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## Organizational learning in developing the integrated quality management

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### Abstract

High quality is organizations' competitive advantage. It is beneficial to base this on professional approach, and basic concepts and definitions with scientific foundation. The necessary main concepts consist of quality, quality management, quality improvement and quality assurance. Organizations' top management is responsible of the quality management decisions and implementations. The present practical situation is fragmented and the implementations are most often based on the instrumental means of the different methodological schools, which is confusing and detrimental to the understanding and usefulness of the concept of quality management. It is not beneficial to build a special system for quality management by only following the requirements of the general standard. This cannot ensure competitive business advantage. In this article, we present an alternative approach that is a natural practical way to realize quality management as the teleological solution, Quality Integration, in which the general and specific quality concepts, principles and methodology are embedded within the normal business management activities. Our Quality Integration is based on the thinking of organizational learning. Its framework covers both running the current business and improving the overall business performance. This model has been used as the thinking framework in practical organizational cases since 1990's. As the business circumstances change constantly, the organization must be constantly ready to renew through both small and radical changes. This change also receives resistance, and the development takes place according to a multi-phase process towards the new integration and requires a proper recognition and decisions. Principles of the organizational learning can help organizations in a consistent way. Evaluation of the overall organizational performance is an important quality management practice and should take into account performance enablers (processes) and also the results obtained thereof. In our approach, the evaluation criteria emphasize organizational learning and integration. The external context of the organization has a crucial role in achieving and developing the business objectives. The organization's strategy can no longer be based on the value chains but on finding ways to alter them radically through value networking. The organization is influenced by the true and all-inclusive reality, which differs from the apparent reality perceived by the senses, and which is only revealed through consciousness. Understanding this reinforces awareness and trust that are important factors also in quality management and quality assurance.

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## 1. Introduction

### 1.1. Aiming at the professional quality and quality management

High quality is an important competitive advantage of all organizations. Professionally, this requires the effective and efficient quality management that is seamlessly integrated into the organization's business system and processes.

The internationally standardized definition (ISO 2015a) of the *quality concept* is well advisable in the professional context, and it also is aligned with the everyday and traditional meaning and valid ontologically (ANTTILA, J., JUSSILA, K. 2017d), too. On this basis, quality means the 'degree to which a set of inherent characteristics of an object fulfils requirements'. In other words this can be said briefly 'perceived fulfillment of the needs and expectations', i.e. quality is always related to something or somebody, the 'object' and

its inherent characteristics, and it is perceived by somebody with certain needs and expectations. There is no quality without an object, nor any object without quality. In this context, the requirements consist of the needs and expectations from those parties who are interested in and dealing with the object. Perception of the object is based on the inherent characteristics of the object.

In the organizational context, quality does not happen by itself or by chance, but it requires consistent work and management activities within the organization's business system and processes. This entity is called *quality management* and formally defined (ISO 2015a) as 'management of the organization with regard to quality'. This definition directly implies the business-integrated quality management, which we briefly call as *quality integration* and understand as the implementation of the general and specific quality concepts, principles and methodology embedded within the normal business management activities. Quality management also includes continual enhancement of the business performance in a systematic way. In the standardized phraseology relates to *quality improvement*, 'part of quality management focused on increasing the ability to fulfil quality requirements' (Ibid.).

In this article, we consider quality management as a part of the organization's business management for excellence (i.e. excellent business performance) and quality improvement as organizational learning to enhance the business performance. Hence, we can apply the profound and far-reaching principles and practices of the *learning organization* (SENGE, P. ET AL. 1995) in striving for the performance excellence (NIST 2011) and competitive advantage (BROWN, S., EISENHARDT, K. 1998) of the organization.

In particular, the integration is intended to avoid the separate 'quality (management) systems' (i.e. lack of integration). Business-separated quality initiatives are artificial, and standards-forced quality approach is absurd and ineffective. In fact, no particular quality management system is needed in practical applications at all, and that even can be harmful to both business and quality.

ISO 9000 standards used earlier the concept 'quality system'. This concept was deleted from the standards already about 20 years ago, because some organizations wrongly understood that the standards require a special system for quality. The new introduced concept was quality management system. Also this has caused a lot of misunderstanding. Quality management system is not a (quality - management) + (system) but it closer means (quality) + (management-system). Hence, it definitely relates to the quality of managing the organization in a systematic way.

According to the broad understanding of the concept quality, which is based on the needs and expectations of all interested parties of the organization, quality integration should deal with managerial activities of all areas of expertise needed by business management. Hence, it also includes information security management, finance management, human resource management, sustainability, social responsibility, innovation management, etc., which are dealt with in many different general management system standards (ANTTILA, J. ET AL. 2012).

In the context of quality integration, we have also used the expression of the 3in1 approach (ANTTILA, J. 2009a), by which we emphasize that that we should integrate three different viewpoints in considering the organization's overall business performance:

1. Management system standards such as ISO 9000, ISO 14000, ISO/IEC 27001, etc.
2. Excellence performance models, for instance Malcolm Baldrige and the EFQM models
3. The practices and essentials of the particular organization's business system

Organizations also need *quality assurance*, which aims at providing confidence among the interested parties that quality requirements will be fulfilled (ISO 2015a). Hence, quality assurance is a quality related communication activity from the organization to the interested parties. It also is a part of quality management.

All organizations should create their quality management approach by themselves. Multifarious sources of information should be used in developing the organization-specific quality integration approach (Figure 1). The different sources give very different and even contradictory guidance for implementing quality management. In addition, those parties are not aware of the specific organization's business mission or visions.

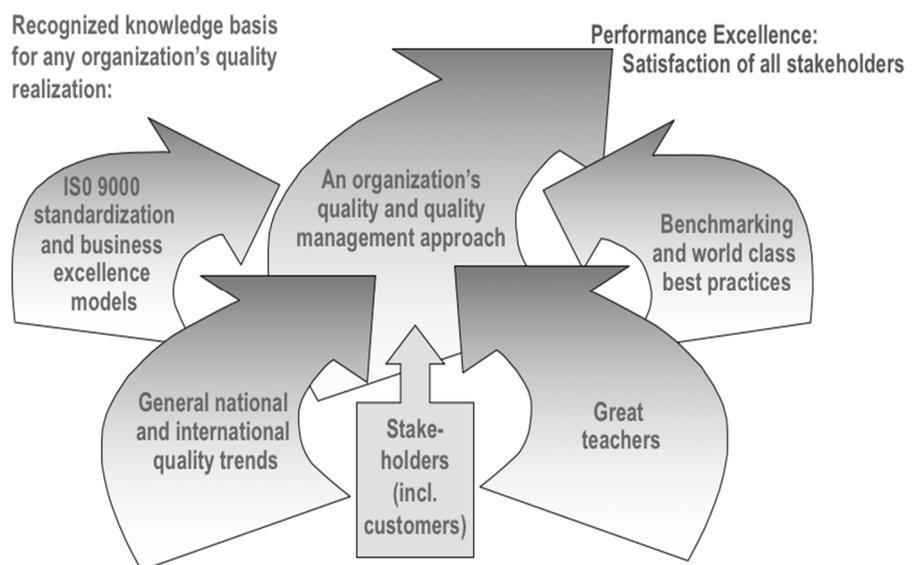


Fig. 1. Developing the organization-specific quality integration approach

Only excellence in the overall business performance can ensure sustained success for organizations, because the fulfillment of the minimum requirements and mediocrity are not sufficient under competitive conditions.

### 1.2. Problems and difficulties in quality management

Harmful or even damaging - but practically quite common - way to implement quality management in organizations is to build a special quality (management) system following the requirements of the ISO 9001 standard. This is harmful to the development of both business and quality, if the quality (management) system is seen as an extra burden and cost. In this case continuous improvement of quality is disturbed when the goal of the development is a special system for quality and its permanent consolidation by certification. This is often done as a separate project under the responsibility of the organization's quality manager and with the use of external consultants. In particular, problems arise because:

- ISO 9001 does not specify any quality management or quality management system, but only sets general quality management requirements, and on the other hand, the ISO 9004 only proposes general guidance for achieving sustained success. Each organization must implement quality management in its entirety with its own insight and means.
- ISO 9001 only presents WHAT topics instead of saying anything about HOW means
- ISO 9001 is very vague and ambiguous (ANTILA, J. JUSSILA, K. 2017c)
- The commitment of the staff, and especially the management, remains weak
- Quality management can never be completed, but must be continually developed. It should be 'always ready and never finished'.
- When the system is built as a separate one, it is difficult to export it to a business when it has not been part of natural business development
- The certificate does not serve the business effectively, it is not more than a marketing argument

The ISO 9001 based certification cannot create competitive advantage of any organization, because ISO 9001 certification does not ensure excellent business or quality performance. There are good and bad certified organizations and also good and bad uncertified organizations. General Certification has also had a negative impact on ISO 9000 standards and standardization, and even there are warnings and comments: 'The worldwide rush by businesses to obtain ISO 9000 certificate as an external sign of quality is to detriment of the primary use of standards.

The almost exclusive use of ISO 9001 as a mere checklist to gain a certificate is a corruption of the core concept of ISO 9000 standards' (ISO CENTRAL OFFICE 1994, PARIS, C. 2016). We have used the expressions 'quality prostitution' and 'certification guillotine' in describing the prevailing situation of the ISO 9001 certifications of the quality (management) systems because of its strong commercialization

and cutting connections to the real customer requirements. This also resembles 'Trojan horse' through which false perceptions have spread to organizations.

Some organizations create their quality management on the basis of the excellence models, which actually are not any quality management models at all, but methods for evaluating the organization's overall performance.

General models have been developed for well-established organizations, which are not suitable for the SMEs and startups and for the modern business environments of the 4<sup>th</sup> industrial revolution, industry 4.0 and smart city (ANTILA, J., JUSSILA, K. 2017a).

Although quality management is conceptually quite clear, its implementations are very fragmented, and the vast majority of its implementations is based on the instrumental means of the different methodological schools, which is confusing and also detrimental to the understanding the concept itself (Table 1).

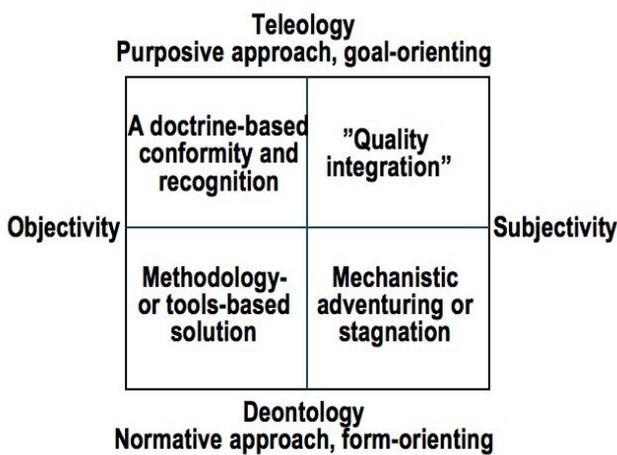
**Table 1.** The fragmented reality of the means of the quality management implementations

<p><b>Professional quality management realizations:</b> The profession has been developing over 100 years and fragmented by using numerous different tools and models for quality management, including:</p> <ul style="list-style-type: none"> <li>- Standard-based approaches, ISO 9000 standards, certification</li> <li>- Performance excellence models (Quality award criteria), Malcolm Baldrige Model, EFQM model</li> <li>- Problem-solving methodology, Kaizen, SixSigma (DMAIC), Lean, 5S, QC Story</li> <li>- The European structured improvement model (EOQ and IAQ) (SARAIVA P. ET AL. 2015)</li> <li>- Business process management / Re-engineering</li> <li>- Human-based approaches, Investors in People (IiP)</li> <li>- Statistical quality/process control, Taguchi methodology</li> <li>- Time-based management (TMB), Agility models</li> <li>- Theory of constraints (TOC)</li> <li>- Hoshin Kanri, Balanced scorecard</li> <li>- ServQual, service quality models</li> <li>- Cost-based methods, poor quality costing, ABC/ABM, TDABC</li> <li>- Customer satisfaction methodologies, Kano model, CSI, QFD, Kansei engineering</li> <li>- Operational excellence</li> <li>- Lean startup practices</li> </ul>
<p><b>Discipline establishment:</b> The discipline is divided into many rather isolated schools of thought that typically originate from the over-emphasized use of tools or models, including:</p> <ul style="list-style-type: none"> <li>- ISO 9000, SixSigma/Lean SixSigma, TQM/TQC and CWQC, and performance excellence</li> </ul>
<p><b>Scientific base:</b> No holistic theoretical scientific foundation:</p> <ul style="list-style-type: none"> <li>- Distinct theories based on statistics, management theories, societal quality loss theory, human-behavior theory, value methodology, economic theories, etc.</li> <li>- Emphasis on formal deontology, objectivity or compliance to requirements</li> </ul>
<p><b>Scope:</b></p> <ul style="list-style-type: none"> <li>- Organizations (processes, activities, products)</li> <li>- Value chain approach</li> </ul>

### 1.3. Quality integration, business-integrated quality management

In order to obtain overall understanding on positioning the different quality management practices (Table 1), we have developed the paradigm mapping (Figure 2) (ANTILA, J., JUSSILA, K. 2017b), which aims at scientific characterization of the different approaches. In all the different cases the same formal definitions of quality and quality management apply.

Objective approaches use generally recognized and well-known models or practices, for instance ISO 9000 standards, performance excellence models, maturity models, SixSigma methodology, lean methodology, etc. ‘Deontological’ solutions aim at applying a method in a right way for the conformity, for instance establishing and maintaining a formal quality management system according to the requirements of the ISO 9001 standard. ‘Teleological’ solutions for instance include ISO 9001 certificate or quality award.



**Fig. 2.** Paradigmatic positioning of the different quality management approaches. Our preferred and the most natural practical solutions to realize quality management are the teleological solutions that strive for the organization-specific quality targets, which we call ‘Quality Integration’.

Every organization has always its own integrated quality management solution - planned or not-planned. However, only the excellent solutions can stand out from the crowd and from each other. This is also important for organizational identity. With formal standard implementations, such as ISO 9001 based system, it is not possible for the organization to distinguish itself from other similar organizations.

Quality integration supports enhancing business performance towards excellence through:

- Increasing key competencies within business leaders, operators, and experts
- Diminishing uncertainties in business activities
- Releasing resources of business leaders from acute problem clearing to proactive business measures
- Avoiding amateurism and trial-and-error approach in business actions
- Gaining respect of professionalism within partners and stakeholders

In this context, excellence means (NIST 2011) excelling, surpassing the relevant references, including:

- Exceeding the organization’s own performance goals and targets, the business as usual
- Succeeding in business performance within own industry branch, for instance, being in average among best competitors
- Evidencing World Class performance regarding benchmarks and best practices also outside of the organization’s own business branch

Quality management should also embody the organizational identity, strengths and innovativeness. In this case, it would also be reasonable to call the quality management approach with the company-specific name. For instance, the quality management approach of an innovation-enhancing company was called ‘IBR, Innovative Business Realization’. Other known examples include:

- IBM: Market Driven Quality (MDQ)
- Xerox: Leadership Through Quality
- ICL: The ICL Way
- Paul Revere: Quality Has Value (QHS)
- HP: HP Invent

If the organization is required to comply with certain standard requirements, for example ISO 9001 and ISO/IEC 27001, the organization can implement their general requirements within its own business system in the innovative way, which also can lead to excellence.

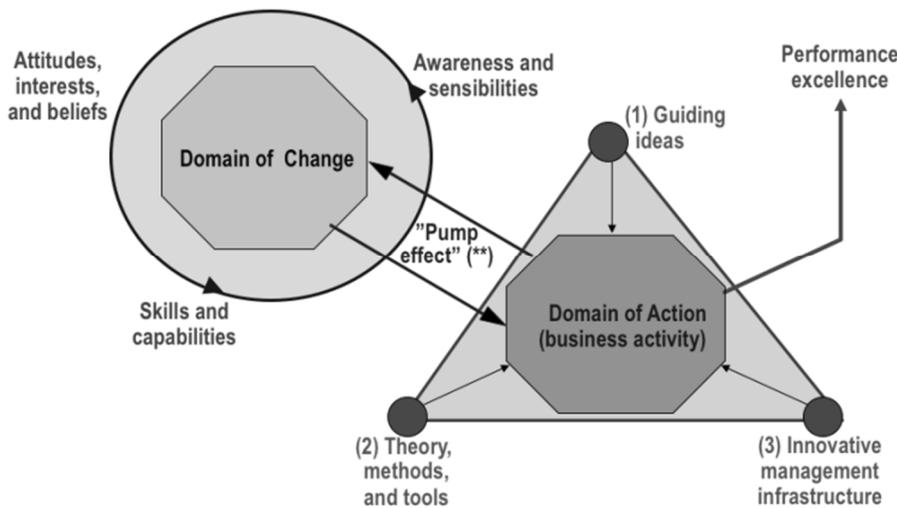
## 2. Organizational learning for the business integrated quality management

### 2.1. The ‘Pump Model’ for developing the comprehensive quality management

The organization's business system, its management, and hence also quality management, must be continuously developed taking into account changes in the internal and external business environments. Quality improvement is an important part of quality management and can innovatively and in a natural way be realized through utilizing the ideas of organizational learning. We have developed the overall business excellence development approach, ‘The Pump Model’ (Figure 3), for the quality integration especially based on Senge’s thinking (SENIGE, P. ET AL. 1995) of organizational learning. This model has been used as the development framework in practical organizational cases, too, since 1990’s.

The ultimate goal of quality management is to ensure controlled and continually improved business performance.

Our Pump Model is used to facilitate the deep understanding and effective development of the quality management as an organization-wide business issue. The model covers both running the current business (‘Domain of Action’) and improving the overall business performance (‘Domain of Change’).



**Fig. 3.** The overall business excellence development model, ‘The Pump Model’, for organizations’ quality integration. This model follows the approach of organizational learning developed by Senge.

The organization has always a particular status with regard to the three cornerstones of the Domain of Action, guiding ideas and principles, managerial tools and methodology, and managerial infrastructure. For improving the situation of the Domain of Action, the Domain of Change gives the pressure to change the way to act for instance through enhancing quality awareness, improving the performance of business processes and practices, and introducing new management measures. What is required for change includes sensibility to new awareness, positive attitudes and beliefs, and training and education for new skills and competences.

## 2.2. Domain of Action

Quality management approach can successfully influence on the operational business performance and results, if it is based on the three elements of the ‘Domain of Action’:

- The ideas and principles directing business activities excellently with regard to quality
- Creativity of the organization-wide leadership
- Effectiveness and efficiency of the management tools

All of these aspects are needed. Guiding principles provide understanding, the tools enable to implement the principles, and the management infrastructure to direct and control the quality measures over the whole organization. These elements always exist in all organizations more or less clearly understood and expressed.

When the organization is in the early stage, its identity is still very immature. This corresponds to the situation with SMEs and startups, and for their development the biggest challenge is learning. Old organizations are at risk of stagnation. The Pump Model enables both learning and renewal.

### Guiding principles

Well-known and recognized references for the management principles with regard to quality have been defined in

the ISO 9000 standard, and the American and European performance excellence models:

ISO 9000 – Quality management principles (ISO 2015a)

1. Customer focus
  2. Leadership
  3. Engagement of people
  4. Process approach
  5. Improvement
  6. Evidence-based decision making
  7. Relationship management
- Malcolm Baldrige - Core values and concepts (NIST 2011)

1. Systems perspective
2. Visionary leadership
3. Customer-focused excellence
4. Organizational and personal learning
5. Valuing people

6. Organizational learning and agility
7. Focus on success
8. Managing for innovation
9. Management by fact
10. Social responsibility
11. Ethics and transparency
12. Delivering value and results

EFQM - Fundamental concepts of excellence (EFQM 2017)

1. Adding value for customers
2. Creating a sustainable future
3. Developing organizational capability
4. Harnessing creativity & innovation
5. Leading with vision, inspiration & integrity
6. Managing with agility
7. Succeeding through the talent people
8. Sustaining outstanding results

All these references may be used in supporting the quality management approach for any organization. Also organization’s business challenges should always be taken into account, and the principles should be creatively presented by the organization’s management.

An example is a small company that decided to utilize all of the abovementioned principles, while at the same time add some creative aspects of their business. Through brainstorming, the company’s management team came to the following ‘fundamental principles for managing the company towards performance excellence’:

1. Centering on customers’ needs and expectations
2. Envisioning the future challenges
3. Valuing employees
4. Managing the organization as a system of responsive and agile business processes
5. Appreciating multiple means for discovering, collaborating, and learning in order to continually enhance organization’s business performance
6. Networking with and valuing partners

7. Anticipating timely changes in the needs and expectations of the market and society

The broad concept of quality includes the aspects of all specialized disciplines that relate to the needs and expectations of the organization's various interested parties. All those disciplines have their own guiding principles that are defined in many different standards etc. As examples we can take information security management and risk management and their related principles of the OECD guidelines (for the security of information systems and networks) (OECD 2002) and the standard ISO/IEC 29100 (for privacy management) (ISO/IEC 2011), and the standard ISO 31000 (risk management) (ISO 2009).

The quality integration means that also the general management principles should be taken into account – or the organizations should at least be interested in them - in the organization's general business management. For this area a lot of different references exists (ANTTILA, J., JUSSILA, K. 2011).

Organization-wide quality management has to be looked at from a broad perspective of how the members of the organization understand the basic ideas of the whole organization and its business. This is already emphasized by the formal definition (ISO 2015a) of the organization concept as a group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives.

Guiding ideas are related with the vision, values, and purpose (mission) of the organization (ISO 2018). Every organization, whether deliberately or not, is always governed according to some principles. The problem with many organizations is that they have not recognized good ideas, which - or even the existing bad ideas - pollute the organizational climate.

Business development is often steered by authoritative leaders who are biased with ignorance, negligence and prejudice to the concept of quality, and instead emphasized the ideology of the free-market economy with aggressive cost-cutting for short-term profits. In particular, narrowly emphasized financial measures and related numerical goals and results in the business practices may take place at the expense of human aspects and holistic, deep and timely recognition of the business fundamentals, including the quality imperatives like customers' satisfaction. This has even led to extreme examples of disastrous business incidents during the recent decades (KUISMA, M., SEPPÄNEN, P. 2015).

The organization can achieve competitive advantage through seeing the guiding ideas not static but as the results of the ongoing mental and spiritual development process with the higher order philosophical depth of the business including (SENGE, P. ET AL. 1998):

- Highlighting the whole of the business through the system thinking and the organization as patterns of interaction
- Recognizing the community nature of the organizational challenges to see the interrelatedness that exists in the organization
- Appreciating the generative power of the language that illuminates the subtle interdependency in

interacting with reality. Hence, the individual minds unify the flow of experiences into the coherent narratives and connect them with other narratives (NONAKA I. ET AL. 2000).

In confronting with the real world, we should admit multiple interpretations and seek those that are the most useful for a particular purpose, knowing that there is no ultimately correct interpretation.

All these aspects embrace quality in a complex way.

### Tools

A wide range of general management methods is available for organizations, as well as also a lot of related training and consulting. However, the different methods may not be compatible or may even be contradictory and rival. Creating, maintaining and developing a suitable tool set is the organization's own strategic responsibility. Well-established managing practices, for instance evaluating and planning methodologies, are useful also for the organizational learning and auditing (ANTTILA, J., JUSSILA, K. 2018).

Practical means, tools, methods, etc., should be used to get the quality approach substantial in practice. These tools are only partly created and maintained by the quality experts. Hence, in addition to direct quality-minded tools, the organization's 'Business excellence tool kit' includes also methodologies to be used for financial, human resource, and risk management, as well as for technology management, acquisitions, marketing, etc. The organization should have a systematic procedure for maintaining and developing the tools. The proved quality-originated tools include:

- Process management model
- Project management model
- Self-assessment procedure
- Process auditing
- Benchmarking procedure
- Business strategy card (a company-dedicated score-card) procedure
- Problem solving and improvement procedures

Tools are required to carry out the business operations as usual, and additionally the tools and methods are needed for organizational learning capabilities like aspiration, reflection, conversation and conceptualization. However, all the tools have only an instrumental value.

Also theories can be considered as tools, particularly in the thinking process. Through developing practical tools and methods, theories are brought to practical tests that in turn leads to the improvement of the theories. We particularly have seen valuable and useful theories in the context of quality integration:

- Critical scientific realism as the solid foundation of the scientific approach and practical realizations (NIINILUOTO, I. 1999)
- Popper's three worlds theory (POPPER, K. 1978) for recognizing the diversity in people's understanding
- Positive psychology for understanding the importance of people's character strengths (PETERSON, C., SELIGMAN, M. 2004)

- Metrology as the theoretical foundation for measurements and evaluations (OIML 2010)
- Etymology for clarifying concepts and terms

It is important that tools are based on theories. Without underlying theory, you get tools which might work or fail in certain situations, but you don't know why. The tool's usefulness may depend on irreproducible aspects of a particular person's skill. With no underlying theory, we may not know the limitations of a tool, or we can even achieve harm if the tool is used inappropriately. In our rush to solve practical problems, we may grab at ready-made solutions that neither address the fundamental causes of a problem, nor stretch our thinking in important new directions.

**Managing infrastructure**

Understanding the infrastructure (ISO 2015b) helps us to define the context of the organization. Infrastructure consists of the organizational system of facilities, equipment and services needed for the operation of an organization. Internal context (ISO/IEC 2012) of the organization is the combination of internal factors and conditions that can effect on the organization's approach to developing and achieving its objectives.

Infrastructure consists of the means through which the organization makes available resources to support people in their work and consists of facilities, equipment and services needed for the operation of the organization. The innovations of the infrastructure support the organizational learning for the necessary changes in the 'social architecture', including changes in the organizational structures, new designs for work processes, new reward systems, information networks, etc.

In order to realize quality management practices in all parts of the company and at all levels of the business system and its management, the organization-wide management structure, or in other words the leadership infrastructure or framework, should be defined and developed. The multipurpose framework model (Figure 4), which consists of four levels of management competence, responsibility, and learning within the corporation, has proved useful.

This model covers the organization's all business functions in a natural and flexible manner. The model can adapt efficiently to various organizational changes as well as various new emphases in the business and in quality thinking, for instance new startups,

which are utilizing new disruptive technologies. This makes it possible to develop quality management in a more sustained manner than being based on the formal organizational structure. This framework model utilizes the most exemplary international ideas and is based on what can be learnt particularly with business partners and by global benchmarking.

Managing elements, which are relevant in all organizations and which also include the necessary quality management activities, are presented in Figure 5.

Also the quality management practices are activities at these managerial levels of the model. For instance, the model can be the foundation for applying the management system standards, including the ISO 9000 and ISO/IEC 27000 standards, and the performance excellence models.

Established managing processes operate according to the PDCA (Plan-Do-Check-Act) model, which also is used in many management related standards. In fact, the PDCA model covers the following three different application areas,

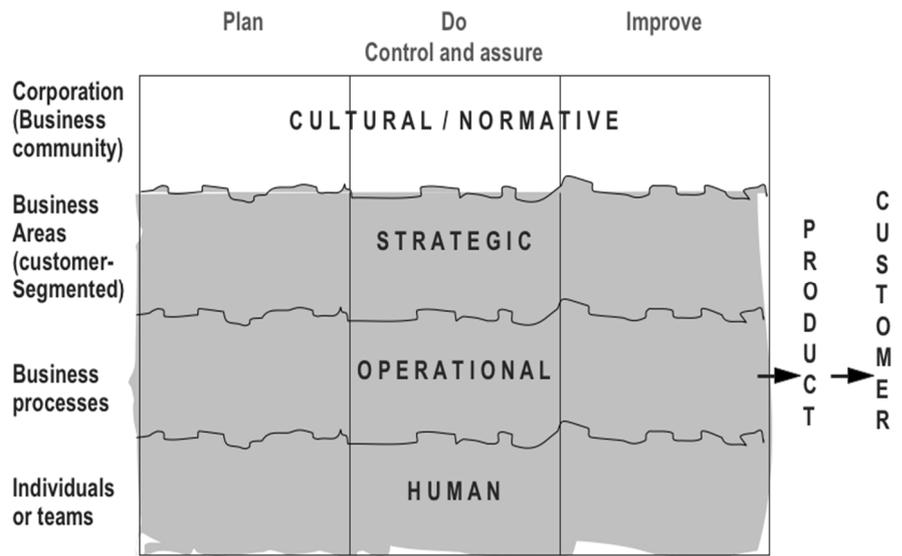


Fig. 4. The quality management realization model and management framework consisting of four levels of competence, responsibility, and learning

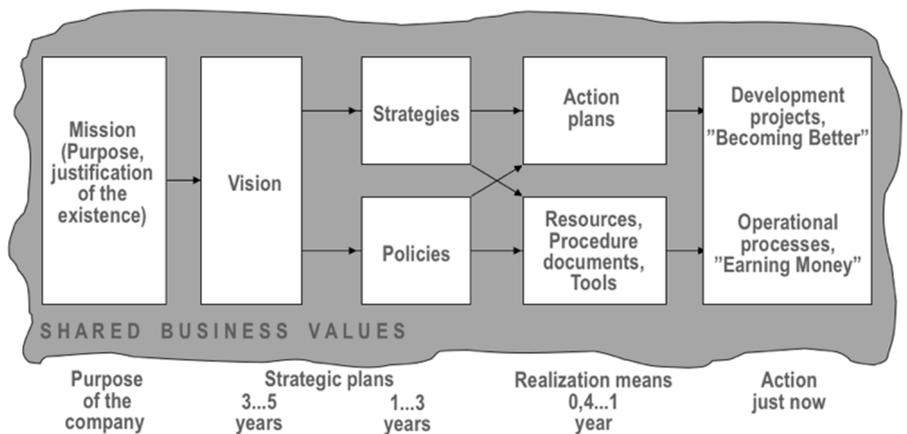


Fig. 5. Managing elements that come into practice in the managing framework of Figure 4

which is why we call it the 'triple PDCA' model:

1. Rational control (operational)
2. Continual rational small step improvement (operational), the 'Kaizen' approach
3. Innovative breakthrough changes (strategic)

The management framework and the triple-PDCA approach also provide organizational arrangements for the organizational learning loops. Single-loop learning is about correcting errors without questioning underlying assumptions, and double-loop learning detects errors, questions underlying assumptions behind the actions and behavior and also learn from these mistakes. The triple-loop learning is operating at a higher level; it develops the organization's ability to learn about learning; it answers to question, 'How do we decide what is right?' (TOSEY, P. ET AL. 2012)

Risk management is an essential part of the quality management, information security management and also other specialized management areas (ISO/IEC 2012). The success of risk management will depend on the effectiveness of the management framework providing the foundations and arrangements that will embed it throughout the organization at all levels (ISO 2009). The framework assists in managing risks effectively through the application of the risk management process at varying levels and within specific contexts of the organization. The framework also ensures that the risk related is used as a basis for decision making and accountability at all relevant organizational levels.

### 2.3. Domain of Change

In order to achieve major changes in the organization's operations, the organization should develop the cornerstones of the Domain of Action (Figure 3) more effective and efficient. In this context the responsible people should look at the business system from outside. The driver of the change is expressed in the Figure 3 by the 'Pump Effect' phenomenon, which originated from the three capabilities of the Domain of Change.

#### *Awareness and sensibilities*

The ideas that revive the organization come from outside the organization. It requires awareness and sensitivity to see how the world shifts. Hence, we become increasingly aware of the world, see the assumptions and practices and begin to imagine alternatives. People perceive the world and its events and phenomena differently, and their thinking processes create different articulations (POPPER, K. 1978). The practices of networking and dialogue improve listening and increase mutual understanding. Today, modern communicating and collaborating means provide unlimited possibilities for effective participation. Deeper patterns of meaning flow through the collective thought and transforms our experience of what is possible. This will increase awareness of the presence or absence of spirit in the organization.

#### *Beliefs, attitudes and interests*

Gradually, new awareness is assimilated into basic shifts in attitudes and beliefs, which represents change at the deepest

level in the organization's culture. Deep beliefs are often inconsistent with espoused values in organizations. The story we tell ourselves over and over again acts as the carrier of culture. Hence, the confidence and trust develop within us. This is simply based on firsthand experience of the power of people living with integrity, openness, commitment and collective intelligence

#### *Skills and capabilities*

Managing business of any organization requires many specific areas of knowledge, including quality management, information security management, etc. The expert knowledge and skills are well known to various specialists but typical business leaders are generalists and do not have so much – or not enough – knowledge or experience that they were able to take into account specialized issues effectively and efficiently with regard to their managerial roles. In addition, top management often is overly emphasizing financial aspects of the business.

The skills and capabilities that particularly are required for the organizational learning consist of (SENGE, P. ET AL. 1995):

- Aspiration: the capacity of individuals, teams, and the whole organizations to orient themselves toward what they truly care about
- Reflection and conversation: the capacity to reflect on deep assumptions and patterns of behavior, both individually and collectively.
- Conceptualization: the capacity to see larger systems and forces at play and to construct public, testable ways of expressing the views. Systems-thinking is vital for these skills, especially together with the reflectiveness and openness fostered by working with mental models.

These skills lead to new awareness because they bring about deep shifts in how we think and interact with one another.

### 3. Transformation to the new integration

As circumstances change constantly, the organization must be constantly ready to renew through both small and radical changes. Environmental and business-internal changes are very closely related to the quality management, too.

Strategic breakthrough management implies a radical discontinuous transformation, which means a change of form, shape or appearance. After Deming (DEMING, W.E. 1993), the Greek word *metanoia* is a more suitable than transformation. It means penitence, repentance and reorientation. Basically, it is a spiritual conversion. Transformations do not happen spontaneously but by decisive actions. In organizations transformations are initiated and managed from the strategic (top management) level of organization. Transition also typically faces the opposition, and thus also resistance, and typically the development continues according towards the new integration according to the seven phases (BUTCHER, D. ET AL. 1997) described in Figure 6.

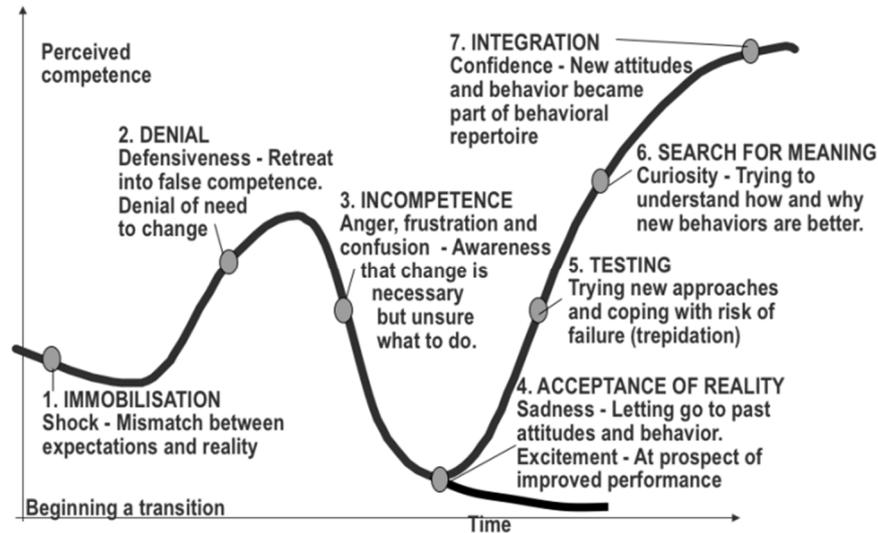


Fig. 6. Transformation with the typical consecutive transition phases

Performance evaluation of the organization is a normal activity incorporated with the changes of the business systems. Evaluation criteria should take into account performance enablers (processes) and also the results obtained with them, and they should emphasize organizational learning and integration (Table 2).

Table 2. Criteria for the evaluation of the overall business performance of the organization as whole (NIST 2011, ANTILA, J. 2009b)

Processes (enablers)	Results
1. Approach: The planned actions, including process plans, measures and deployment of requirements	1. Level: Levels of the achieved results
2. Deployment: Executing the planned approach in practice	2. Trends: Sustainability and the rate of improvement of the performance results over time
3. Learning: Capturing new knowledge, including new innovations	3. Comparisons: Performance relative to appropriate comparisons or benchmarks
4. Integration: Embedding the approach in the organization's strategies and the management of the processes and activities.	4. Integration: Achieving the results in a balanced and comprehensive manner according to organization's strategic objectives and anticipating the future development.

Process-specific evaluations and audits also complement the whole organization's evaluation (ANTILA, J., JUSSILA, K. 2013).

#### 4. The comprehensive reality of the operational environment

The external context of the organization consists of the combination of external factors and conditions that can have an effect on the organization's approach to developing and achieving its objectives (ISO/IEC 2012, ISO 2015b). Also

other phrases such as business environment, organizational environment or ecosystem of an organization are used for the external context. From the quality point of view, the organization's interested parties have the most important role, because the quality concept directly follows their needs and expectations. Interested party (stakeholder) is a person or an organization that can affect, be affected by, or perceive itself to be affected by a decision or activity (ISO 2015a). Hence, the essential questions for the organization's quality management include:

1. Who? (interested party)
2. Why? (value to organization itself)
3. How? (policy + processes)
4. What? (organization's product)
5. Why? (value to the interested party)

The value chains have been used to describe the organization's operation with certain interested parties, which are involved in delivering products to the market. Now, however, the new forces have devastated value chains. The traditional five forces (PORTER, M. 2008) of buyers, suppliers, substitutes, competitors and new entrants are surrounded by three newer forces, digitalization, globalization and deregulation. Hence new competitors may quickly produce new value relationships. The organization's strategy can no longer be based on the value chain but on finding ways to alter it radically through value networking (CHRISTENSEN, C. 1997). The value network is the broader concept than the value chain, and within it the organization identifies and responds to all stakeholders' needs, solves problems, procures input, reacts to competitors, and strives for profit.

Also something still more subtle seems to be present in the organization's learning (SENGE, P. ET AL. 1995) through the 'Domain of Change' and the 'Pump Effect'. This originates from the true and all-inclusive reality, which differs from the apparent reality that can be perceived by the senses and which is only revealed through consciousness. This involves sensibility to listen purposefully to what is needed and to

know what needs to happen. These aspects are involved with awareness and trust that are essential factors in quality management and quality assurance. The quest for the learning organizations is to understand the roots of fragmentation in our ways of thinking and being. The wholeness is real, and fragmentation is due to actions of people.

## 5. Conclusions

The learning organization approach offers a natural business-integrated solution for quality management, which has unlimited possibilities of refinements and innovations, and an experienced alternative to often artificial separate management systems for quality and other specialized responsibilities of management. However, organizational learning can only give a competitive advantage in quality management, if the organization also applies the basic concepts and principles of professional quality work in a broad sense.

The 'art and practice' of learning organizations consist of the 'five disciplines' (SENGE, P. 1990), which in this context is understood as a body of theory and technique and could be put in practice with certain skills and competences:

1. Personal mastery
2. Mental models
3. Shared vision
4. Team learning
5. Systems thinking

The fifth discipline is the central issue also in quality management. It encourages organizations to look at business issues from a holistic perspective, which also is aligned with the approach of quality integration but differs from the quality (management) systems of narrow scope.

Based on the authors' practical experience as highlighted in this article, the most essential measures for ensuring the effective quality management through organizational learning consist of:

- **Integration:** Reinforcing the organization's general management through applying business-appropriate management principles and methodology, and embedding wide-ranging and multidisciplinary professional quality elements within the organization's normal activities of the strategic and operational management
- **Responsiveness:** Being able to adjust quickly to suddenly altered external conditions and to resume the operation without undue delay, and aiming at dynamic and flexible business management
- **Innovation:** Striving continuously for the organization's new business-specific innovative solutions and encouraging various choices for the business integration, even using disruptive solutions. Emphasizing the organization's unique approach instead of only following standard requirements
- **Collaboration:** Communicating and working together with colleagues and appropriate multidisciplinary knowledge communities that appreciate connectivity, interactivity, and shared knowledge and resources

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## 组织学习在发展综合质量管理中的作用

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### 關鍵詞

质量  
质量管理  
质量一体化  
组织学习  
管理体系标准  
组织环境

### 摘要

高品质是组织的竞争优势。以专业方法为基础，以科学为基础的基本概念和定义是有益的。必要的主要概念包括质量，质量管理，质量改进和质量保证。组织的最高管理层负责质量管理决策和实施。目前的实际情况是分散的，实施通常基于不同方法学院的工具手段，这对混淆和损害质量管理概念的理解和有用性是有害的。只按照通用标准的要求建立质量管理专用系统是不利的。这不能确保有竞争力的商业优势。在本文中，我们提出了一种替代方法，它是实现质量管理的一种自然实用方法，即目标解决方案 - 质量整合，其中将普通和特定的质量概念，原则和方法嵌入到正常的业务管理活动中。我们的质量整合是基于组织学习的思想。其框架包括运营当前业务和提高整体业务绩效。自20世纪90年代以来，这种模式已被用作实际组织案例的思考框架。随着商业环境的不断变化，组织必须不断做好准备，通过小而激进的变革进行更新。这种变化也会受到阻力，而且这种变化是根据新的整合过程中的多阶段过程发生的，需要适当的认可和决定。组织学习原则可以以一致的方式帮助组织。对整体组织绩效的评估是一项重要的质量管理实践，应考虑到绩效促成因素（过程）及其获得的结果。在我们的方法中，评估标准强调组织学习和整合。组织的外部环境在实现和发展业务目标方面发挥着至关重要的作用。该组织的战略不再以价值链为基础，而是通过价值网络寻找从根本上改变它们的方法。这个组织受真实而全面包容的现实的影响，它不同于感官所体现的现实现实，而且只有通过意识才能揭示出来。了解这一点增强了认知和信任，这些也是质量管理和质量保证的重要因素。

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