Tacit knowledge – the essence of quality management systems

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Abstract

Organization’s quality management system means quality of management that is carried out in a systematic way and covers the whole organization. Managerial levels include the whole organization (a corporation or a business community as a whole), its business units or functions, business processes, and individuals and teams. Leadership emphasizes managers’ personal and human aspects in conducting business resources and actions. Leadership is based on managers’ inherent understanding, knowledge and behaviors. However, traditionally explicit business information has been emphasized in realizing quality management. Now the challenge is to combine explicit and tacit (implicit) knowledge in all managerial business decisions in a professional way.

Also at the operational employee level tacit knowledge has a crucial importance for the personal performance in carrying out the work. In fact, nowadays all organizations are knowledge-based businesses, and all workers are knowledge workers. It is a big challenge of a quality management system to get knowledge moved from individuals to the whole organization and between different actors, and from tacit domain to explicit domain and also vice versa.

Modern ICT (Information and Communication Technology) solutions may be also very useful in the area of tacit knowledge. Portal is an advanced solution for knowledge-content businesses. Portals use Internet technology, but basically a portal is very different from simple Internet or intranet pages. A big quality related opportunity in portal solutions is to get the use of business related knowledge and information appearing in many forms and in different locations in the organization more effective and efficient. Web-based group work environments promote collaborative learning and innovation in organizations and networks. These issues have become most significant factors in modern successful quality management systems.

Introduction

The essence of quality management is to manage organizational resources and operations by relevant information and knowledge. The needs of using information have been increased overwhelmingly within all kinds of organizations, their management systems, business processes, and relationships with the stakeholders or interested parties. However, this has often taken place in terms of ICT solutions only. This has induced to difficult situations in many business cases. Modern electronic business solutions and ICT systems have become almost obligatory in all kinds of businesses. However, typically they have not made the total situation easier because, in fact, they are much more than only technological issues. One should also take into account thinking, understanding, competences, skills, commitment, and feelings of the users of the technological systems. These things are linked to the tacit or implicit knowledge of people.

Quality experts and the application of recognized quality references, especially ISO 9000 standards and performance excellence models, 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.

In general quality is understood as degree of fulfilling the needs and expectations of all stakeholders or interested parties of an organization effectively and efficiently through organization’s products. In general those products consist of goods and services, and they are realized through business processes. Quality management is nothing else but effective and efficient organization-wide business management and it is primarily based on the beneficial use of business related data, information, and knowledge. Therefore multifarious methodologies, tools, and practices of managing knowledge should be used in the context of professional quality applications, and even quality experts should be aware and follow the general development of these aspects.

**Business realities have changed**

The world of business where organizations live and work today is blurred and based on three major drivers:
- Speed: Every aspect of business and the connected organizations operates and changes in real time.
- Connectivity: Everything is connected to everything else: processes, products, people, businesses, companies, countries, etc.
- Intangibles: Every business connection has both tangible and intangible value. The intangible is its real essence. Information and knowledge issues (especially tacit knowledge) are emphasized.

Business foundations have changed from certainty and predictability to uncertainty and ambiguity. That means emphasizing significance of implicit business issues over the explicit ones. This especially implies deep understanding of business situations, foundations, and relations. This situation has remarkable effects in all management structures and actions (including quality management), and the business can’t any more be managed by obsolescent means.

Due to competitiveness all organizations should strive towards excellence of business performance. That is also the major intention of all modern quality efforts. Business excellence can be achieved by deploying appropriate approaches with superior effectiveness and efficiency irrespective of the volatility of business environments. Particularly innovations are emphasized. That requires development and implementation of appropriate principles and practices also for quality management and quality assurance.

Agility versus maturity is today’s hot question in the field of quality management. Agility means dynamic, context-specific, aggressively change-embracing, and growth-oriented issues. The maturity school is on the contrary appreciating established planning, documentation, systems, etc., as relating e.g. to the traditional quality management. World wide discussion is in a paradoxical situation due to the maturity models and quality management standards, and on the other side the manifesto for agile development. In fact, the both approaches are needed simultaneously, but the big question is how. The maturity-agility dilemma is, in fact, very related with the situation of explicit and tacit knowledge. Flexible and agile systematic approach is seen possible only when having a profound knowledge and deep understanding, and using new modern principles for business process management, advanced information technology, and management of knowledge.
Approaching from traditional to the new quality management

Professional quality principles and methodology for quality management has long roots and development around the world during decades since 1920s. Now the most important references of contemporary quality approaches are:
- ISO 9000 standards and their derivatives
- Quality awards criteria and business excellence models

These recognized and broadly used references may still be useful and their guidelines still relevant in the new business circumstances if only their substances are understood in new way, especially taking seriously into account tacit knowledge issues (see figure 1). Some examples that, however, are very central topics of quality management are questioned here:
- What is the essence of real responsibility of a top manager?
- What is the role of “hidden” structure of a business organization?
- What are the weak signals anticipating changes in the business environments and among the partners?
- How could one understand continual improvement as organizational learning?
- How to manage immaterial parts of our products, especially services?
- What are the linkages between the explicit business processes and their performances, and internal mental processes of the workers?
- How to manage with rational, non-rational (emotional), and irrational (spiritual) intelligence in the business situations?
- How to achieve benefits from innovativeness of the personal?
- What does it mean and require when creating and strengthening confidence among our stakeholders (i.e. achieving quality assurance happen in reality)?

Figure 1. The real quality management system is predominantly a mental system and a common managerial thinking / behavior model or managerial memory of an organization.

In these contexts conventional quality systems, quality manuals or quality records, traditional work of quality managers, or third party certifications have very little or no beneficial role for quality management. In fact, they may even cause more harm than advantage. Quality
management system should be understood primarily as a mental system (see figure 1) and as a
general concept for a good systematic management approach, and it should include appropriate
methodology for managing information and knowledge. For the same reason also texts of the
quality management standards and criteria of the quality awards represent only a very minor part
of the entitities those documents imply in real practices in organizations. That is also reason why
there are so many different opinions about those documents. Deep tacit knowledge gives us good
bases also for understanding the standards and business excellence models as the very same
substance but only seen in different perspectives.

One of the most common practices in organizational management is planning. However,
accomplished organizational activities often turn out to be different from the plans that were
formulated. A major reason to this is that planning cannot reflect organizations’ real dynamic
nature. Typically organizations pay too little attention to understanding the present. It is often
only about defining the vision for the future or analyzing the past, so that one can make factual
predictions. However, we are always acting in the present. The present is actually the only time
in which one can ever do anything. The future is actually in the present, in the form of
expectations. But we are also always acting in the present on the basis of our past. So the past is
in the present, in the form of the particular story we are telling ourselves as we are doing what
we are doing. Present time focus means that we should try to understand what everyone is
actually doing – and not doing – and why this is happening. To clearly understand just what it is
that we are doing together in groups, or in organizations, that leads to the emergent patterns that
are our experience. These patterns of behavior are just the core of an organization. They happen
as a result of all the things that people are thinking and feeling and doing. Thus, the business
reality is primarily something tacit in our minds.

Why then do we design various control systems – including formalized quality management
systems – and put together business plans? The purpose seems to be that they are social defense
against anxiety, to find some kind of defense mechanism or procedure to avoid the anxiety. The
problem is that we seem to mindlessly design and install procedures and systems that are based
on taken-for-granted ways of thinking. A lot of the systems that we put in place today actually
make people ill, if we don’t understand and take into account the role of tacit knowledge in our
behaviors.

One may consider two more detailed examples characterizing the nature of tacit knowledge in
quality management: values (as mentioned e.g. by the performance excellence models) and
quality policy (as expressed in the ISO 9000 standards).

Only human beings – never organizations – have values based on their appreciations. One may
see those values in actions of people, not in any documents. Very often the concept “value” is
not used at all in practice. Thus values are tacit knowledge issues. Organizations may have
documented norms or value management. How one can see those in practice and their effects?
Again we are confronted with tacit matters.

Quality policy means what are the overall intentions and direction of an organization related to
quality. Again the genuine quality policy can be seen only in the actions of people, not in papers.
Quality policy document issued and signed by the top management of the organization is only a
tip of iceberg of the actual policy. It may, however, be a useful managerial tool. In fact, it is not
necessary to use concept “quality policy” at all in practical business operations.
Knowledge focus in quality management

Quality management system means quality of the business management carried out in a systematic way covering the whole organization. There are management actions on several levels in an organization including the whole organization, its business units or functions, business processes, and individuals and teams. Both strategic management and operational management are needed. Leadership emphasizes managers’ or superiors’ personal and human aspects in conducting their business actions (see figure 2).

Figure 2. Aiming at a world-class performance in leadership. A successful business leader’s primary quality feature is awareness.

Also at the operational employee level tacit knowledge has a crucial importance for the personal performance in carrying out the work. That is additionally emphasized by the fact that nowadays all organizations are knowledge-based businesses, and all workers are knowledge workers because the work is based typically on knowledge, competence, skills, and even wisdom of the workers when they are handling different kinds of data and information in their work, and doing interpretations, judgments, and decisions for producing valuable outputs to the interested parties. Requirements and conditions of the job have been changed from old-fashioned “tailorism” to more human centered as expressed e.g. by O’Toole (USA): “Work implies an activity that produces something of value for other people” and Nishibori (Japan): “Human work includes three elements: creativity (the joy of thinking), physical activity (the joy of physical work), and sociality (the joy of sharing pleasure and pain with colleagues)”

Business leaders are typically generalists and strongly acting individuals with strong organizational positions. They know the right things but are not necessarily interested in right methodologies. Therefore their tacit knowledge is being highlighted in their managing actions. Their strengths especially consist of awareness and self-management (see figure 2).

The most well-known and recognized general model for management is the P (Plan) – D (Do) – C (Check) – A (Act) model according to Deming and Shewhart. This model is also an appreciated tool of quality management. Traditionally PDCA model has been applied principally in the context of explicit business information. Now however the challenge to the business management is to combine explicit and tacit knowledge in making business decisions in businesses (see figure 3).
Figure 3. Managerial actions based on facts from operations and combined with the tacit knowledge of managers. “Ba” is a Japanese concept expressing a collaboratively living environment promoting change of knowledge.

There are different kinds of knowledge-based business operations depending whether the work is done and information and data handled individually or in teams, and whether the work is routine work or requires interpretation/judgment. These different combinations lead to different operational models with particular working models, processes, challenges, and strategies:
- Transaction model or interaction model
- Expert model or collaboration model

Figure 4. Elements of the SECI process for knowledge transformation: socialization – externalization – combination – internalization of the knowledge. Managing a SECI process is a key issue in organizations appreciating intellectual capital.

These situations relate both to explicit and tacit knowledge. It is an important new area of a quality management system to leverage knowledge moving (see figure 4) from individuals to the whole organization and between different actors, and from tacit domain to explicit domain and
also vice versa. This tacit / explicit knowledge transformation is described by so called SECI process.

**Useful application of modern information technology in the context of tacit knowledge**

Although information systems were originally developed for the needs of explicit data and information, the modern ICT solutions may, however, be useful also in the area of tacit knowledge. That is based on the fact that new technology makes possible effective cooperation and collaboration between knowing individuals and collaborating groups even around the world.

Portal is a modern solution for knowledge-content businesses. Portal is a single, Web-based interface into the world of heterogeneous and incompatible information and knowledge sources distributed across the telecommunication network. The key quality management related solution is an organizational portal with quality management applications: “A cutting-edge gateway to quality-related business reality for enhancing quality awareness, improved use of expertise, performance management and interested party confidence.” This kind of portal provides automatic services for quality management to the members of an organization as well as to its partners. Portals use Internet technology, but basically a portal is very different from simple Internet or intranet pages of organizations. Portal has general features that are beneficial for all kinds of knowledge-based activities including:
- A consistent view of the relevant business community
- Information organizing and searching capabilities
- Direct access to knowledge and resources
- Direct links to relative data and knowledge experts
- Individual identity and personalized access to content

![Figure 5. Challenging to enhance the effectiveness and efficiency of the use of knowledge and information](image)

An interesting topic is to enhance the effectiveness and efficiency of the use of knowledge and information via a portal. The biggest challenge for these solutions is the poor use of business related knowledge and information that may appear in many forms (see figure 5). Important
knowledge may be missing. It may be unused because the needed knowledge is not available or accessible when needed or is not in a useful form. It may be used but not appropriately or at opportune time and place, or it may be misused. As one can see, a greater challenge than to stretch the usefulness of explicit knowledge, information and data to its extreme is to bring about a radical improvement of utilization of tacit knowledge. Internet technology makes it possible to create multifarious access interfaces to the business information and knowledge, and related shared services. Especially information security aspects should be emphasized when developing the quality management of information and knowledge.

Modern Web-operated social networking applications based on simple and cheap solutions of disruptive innovations have a wide variety of quality management related uses such as personal management, collaborative learning, carrying out cooperative projects, and supporting networked communities. Their main strengths include customizable group systems that allow many groups to work simultaneously on sharing individual knowledge and to create new mutual knowledge. This may be done with appropriate new tools for projects, calendar, tasks, forums, conferencing, information/knowledge links, chat, reviews, voting, files, instant messages, resource profiles, etc. Designed to ease problems solving with group based working, the solutions make it possible to work in groups, inside and outside the organization. This gives advantages to organizations which have a lot of work groups that have to be in contact with each other around the globe. E.g. a virtual network of quality managers of a corporation or a larger business community may be created on this basis.

**Comprehensive development of quality management through organizational learning**

Organization’s everyday business activities, "Domain of Action", and achieved business performance results depend on the following managerial corner-stones at the operational practical level (see figure 6):
- understanding the issue, i.e. the ideas and principles directing business activities,
- innovativeness of the leadership system, and
- effectiveness and efficiency of management tools.

![Figure 6: The overall business performance development framework of an learning organization includes everyday operations, “Domain of action” and strategic change management, “Domain of change”](image-url)
Quality of management includes effective and efficient practices of planning, control, and continual improvement. Business performance is possible to enhance via two directions. Reactive development is achieved through problem solving based on the facts from achieved performance. More significant improvements are possible if the new business opportunities are taken as the basis of performance development and it is based on existing strengths and competitive advantages of the organization. The reactive method in its backward-looking nature is not effectively oriented to challenges. Real improvements utilize innovations and may bring more added-value to customers and other stakeholders. Creative improvements are possible to carry out through the well established methods of learning organizations (see figure 6). In this way a broad basis of intellectual capital may be utilized.

A change in organizational performance is brought about by improving the key factors of the existing “Domain of Action” (the existing way to understand and run the business). This is arranged through an organization-wide continual improvement and learning, a "Domain of Change" which includes
- Increasing awareness of and sensitivity to new realities
- Changing attitudes and beliefs
- Developing skills and capabilities

The change in business activities is achieved through some kind of “pump effect”. These principles of a learning organization are a challenging basis for the new age of quality management systems and through them one may get realized e.g. ISO 9000 standards and performance excellence models in a creative way.

Remarkable business opportunities and development always start at the level of understanding and personal wills and dreams. Then afterwards the use of practical tools and methodologies, and factual information will be applied more effectively. Organizational development and management are very deeply culture-dependent phenomena. In the western cultures explicit facts-based management practices have been traditionally emphasized. On the contrary in the eastern societies holistic understanding and spiritualism have been prominent. Also western business developers have many possibilities to learn from the eastern cultures.

**Conclusions**

New knowledge-based business conditions have enormous effects and consequences to everything including the behavior of individuals, groups, organizations, corporations, communities, and societies. Quality management is a crucial issue for business competitiveness and may be handled in a professional way also in these changed conditions. One should only have clear and profound understanding of realities of knowledge-issues and professional principles and methodology of the modern quality approach. This is a challenge for quality professionals who are developing business integrated quality solutions for knowledge-content business environments. Agility and maturity are not any alternatives but both are needed in the modern business environments. An advanced business system including integrated knowledge-based quality management system may create a strong foundation also for the business agility.

**References**


Author information

Mr. Juhani Anttila graduated from Helsinki Technical University 1967 (M.Sc. - E. Eng., Telephony and Electronics) 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, IAQ) from 1995.

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

He has been broadly involved with national and international standardization of telecommunications systems, and quality and dependability management and assurance, e.g. since 1980 he has been a member of the international standardization committee ISO TC 176 (standardization for quality management and assurance) and of the corresponding Finnish national committee – taking part in drafting the ISO 9000:1987, 9000:1994, 9000:2000, and the coming 9000:2008 standards. He has been expert of telecommunications and quality/reliability in many national and international projects including some developing countries. 1990-94 he was
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Mr. Anttila was many years from 1970’s to 90’s as board member in the Finnish Society for Quality, now the Excellence Finland, (the Finnish full member of EOQ, European Organization for Quality), 1984-87 President of the Finnish Society for Quality and from 1998 Honorary Member of the Society. Several years he was the responsible expert 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 from Sonera Corporation from the position of Vice President Quality Integration in 2003 Mr. Anttila has been an independent expert – Venture Knowledgist, Quality Integration.

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