

QUALITY AND KNOWLEDGE MANAGEMENT SYSTEM IN HIGHER EDUCATION INSTITUTIONS

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All types of organisations nowadays face survival premises contained in two postulates: a) high quality performances and b) knowledge and innovations as key resources for achieving expected quality level. After elaborating methods for quality and knowledge management recognised in contemporary literature, paper presents possible model of developing management system which integrate quality and knowledge management with focus on higher education institutions.

Key words: quality management, knowledge management, systems management model of higher education.

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СИСТЕМА МЕНЕДЖМЕНТУ ЯКОСТІ ТА ЗНАНЬ У ВИЩИХ НАВЧАЛЬНИХ ЗАКЛАДАХ

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Усі види організацій сьогодні стикаються з передумовами, що містяться у двох постулатах: а) висока якість виконань; б) знання й інновації як ключові ресурси для досягнення очікуваного рівня якості. Після розроблення методів стосовно менеджменту знаннями та якістю, які визнані у сучасній літературі, у цій роботі представлена можлива модель розвитку системи менеджменту, яка поєднує якість та управління знаннями, акцентуючи увагу на вищих навчальних закладах.

Ключові слова: менеджмент якості, управління знаннями, модель розвитку системи менеджменту вищих навчальних закладів.

1. Quality and Knowledge as globalization issues

Globalisation processes set forth essentially new requirements and functioning concepts before contemporary organizations. All types of organisations, whether profit or non-profit, governmental or non-governmental, manufacturing or service, health, educational or administrative on local, regional and state levels, nowadays face survival premises contained in two postulates:

- accomplishing competitiveness by high quality of products and services and
- knowledge and innovations based economy and organisational development.

The first postulate reflects the requirements of the global market and the other one reflects concepts of responding to these requirements. Terms “quality” and “knowledge” appear as key terms here. One may say that these terms draw significant interest of theoreticians and practitioners in the area of organisational management. In fact, through the philosophy of quality, global processes have brought a number of requirements to contemporary organisations of which they often become aware only when they come to position to place their products and services onto global (European) market. It is especially the characteristic of organisations that function in transition economies (Middle and Eastern Europe, Balkans).

In the 80s, the processes of management standardization in organisations, which gain its legitimacy on the European and world market through the series of standards in the 90s, appear as an instrument of

mastering the complexity of global market demands. Through several reviews (in 2000 and 2008) these standards perfect the rules of organisational functioning and become an instrument of buyers' and consumers' trust in the quality of vendor's products and services.

As the demands of contemporary global market shift from products to environment, people's health and safety, social responsibility, energy efficiency, protection of Earth atmosphere etc., the understanding of the term "quality" which, according to standard definition integrates all outspoken requirements, is also changing. Standard ISO 9000 defines the quality as a level up to which the set of attributive characteristics (characteristics of organisation and all its business elements) fulfils the requirements (requirements of all organisation's stakeholders).

Growing requirements of global market for various aspects of organisational functioning are consistently and rather chaotically followed by more recent and, for organisations, more complex editions of global standards (ISO, EN and others). There are models of Integrated Management Systems (IMS) [1], [2], [3] developed in management theory and practice as a response to this situation. In the late 90s organisations for standardisation became interested in these models with the intention of issuing unique standard for IMS, but nowadays partially defined standards, organisational certification and accreditation procedures, as well as control and allocation of trade marks for products and services are still in force.

In the practice of organisational functioning on the global market, the main precondition is still mastering the number of expressed demands and shiftlessness of theoreticians and practitioners of contemporary management in seeking response to this situation is recognised in the evaluations that „we live in the golden management era“ and yet „theoretical chaos in management“ is on scene [1].

In this situation when neither management theory, through a number of developed models, tools and techniques, nor management practice, through a numerous standards and guidelines do not ensure useful answers to growing demands, entrepreneurs and managers in organisations are compelled to turn to themselves, their own knowledge and skills, abilities and competences in order to maintain the competitiveness of their organisations on the global market by constant quality improvement.

For those reasons there are knowledge and innovations management models in organisations appearing at the beginning of the new millennium. Knowledge becomes the formula for success of not only organisations on local level but also national economies of states and regions.

Since the organisations are often unaware of their staff knowledge and knowledge contained in their own resources, in knowledge management procedures the focus is on unveiling so-called hidden (tacit) knowledge into forms of its practical implementation for the organisational benefit. Slightly practically unaffirmed models of Integrated Management Systems may be efficiently used in practice with the purpose of achieving this goal, what is the key thesis of this paper. Thereby, rather general and framework concept of Integrated Management Systems-IMS would evolve into clearer structure "Quality and Knowledge Management System" – QKnMS.

Practical use of this approach is rather clear because the term „quality“ contains all requirements for organisational functioning from which it formulates its goals, and the term „knowledge“ contains just those organisational capabilities that enable respond to requirements by realising such set goals.

2. Quality and higher education institutions

In the reform processes higher education institutions face the need of functioning by business organisation model through the affirmation of management process with the aim of increasing the success rate expressed through the parameters of effectivity and efficiency. That process probably leads to decreasing the focus of responsible structures to academic and other traditional values of university life.

Higher education organisations could recognise their goals of functioning in the interests of the following social groups:

- STUDENTS, interested in quality of knowledge and educational competencies;
- EMPLOYEES at universities with categories of teaching, research and administrative staff, interested in career advancement satisfaction;
- OWNERS, besides the financial effect, interested also in achieving the social reputation by contributing to the development of higher education;

- SECONDARY SCHOOL POPULATION AND PARENTS interested in continuation of education;
- EMPLOYERS interested in the quality of knowledge and skills of alumni;
- SOCIAL COMMUNITY interested in overall social development through the development and training of human resources, whereby the knowledge based society;

Recognised and identifies interests of stakeholders and its realisation in a balanced manner are surely most important (and only) source of strategic and operational goals of higher education institution functioning.

This clearly indicates the significance and the role of managerial structures, especially in complex organizations such as higher education organizations, where solving organizational and managerial issues demands the use of contemporary knowledge from management and other complementary theory and practice. Achieving the balanced level of all stakeholders' satisfaction (quality) is surely the primary mission of top management, realized within the established consistent end effective QUALITY SYSTEM.

Issues with reference to projecting and establishing the Quality system in organisations are a subject of already numerous international standards and instructions issued by ISO organisations as well as by national standardisation bodies. Besides these basic standards, there is a whole set of standards available for use in specific trades and for special purposes including the area of higher education.

Establishing the effective quality system in higher education institution is also "burdened" with insufficiently clear understanding of quality as a term. The key term in the area of higher education is QUALITY ASSURANCE that should be comprehended in the sense of providing systematic approach to functioning and managing higher education institution that should create a certain level of TRUST that the requirements and needs of stakeholders (quality) shall be realised within the expected level (satisfaction). In terms of higher education system, there are three levels of trust recognised:

1. Trust within the higher education institution (students, employees and management) that the set goals, which originated from their expectations, shall be realised (internal quality assurance),
2. The trust of citizens and social institutions at the state level in meeting their expectations (external quality assurance) and
3. Trust of relevant international institutions and organisations (foreign organisations and higher education institutions, ENQA etc.) that the national higher education system is comparable with international standards and criteria (external quality assurance on national level).

With the aim of obtaining this trust on all levels, there are European Standards and Guidelines for Quality Assurance in the European Higher Education Area – known as ESG) applied; published by European Network of Quality Assurance Agencies (ENQA) [4], represent one of the poles of the Bologna process. The provisions of these standards are more focused on the external quality assurance aspects with the final goal of higher education institution and their study programs accreditation, although they also set requirements for the internal quality assurance process.

Standards allow freedom and autonomy to the universities to select procedures and methods of internal quality assurance, integrating them into their own Quality system designed according to specific needs and scope.

Framework requirements set in this way are comprehensible and easily applicable in the conditions where effective management systems already traditionally exist, just like on reputable European universities. In the conditions of higher education reforms processes in social reforms and transitions, the problem of lacking tradition in universities' management occurs, especially in the aspect of quality management.²

For these reasons the activity of establishing Quality management system according to ISO has proven itself to be useful for higher education institutions in the conditions of transitional social-economic systems. In some countries (Central and Eastern European countries) this way has already been proven as efficient and accepted as good practice. By establishing the Quality management system the mechanisms and tools for controlled measuring and analysing the key effectivity and efficiency performances and

² It should be noted that the lack of knowledge and experiences in the area of management is generally present in societies going through transition from former socialist and essentially central-planning systems to market and entrepreneurship oriented systems in the developed western countries.

starting programs and projects of its continual improvement, i.e. re-engineering are being created. Although ISO 9000 is of generic character and suitable for application in all areas, ISO organisation sometimes publishes special guidelines for application in various areas, with the aim of more efficient implementation. For the implementation in educational processes there are available: IWA 2: Quality management systems – Guidelines for the application of ISO 9001 in education and ISO 19769-1: Information technology - Learning, education and training - Quality management, assurance and metrics.

By establishing the quality system according to ISO 9000, there are conditions created for conducting planned and controlled processes of continual improvements or re-engineering that can be specific for every organisation. In this direction the new standard ISO 9004:2009: Managing for the sustained success of an organization, develops recommendations that affirm the process of organizational learning, with the purpose of providing sustainable development what presumes the implementation of knowledge management processes.

Since the learning process, i.e. knowledge creation, in its highest form, is a process immanent to higher education organisations, one of the assumptions of this paper is that these organisations are most suitable for the development and establishment of integrated Quality and Knowledge management System – QKnMS.

3. QMS design and holistic approach as based concept

As explained in the previous chapter, in its meaning the term “quality” contains integrated approach in organizational functioning. This primarily refers to the aspect of determining mission and vision, strategic and operational goals oriented towards the greater level of realising buyers’ and other stakeholders’ demands directed to organisation. For these reasons, the contemporary management theory and practice intensively deals with models of recognising these demands through effective communication with buyers and stakeholders and its transfer into strategic and operational plan. Since the late 90s the Kaplan – Norton balanced scorecard – BSC model has been intensively in use.

On the other hand, the complex problem of effective product realisation through the complete structure of business processes in a way that provides achievement of defined goals is set before organisations’ management. In this sense the necessity of system approach in designing and establishing appropriate management system, realised with reference to integrative role of quality as Quality Management System (QMS), is recognised.

Basic concepts of designing and establishing QMS are surely recognisable from the series of standards ISO 9000 and are based on Deming principles [5] and on system engineering methodologies. It is possible that the most complete picture of Deming cycle is shown by the structure of organizational processes for sustainable growth recommended in the standard ISO DIS 2004:2009 – Sustainability management [6] figure 1.

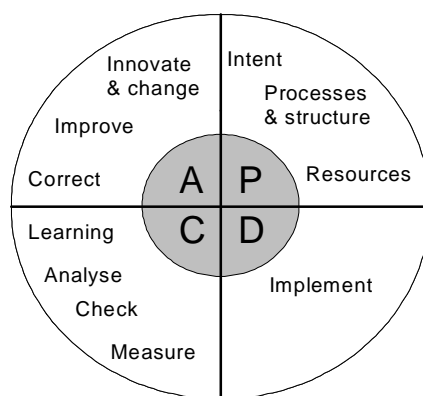


Fig. 1. Organizational processes for sustainability

By affirmation of planning process, this concept gives priority to those quality objectives which constantly change motivated by continued enhancement of the level of stakeholders’ needs and requirements. In the essence, these changes represent the concept of learning organization where the learning process evolves from the earlier conducted processes and activities, thus realizing the organizational progress and growth.

Research of holism in management and organization is present in researches of various authors and in various scientific areas. With the purpose of affirming engineering approach in designing the quality system, we shall point out to two of them.

3.1 (Un)certainty level of organization

As a thermodynamicist, physicist and philosopher, D. Malic defines the term *organization* as:

ORGANISATION IS, BY MIND PROCESS, REALISED UNCERTAINTY

He perceives the organization as a process of creating order in the system, in fact, by learning process. He commented on this simple and ingenious definition, explaining [7]:

“It is required to correctly understand the term of organised situation (organisation) in relation to the term order, orderliness, orderly situation. Orderliness is actually spontaneous organisation in living and non-living nature (organizational structure in organisational systems), whereas the mindful (aware) organisation is related to highly organized mindful (aware) bio-system. As opposed to spontaneous, the mindful organisation is creative. It creates (produces) the “food for the spirit“ (spiritual goods) of longer lasting or permanent value which is, besides the conventional (energy) food, so necessary to the living being for its full life-physical and mindful.

Scientific and art, creative realisations set in motion very complex and subtle living mechanisms, which are manifested in top aspects of aware person’s life – in pleasure, joy of life ... It „feeds“ and „regenerates“ on it, becomes capable of new and greater physical (energetic) and mind (mindful) efforts for its own progress: in energetics, industry, environmental protection, science and art, in creation of material preconditions for further overall progress of human society as an entirety.

As opposed to the environment constraints to the open system – physical, chemical and biological – and the tendency of this system to come to the non-equilibrium stationary state, *mindful system executes the constraints over the environment*, with the purpose of raising the organization potential (level).

Whereas orderliness, i.e. spontaneous organisation of relevant physical, chemical or biological system represents the realization of certainty stipulated by the laws of nature, the **mindful organization represents, by mind process, realized uncertainty.**“

In his work, D. Malic elaborates some mathematic methods of measuring organizational level as a characteristic opposing the entropy as an expression of chaos in the system. Although this kind of perception of organization essentially has more theoretical than practical aspect, it clearly points out to the significance of holistic and system thinking approach in the efforts of providing sustainable growth and development of organisation.

3.2 System thinking & design

Restraining from more detailed etymological analysis of the term “design”, it is very clear, at first sight, that this process is stipulated with and linked to the knowledge required for creating new forms and/or systems. In practical conditions, holistic concept is realized through the processes of designing and projecting the Quality system according to principles and methods developed in the systems theory and lately in the Systems thinking theory. Illustration of the theoretical concept is shown in Figure 2. [8], points out to the necessity of existence and function of certain business processes in the organizational system, whose effective integration can be achieved through the system designing process.

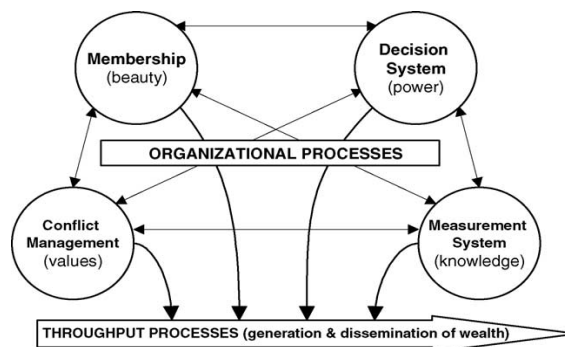


Fig. 2 Organizational processes

Contemporary publications on organization and management theory emphasise the design approach to management systems, as it is common in technical systems. It is considered that the best way to learn a system is to design it.

The design methodology requires that designers:

- learn how to use what they already know,
- learn how to realize what they do not know, and
- learn how to learn what they need to know.

Finally, producing a design requires an awareness of how activities of one part of a system affect and are affected by other parts. This awareness requires understanding the nature of interactions among the parts.

Regardless of the system kind, type and size, two main principles originate from the system thinking & design approach.

1. The most important factor for system success is not partial success of each element (how each element plays its role), but good and successful interaction.

2. Each partial measurement of success can lead to a wrong impression. Correct understanding and leading to success is possible only by monitoring carefully selected group of measurements and their mutual correlations [1].

These principles originate from basic features of all systems. Namely, systems can have some characteristics that none of their elements has, and exactly these one can be of major influence to total effect.³ Basic problems in creating efficient and effective system are unpredictable trends, which result from system elements mutual interaction. These interactions can be contra productive and unacceptably directed. Therefore, main task for organizational system designer and manager would be to plan and lead interaction of system's elements. For that purpose, it is necessary to establish processes as MEASUREMENT, ANALISYS and IMPROVEMENT with methods for measuring and researching features of system elements and features of system as whole.

Thinking over measurements can often lead to better understanding of aims, structure and processes of system. Recent qualitology and qualimetry literature gives contribution to better understanding existing confusion in system thinking processes [9].

4. Key knowledge management concepts

Contemporary knowledge management literature affirms some of key concepts and issues on theoretical (etymological) level as well as on development of practical methods and tools for implementing in organizations. Concept on Figure 3. [10] presents knowledge creation through the level of understanding considered problem (relations, patterns, principles).

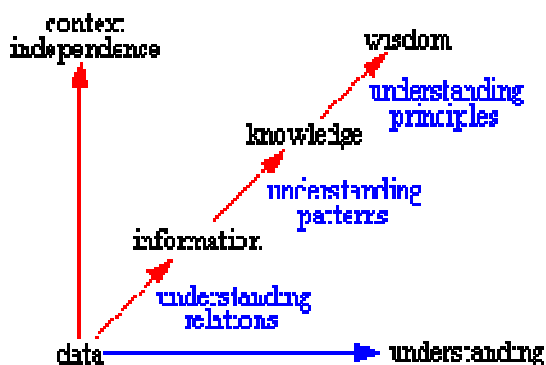


Fig. 3. The main relations of knowledge

³ One of restaurant's features can be "excellent service". That is integral feature that makes system recognizable. Although there are employees who differently care about quality of service, only by their joint efforts and mutual interaction this feature can be achieved.

Emphasising the significance of “understanding”, the author of this scheme stresses: “a collection of data is not information, a collection of information is not knowledge, a collection of knowledge is not wisdom and a collection of wisdom is not truth”. To put in other words, collecting data, information and knowledge has to be integrated through learning process in order to achieve understanding, wisdom and truth.

Figure 5. [11] illustrates the example of practical implementation in achieving professional competence in learning processes and systems.

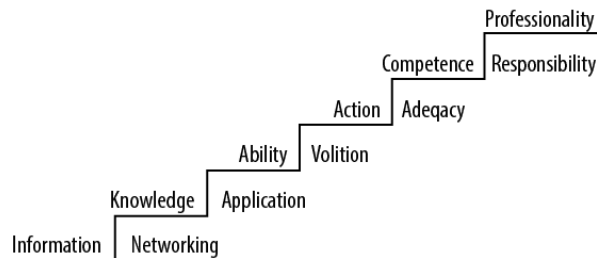


Fig. 5. Steps to Professional competence

The main prerequisites for achieving Professional competence are:

- creating knowledge by learning through networking and finding right information,
- achieving ability through application of learned knowledge,
- meeting competence by motivation and volition for action in accordance with proper standards and
- becoming professional by social responsibility in functioning of organization.

Well known Nonaka’s concept recognises creation of knowledge in the interaction of individuals or groups through the processes of externalization, internalization, socialization and combination (see fig. 4.) [12]. All these processes can be referred to as learning processes realised by different learning methods.

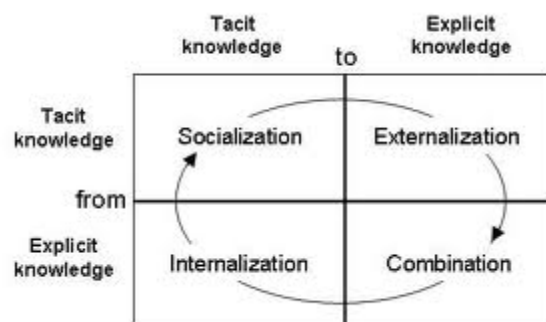


Fig. 4. Nonaka’s model of knowledge creation

Practical implementation of these concepts in knowledge creation and management in organisations, demands its more concrete interpretation and implementation in specific organisational models and processes.

Nonaka’s four models of knowledge conversion author explains in next examples:

1. Socialization converts tacit to tacit knowledge where a new member of a work group acquires the tacit knowledge possessed by other group members through dialogue, observation or cooperative working.
2. Externalization converts tacit to explicit knowledge where an individual is able to make their tacit knowledge explicit, for example through a process of communication and dialogue with others.
3. Combination converts explicit to explicit knowledge by linking together of discrete bodies of knowledge, to create a more complex body of knowledge.
4. Internalization converts explicit to tacit knowledge where an individual converts explicit knowledge, through applying it to their work tasks.

4.1 Key of the system understanding

Practical implementation of aforementioned and other theoretical knowledge management concepts in organization, require certain and properly designed management system capable of enabling and support learning (understanding) processes. But, due to various reasons (psychological, political, etc.) people working in organizations, especially managers, often have counterproductive behaviours in supporting learning processes and fully understanding system.

As a result of designing and implementation of management system, there is a certain structure and shape of documentation appearing, one that describes the processes, resources and the way of system functioning. As a rule, the documentation has regulatory role, such as those of legal system on the level of social community.

In practical conditions of organisational functioning, the constant problem is the level of adoption and implementation of regulatory working and behavioural procedures. So, there is a problem with learning and with the level of understanding the system by internal and external stakeholders. The following quotation illustrates seriousness and essential causes of this problem in social (collective) behaviour.

“Christ blamed legislators for assuming ownership over the “Key of understanding“ and not using it: “They have transferred their knowledge into the law, but not into life. They have not entered themselves thus harming those who wanted to enter“, said Son of God and Man.” [13] Author further concludes, from this quotation of Holy Bible that the “Key of understanding“ is a special key, it locks nothing, only unlocks. Unlocks to enter, not to exit; to understand, not to forget. Key of understanding is not a key for oneself as it is for the others: “One opens the door for the others towards something one has already reached (learned – understood) “.

This philosophic interpretation of the problem of law implementation as well as implementation of internal regulations within the organization, is constantly in the focus of theoreticians and practitioners of organization and management. The latest knowledge management concepts in organisations and researches on appropriate organisation models of learning organisation significantly contribute to finding the “Key of understanding“ (see figure 3.).

In efforts to finding the “Key of understanding“, designers and managers of organizational systems have available management methods which are immanent to the so-called *social management model* which appeared in the 80s of last century, and nowadays it undergoes intensive development in theory and practice of management.

According to this model, organization is observed as associated group of people working together on realizing individual, as well as common objectives. Nowadays' informatics era demands the level of *organizational intelligence* which provides quick reaction to changes, what is possible to realize only in social management model. Thereat, leaders have the mission to manage objectives, structure and processes in the organization, in the way that anyone can use the intelligence independently in enhancing the performances of the organization and harmonize them with requirements of stakeholders and the entire society. In this way, the social management model affirms the humane aspects of organizational functioning, what is also placed as a top interest topic of contemporary management theory.

Explaining critical issues for management of knowledge resources (MKR) F. Ricceri [14] stresses importance of holistic (systems) approach. “Some organizations have responded to increasing importance of MKR for organizational performance by organizing themselves in matrix structures in order to foster knowledge flows and innovation and enhance value creation. Other organizations have responded by seeking to manage their KR via the application of information technology. In these and other cases, the organizations are responding to major changes in their external environment by using techniques and tools that belong to the first wave of knowledge management. These organizations are attempting to manage KR, but not in a holistic way and, therefore, their implementation of MKR may be unsatisfactory. Because MKR is central to the make-up of organizations it cannot be separated out and acted upon in the way that a single business process or management system can be. The integration of MKR to the all the managerial processes of the organization is of critical importance.”

5. Model of Quality and Knowledge Management System - QKnMS

Previous discussions point out to the fact that the implementation of quality system in the organization, due to its complexity, demands system approach along with application of scientific management principle, system engineering techniques and knowledge management, with the purpose of designing own system based on own specific needs and needs of identified stakeholders, using knowledge and competences of own staff, i.e. the availability of outsourced consultants' knowledge. Indisputable is the fact that the people, i.e. intellectual capital within the organization is crucial resource for establishing effective Quality system. With reference to that, one of the quality theory gurus, Philip Crosby, said: **“Quality is free, but it's not a gift”**, what clearly points out to the significance of learning, as well as, adopting new techniques and corporate behaviour of all employees in the processes of constant changes towards the improvement of quality performances.

Integrating the knowledge management concepts (Chapter 4.) into the process of designing the adequate management structure u (Chapter 3.), it is possible to create the integrated management system of organisation with the focus on quality and knowledge (QKnMS model), illustrated on the Figure 6. With this approach in designing and implementation of the management system, quality and knowledge, as basic postulates of the organisational functioning in terms of globalisation, are in the focus, as explained in chapter 1. Model also indicates quality management processes in which is common to implement adequate knowledge management processes. Mutual design of these processes implies synergetic effect and assures recognisable implementation of learning and knowledge processes in organization in well-known and standardized structure of quality management system. As a result of such design process there is a specific integrated structure named Quality and Knowledge Management System (QKnMS).

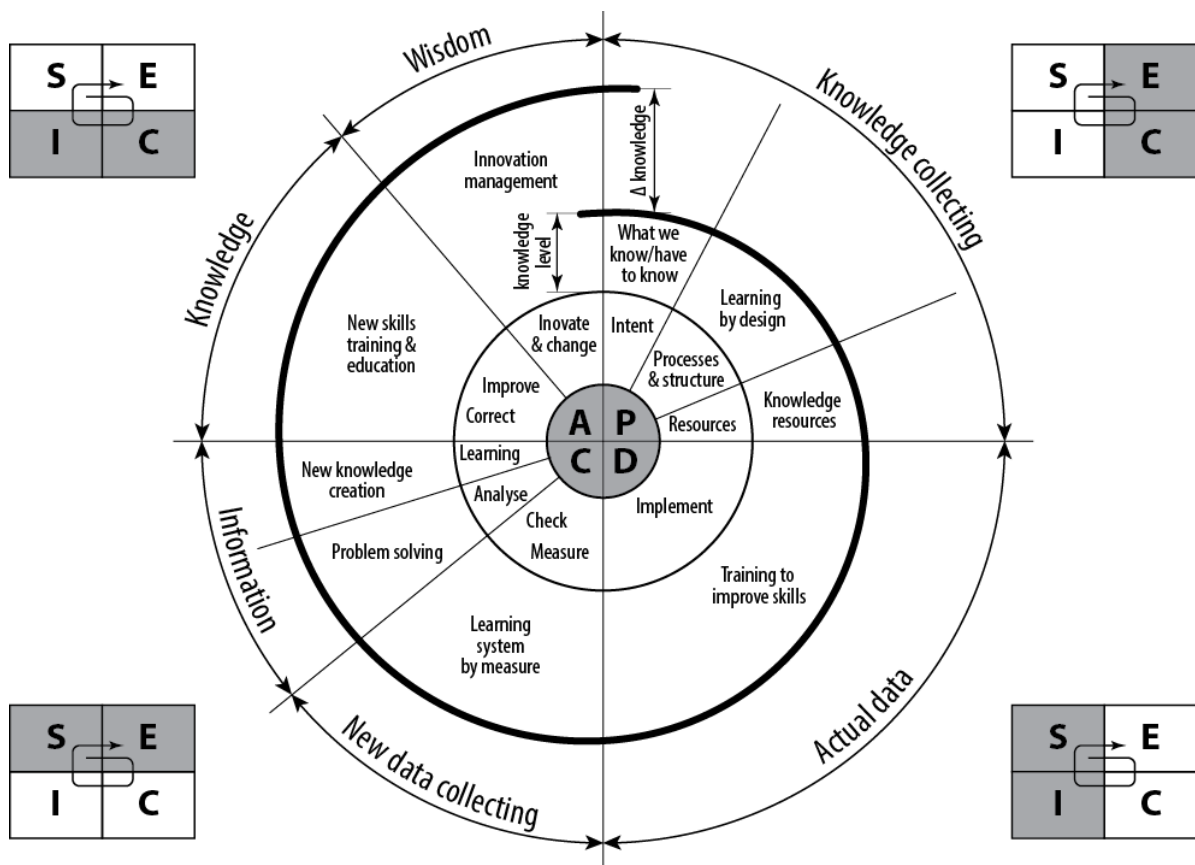


Fig. 5. Architect structure of Quality and Knowledge Management System - QKnMS

These structure clearly indicates organizational processes in which is suitable to implement specific knowledge management technologies such as knowledge discovery, knowledge capture, knowledge sharing, knowledge codifying, knowledge application etc. Within these knowledge management

technologies it is possible to more clearly identify adequate learning (knowledge creation) processes from SECI model.

Intent is the first group of these processes, in which the standard methods of establishing and disseminating organization mission and vision and planning strategic and operational goals are recognized. The significance of planning based on the learning process with outcome of finding “Key of understanding“ (see 4.1) is emphasized in this group of processes. Misunderstandings in this process lead towards increasing probability of failing to fulfil objectives, mission and vision of the organization. Lately, the Balanced scorecard (BSC), has been utilized as suitable management technique for this purpose.

In “P” part of Deming’s cycle marked with **Processes & structure** there are recommendations for the implementation of designer approach to learning and creating management systems recognized (see 3.2). The base of these processes is recognition or design of the organisation process model and identification of technical and technological basics required for the realisation of production program. There are various approaches developed for this purpose in the management theory, supported by appropriate software applications for mapping processes and systems. Contemporary scientific disciplines called “Systems architecting & design”, “Systems engineering”, “Enterprise architecting” e.g., originate from developing these approaches and designer concepts.

In “P” part of Deming’s cycle marked with **Resources**, it is obligatory for organization to manage not only physical type of resources, but to implement methods for managing so-called intangible (intellectual) resources. For these purposes there are many tools and methods developed in contemporary knowledge management theory and practice for organizational as well as for national (state) level.

In “D” part of Deming’s cycle, in **Implementation** processes, there are throughput processes realized, with the main goal to generate & disseminate wealth (see fig. 2). During the realization of these processes, the issue of key importance is establishing such relations which motivate participants of work processes to actively exchange experiences and lessons learned. By establishing adequate relations in the „membership“ process structure (see fig. 2) based on principles of contemporary Knowledge management and social management models (see chapter 4.), there are conditions created for faster rotation of the Nonaka’s cycle, thus realising more intensive learning and knowledge creation within the organisation.

Part “C” of Deming’s cycle fully consists of learning processes. Starting from **measurement** and **check**, through **analysis**, up to **learning**, these processes fully correspond to understanding process on data path, via information and knowledge to wisdom (see fig.3). Standard system monitoring processes belong to this group, such as: audits, evaluations (internal and external), benchmarking, certification, accreditation and other. Here is very important to focus on measuring processes’ right characteristics, especially those which shows system functioning as a whole, as it is explained in chapter 3.2.

Part “A” of Deming’s cycle begins with **corrective and preventive** actions, processes which appear after indicating existence of non-conformities in the business processes, i.e. after spotting negative trends in the analyses process. By its nature, these processes belong to problem solving concepts which is essentially based on organisation learning from its own mistakes and spotted weaknesses. Managing non-conformities, corrective and preventive actions, as well as analysis of its influence on realising set objectives is one of the key management mechanisms, emphasized by all management standards. At the same time, it is effective mechanism for constant learning, growth and sustainable development of organization.

At the end of Deming’s cycle in part “A” there are processes of **innovation and change**. Management system designed in accordance with relevant management standards mainly supports continual improvements in organization. For radical improvement during reengineering or breakthrough processes, organization has to have its own capacity in terms of lesson learned from previous period of functioning. In other words, organization should have the wisdom (see fig. 3) with capacity to understand core principles of future business. Only on fully understood principles of its functioning, organization could expect innovation processes.

Finally, all previous mentioned processes from Deming’s cycle have their specific tools or mechanisms for “by mind process realization of uncertainty” (see 3.1) or increasing level of order in

organization (quality). On that way organization assures prerequisite for creating sustainable growth and development.

6. Conclusion

The main conclusion of this paper is that existing knowledge and experience in management theory and related disciplines enables to create model of management system focused on managing quality as set of demands from all stakeholders on one side, and knowledge as the core organization's resource for responding to these demands. General architecture of QKnMS model presented in this paper is based on principles:

- holistic approach in QKnMS designing based on system thinking, architecting and engineering,
- system understanding based on measurement and analysing (learning) of core set of system characteristics and features,
- sustainable system development by mind process realization of system uncertainty and
- lifelong learning system by achieving higher level of knowledge and wisdom.

For realisation and proper functioning of QKnMS it is suitable so-called *social management model* by which organization is observed as associated group of people working together on realizing individual, as well as common objectives, creating and using *organizational intelligence*.

Based on previous considerations, there are natural principles of contemporary university and higher education institutions functioning, that could be additionally emphasise and suggest:

- Organisation model should be immanent to the *learning organization* applying familiar models of knowledge management with the aim of providing support to the more efficient (faster) movement of "Deming cycle";
- University managerial structure should function by *the social management model* with the aim of "releasing" all individuals' (students, teachers, supporting people), groups' (cathedra, departments, faculties) goals and common aims of university growth and development;
- In the procedures of management standardisation, the experience of transitional societies indicates that the management system (QKnMS) should be designed and internal audited by ISO 9000 standards and external evaluation and accreditation should be conducted by ESG.

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