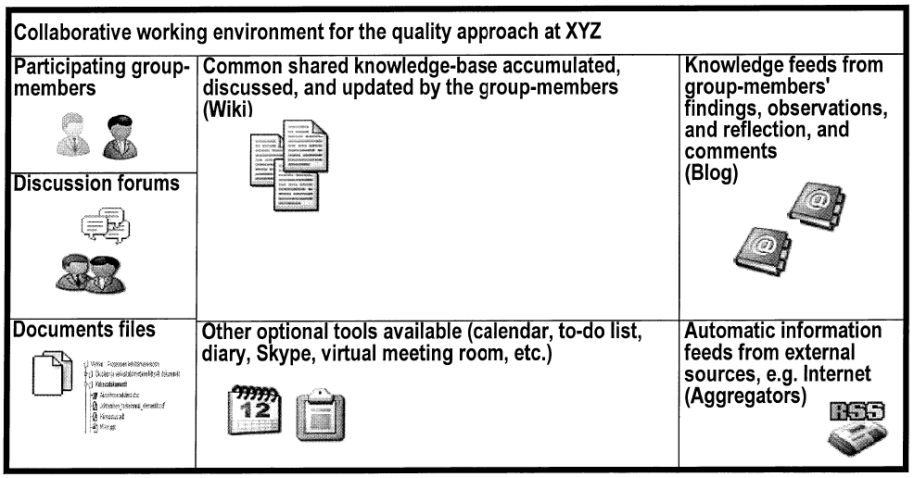

Figure 4. Virtual IT (interactive technology) supported managing / learning environment (KWE) of any organization XYZ by using Web 2.0 tools for quality approach via ASP (application service provision)

Many different kinds of evaluations and assessments form an essential part of quality management. Self-assessment by using business excellence models have proved useful in many organizations. However, the used methodologies have been too laborious and too much stagnant in using certain single models only. Also in self-assessments one may apply new innovative approaches.

An example is 3-in-1 methodology where all contents from Malcolm Baldrige and EFQM models and ISO 9000 standards have been combined in a one single system that is also easy to modify for particular business needs. This methodology uses an advanced ZEF assessment application that offers a user-friendly and efficient tool to collect people's tacit knowledge on views and opinions (ZEF Solutions, 2006). ZEF is a unique web-based application. Especially, evaluation in two dimensional charts offers effective and illustrative way to show performance level in certain assessment questions and their importance from organization's business point of view.

Quality assurance

Quality assurance (QA) according to ISO 9000 refers to measures with which both customers as well as other interested parties (stakeholders) are getting convinced of the fact that the requirements pertaining to products are met and that the organization has reasonable abilities for that. The essence of good QA is an effective communication.

There is a big and serious need for innovations in QA solutions that can reflect excellence also in QA and clearly reflect the needs of an organization and its customers (Anttila, 2006). The new e-business technology creates completely new cutting-edge solutions (e.g. "e-certificate") for QA. An e-certificate consists of Internet site(s) or portal solution providing for assurance that an item conforms to a standard or specification indicated by the certificate. It gives also an opportunity to personalize and create partnership-dedicated efficient solution with collaborative extranet technology. This solution is also facilitating flexible real time and bilateral multi-media communication between cooperating partners. With these means an organization may act individually to fulfil QA needs of separate stakeholders. Customer's differentiation and organization's capabilities for an "enterprise one to one" approach are challenges also in quality assurance (Peppers, Rogers, 1999). (figure 5)

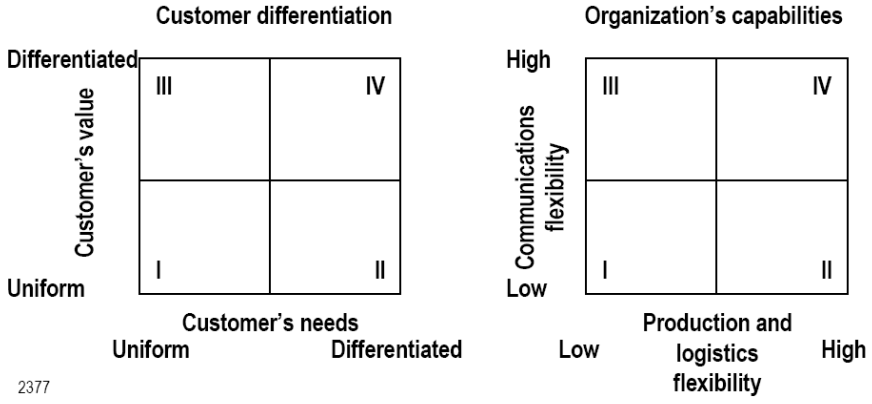

Figure 5. Customer's differentiation and corresponding organization's capabilities for an "enterprise one to one" approach (Peppers, Rogers, 1999).

Conclusions

There is a lot of stagnation, doubts, and even frustration about quality related initiatives in many organizations. Major reasons for this kind of harmful development obviously include lack of innovation, lack of courage to take radically new approaches, and immense busyness of business people. Especially traditional quality management practices have not been enough flexible to accommodate to the needs of modern business environments. When striving for competitiveness in these circumstances one could underscore the following aspects:

- Recognizing business performance excellence instead of a narrow quality thinking
- Striving for flexible realization of quality of management and leadership instead of distinct and vague quality management (i.e. management of quality)
- Adopting organizational learning instead of continual improvement
- Applying the "systematicity" (systematic approach) of the quality of management and leadership instead of formal and distinct quality systems
- Using business-related principles and actions of the quality of management instead of formal and general quality assurance requirements only
- Setting stretched business objectives for quality of management instead of minimum standard requirements
- Aiming at innovative and unique solutions instead of stereotyped systems
- Relying on genuine and effective internal business performance self-assessments instead of third party audits and certifications of "artificial" quality systems
- Getting advantage of tacit knowledge and collaborative learning instead of only records of explicit data and information
- Having genuine impacts on the organization's quality approach and success by the behaviour of the top management.
- Using company's own internal expertise and effective cooperation with world-wide quality experts' network instead of external consultants

Experiences have proved that it is always worthwhile to improve the existing management “systematicity” of the organization based on a systematic methodology. This is still more important in new dynamic business environments than in traditional business relationships. For QM the organization must be always ready but never finished.

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The text above is a short version of the more comprehensive text that is available from the following Internet page: http://www.qualityintegration.biz/Helsingborg2007.html

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Biography of the author

Mr. Juhani Anttila was graduated at Helsinki Technical University 1967 (M.Sc. - E. Eng.) and completed General Management Programme for Specialists at Cranfield School of Management, UK 1997. He has been International Academician for Quality (Member of the International Academy for Quality) from 1995.

Mr. Anttila has been professionally involved more than 40 years with different quality related tasks and positions, and during that period worked 35 years for the leading Finnish telecommunications operator, Sonera Corporation.

He has been broadly involved with national and international standardization, e.g. since 1980 as a member of the committee ISO TC 176 for drafting for generations of the ISO 9000 standards. He has been expert of quality in many national and international projects including developing countries. 1990-94 he was the chairman of the criteria committee of the Finnish National Quality Award, and 1993 Assessor of the European Quality Award (EFQM).

Mr. Anttila was many years from 1970's to 90's as board member in the Finnish Society for Quality, 1984-87 President of the Finnish Society for Quality and from 1998 Honorary Member of the Society. He is Honorary Fellow Member of the Quality and Productivity Society of Pakistan. Several years he was the responsible person for international contacts of the Finnish Society for Quality including EOQ General Assembly and bilateral scientific-technical cooperation between Finland and some other countries. 1994-96 he was Vice President of EOQ (European Organization for Quality).

Mr. Anttila has a lot of publications including contributions in professional periodicals, conferences, seminars, etc in the fields of telecommunications, quality/reliability, and information security. He was the Chairman of the technical programme committee of EOQ'93 Helsinki World Quality Congress sponsored by EOQ, ASQ, Juse and IAQ.

After retiring in 2003 from Sonera Corporation from the position of Vice President Quality integration Mr. Anttila has been an independent expert – Venture Knowledgist, Quality Integration. He has been an expert adviser in quality of management in several organizations. He is board member or chairman of the board in some companies. He is also a lecturer at University of Lapland, Finland and IIMT of University of Fribourg, Switzerland.

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