

The Role of Knowledge Management in Developing Quality Culture

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Abstract: The study reveals the connecting points, where the elements of knowledge management system as part of the corporate processes (studiously the quality systems) play an important role in the successful operation of the company. The characteristic features of quality culture are in focus, of which support is put in parallel with the characteristic features of the learning organisation's culture phrased as a precondition of knowledge management system. With this comparison, the author guarantees the understanding that by solving quality problems and developing quality culture with supporting the elements of knowledge management system will contribute to reaching corporate success and strategic goals.

Keywords: knowledge management; organizational culture; learning organization; quality culture; TQM

1 Introduction

Knowledge management, as a young research field is still fighting its battles nowadays to reach its reason for existence. However, several studies (in theory and in practice as well) justify its contribution to the successful operation of the corporation, but the presence of this way of thinking is not natural in the every day life of corporations. Developing a knowledge management system is a challenging task nowadays for company managers. However, more and more people realize its significance and its positive economic results – which is based on the proper evaluation and management of knowledge, the human capital –, the actual

development is still to come [6; 10]. Operating the knowledge management system is a question of approach and way of thinking, it does not require a separate corporate unit or responsible staff, and it only requires the development of a proper culture and the integration of knowledge into everyday processes. The demand (requirement) of knowledge sharing is present more stressfully among the goals of the organisation, but as we know, the pressure can have results only in the short-run. Taking this requirement, from a professional aspect, into consideration, we can state that knowledge sharing cannot be realized under such workplace conditions, where corporate culture is working against the development of a trustful atmosphere supporting knowledge sharing [22]. The research results – based on recent inland practice – show that in more cases the demand for integrating knowledge management’s way of thinking into every day practice appears on strategic level, but this can only be observed in isolated solutions in reality. We cannot mention any domestic organisation, where the base of its operation would be a well-developed system or would contribute totally to reach the strategic goals. This means that although the number of organisations increases, where their requirement (at least on strategic level) is phrased, but still there is a lot to be done by us, the knowledge “evangelists”. In order to accept, to get to know and to apply the logic of knowledge management, its way of thinking, its models and their application we need to do a lot on a daily base [21; 23].

This battle for acknowledging the reason for its existence makes us remember the period when quality management and the development of quality system was fighting their professional battles.

Similar to the hard times that the demand for developing quality systems had to live through some 10 years ago, made we think about what solutions supporting mutually each other can be mentioned as argument in connection with the role of the two systems, which make the connection obvious with regard to corporate success.

Although the emphasized status of quality questions, the role of quality in corporate operation cannot be questioned nowadays, in several cases we can still see formal solutions, which do not help in solving problems regarding quality. The results of a lot of former researches highlight connections between knowledge management and quality management from different viewpoints (in theory and in practice as well). These connections are confirmed in service sector, in libraries, in higher education and in companies as well [32; 27; 19; 17; 12; 8; 4; 2; 1]. Some of the most important thoughts will be presented in the followings, which support the solution of quality problems in organisations from the side of knowledge management and also the layman reader can notice the tight relationship and cooperation possibility between the two systems. In order to adapt this train of thoughts in practice, we should not forget that the top management of organisations play a key role in the success of developing the systems and operating them [20; 25].

The Association for Excellence Public Company, in Hungary – Szövetség Kiválóságért Közhasznú Egyesület – [31] in a 2005-study revealed several problems, which can be traced back to the deficiencies of knowledge management in connection with quality problems. The research, which involved 27 companies, identified the following problems:

- repeated similar mistakes (costs),
- duplicated carrying out of tasks (previous projects, their results are not known),
- lack of information (e.g.: customer service),
- lack of sharing inner good ideas, best practices,
- weak link (1-2 people have the knowledge/information only),
- integration of gained knowledge is slow or missing (slow product development, market competitor overtakes),
- information/knowledge sources cannot be reached easily (frustrated worker).

The results of the research show that among the problems influencing quality work in several cases there were problems referring to knowledge, knowledge share and knowledge management. In order to prove the above mentioned tight relationship between knowledge management and quality systems, some basic concepts and models have to be introduced.

2 Material and Methods

2.1 Briefly about Knowledge Management

Nowadays changes are increasing much faster than ever before. These changes go hand in hand with overvaluing knowledge, as a production factor. Parallel to overvaluing knowledge, the speed of its term of limit increases as well. Therefore, the task of management is to ensure substitution and care properly about the maintenance of values. The bigger value novelty-developing knowledge has, the more difficult it is to obtain, the sooner it can fall into disuse and the more hidden it is, the bigger its significance is in order to maintain competitive operation. To integrate, to manage and to develop this useful personal (hidden/tacit) knowledge can happen only with the tools and methods of knowledge management [5].

The history of knowledge management (KM) dates back to the years of 1980s. The top managers of companies have already been talking about it since 1990

when they were forced to rethink their knowledge about management and business operation. The concept of knowledge management entered common knowledge in 1991, due to an article, which was published in Fortune magazine. This article was written by Tom Stewart, and the title was Brainpower [30]. After some years it was already called the next big challenge following BPR and TQ.

Several definitions of knowledge management have appeared since the years of 1990, and its concept was phrased in different ways, which was formed on one hand by knowledge perception and on the other hand by the idea about how to manage knowledge. According to Sándori [28], Fehér [13], Davenport and Prusak, [9] knowledge management is the effective connection between those who know something and those who want to know something. Some people say it is quite a trendy phenomenon, while others think that with the help of it, organisations are able to react to processes happening in the present and they are able to make the necessary steps by using the knowledge material of the past and by relying on analyses made in connection with the future. Not only the effectiveness and the global competitiveness of organisations can improve by using knowledge management, but also the given country can make profit out of it by the organisation. The Work Committee of Knowledge Management at the Hungarian Academy Of Sciences defined the content of knowledge management by consensus the following way: knowledge management (KM) is a process (management subsystem) and culture, in which disclosing, gathering, creating, recording, keeping, transferring and continuously increasing knowledge capital is managed in an integrated way and supported by information technology. Its aim is to increase the production of added value of the organisation and to enlarge its innovation potentials; its key concept is synergy [24].

The significance and importance of KM is approved by more and more companies and the research of the years 2000 show that the four-fifth of the European organisations considers it as strategic tool. At present, managers do not think of knowledge management as a technique, but rather they concentrate on knowledge as a key-resource. Managing knowledge has become a tool for increasing corporate competitiveness nowadays by managing knowledge consciously and systematically.

As a general summary, we can conclude that knowledge management wants to find the answer for questions, who, when, where and in what form needs knowledge. The role of knowledge management is to ensure the competitiveness of the company in the new, knowledge-based economy [5].

2.1.1 The Focuses of Knowledge Management

From the various definitions of knowledge management, from a practical point of view there are two basic approaches known: the human-centred and the informatics-centred. From the two theories it is the human-based direction, which creates the base of my thinking as primarily this has reason for existence from the

point of view of the quality systems discussed in the introduction. Although in the followings, the previously mentioned two focuses will be presented briefly, which are dominant in the process of developing knowledge management, emphasizing that IT is an important precondition formed technical point of view, while it is impossible to operate successfully even a developed system without a trustful culture.

Figure 1 shows the position of knowledge management on the curve depicting management fashion-wave. From the figure it can be seen that from the aspect of maturity, the quality systems have reached the much more accepted and stabilized phase.

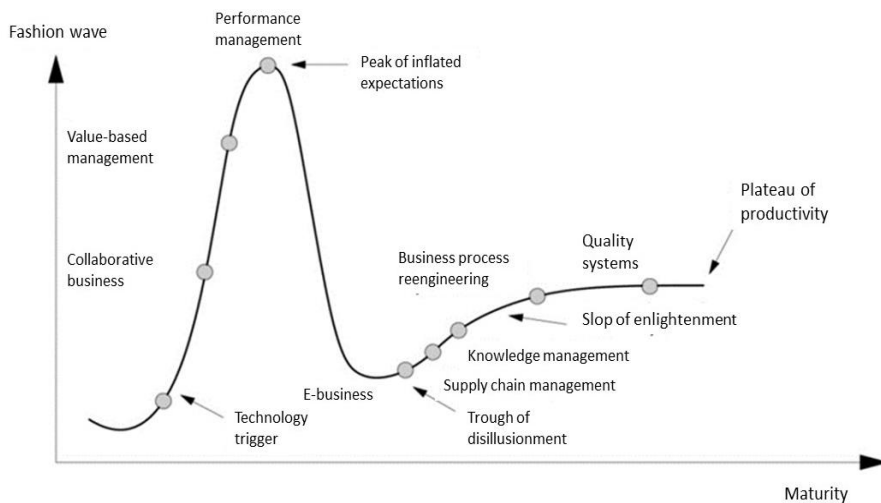


Figure 1
Management fashion [18]

2.1.2 IT as One Precondition for Building KMS

The debate between researchers and practical professionals about the role of technological solutions is the same age as knowledge management as a management tool's coming to the front. Even the most famous researchers have different opinions. Those who belong to the first group represent the opinion that states the almightiness of IT, while the other group does not argue with the necessity of its existence, but does not regard it to be the only reason for success. According to the opinion of Bögel [7] knowledge management could become popular because technological development made a more effective knowledge management possible. However, Dougherty [11] completely refused the role of technological solutions. The truth is somewhere between the two. According to our present judgment of values IT is necessary, but not an ample precondition [14]. The operation of a well-structured, logically built and reasoned IT system

can be phrased as the background support of knowledge management systems. The main aim of informational and communicational technologies in the field of knowledge sharing is to connect the concerned parties.

2.1.3 Cultural Characteristics Ensuring the Operation of KM

Neither the corporate structure, nor technological solutions provide value themselves or an effective knowledge management system. The organisation is made up of people, knowledge is inside people, they create it and use it; therefore, the role of human resources has to be handled as a high priority. The development of a proper corporate culture is necessary so that the workers can operate the organisation the way their management expects them too and the interest of the company requires. The proper corporate culture in this case means the willingness to knowledge share, the use of others' knowledge and also the cooperation developing from the common knowledge of the organisation.

The guru of corporate culture, Hofstede and his fellow workers [16] compared culture to the software of the brain. They developed the definition further, according to which, culture is the social programming of the brain. It differentiates the members of a group from each other.

If in an organisation the culture is not the proper one from the view of knowledge management, then the workers there can have a negative approach to certain processes of knowledge management. This affects mainly knowledge share, which has to be an activity of top priority. If the workers feel that they are not supported in knowledge share, then they keep their precious (tacit) knowledge, which cannot be documented and if they leave the company, they take this knowledge with them.

2.1.4 The Reason for Existence of a Learning Organisation - Senge Model

The aim of the operation of a learning organisation and a knowledge management system is to mobilize the divided or hidden knowledge in the company through organisational groups. With this it will be possible to react to market demands and to the steps of competitors faster and in a more flexible way. As a result of it better quality can be produced by better planning and by more effective work, and finally the innovation skills of the company will increase.

The implementation of criteria of a learning organization means the requirements of a knowledge management system. In this case, organizational members, individuals and groups, are open to acquiring new skills, to continuous renewal and learning (double-loop and the deutero learning are of significance from the point of view of learning [3]). Such an organizational atmosphere supports the success of knowledge sharing, which means that everyone aims to transmit his/her knowledge, to share it with colleagues and the other members of the organization for the sake of the collective goals. This fact separately contributes to the fact that

people will be able to work and produce the expected results in the framework of a balanced organizational operation on a higher level of knowledge.

If the performance is higher, not only in quantity, but also in quality, it is to be seen in the efficiency of the enterprise, since it will make it possible to produce more modern, higher quality, more marketable products and services in competitive organizational conditions.

The establishment of conditions of knowledge within the company – first of all, innovative knowledge – is beyond the operation of a learning organization, such as the grounded internal knowledge base that is the condition for permanent development and renewal. As well as, the organizational atmosphere (culture) that establishes creativity, the conditions of continuous learning handle the requirement on a strategic level to the employee's satisfaction, thus a reliable quality and competitive performance of the work are ensured by putting the right person in the right place.

A learning organisation is an approach, a philosophy on one hand, and on the other hand it involves certain features connected to philosophy, which indirectly influence the success of the given organisation. The learning organisations therefore possess the emergence of the five principles, which are not characteristics of other organisations [29].

As a consequence of *thinking in a system* during the process of concentrating on the changing process, which appears as a constant demand, people concentrate on revealing the reason-cause correspondence hidden in the background of the problems and on the holistic examination of organisation involving its surrounding world instead of concentrating on the “here and now” solutions. The concept of *guiding ourselves* means the fact that people are able to learn independently, they possess a view of the future, which ensures them to be able to prioritize among the tasks. They are able to concentrate their creativity in order to reach their personal, individual goals and as a consequence of this to reach all the goals of the organisation (individual learning – corporate knowledge). The *samples of thoughts* primarily influence our attitude, often unconsciously. They influence our activities and our way to react to things. By making these samples conscious the members of the learning organisation can help – primarily with using one of the techniques applied in *group communities* – our ability and willingness to changes and our real activities. Common *prospects for the future* have to be established if we want that the goals set by certain individuals should contribute to the success of the organisation in the long-run. Its feature is that it involves the individual ideas and consequently the organisational groups and members will be able to identify themselves with it.

In case of the existence of preconditions, the application of a model is practical, which involves all the steps of knowledge management processes and can be applied easily in practical life. A possible model can be seen on the following Figure 2 [26].

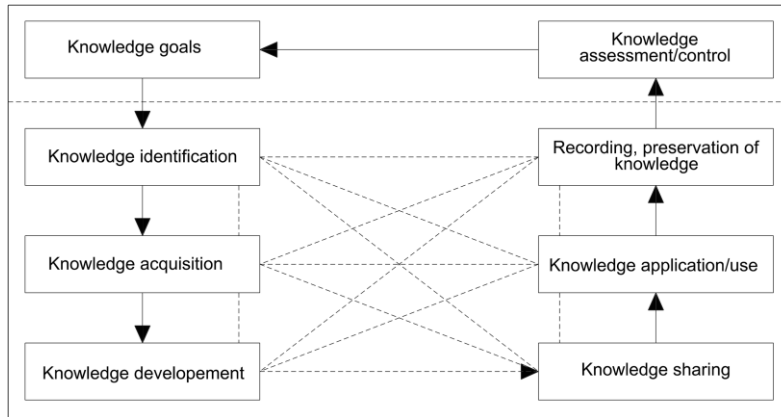


Figure 2
Probst's knowledge management model [26]

Leaders have to be closer to the way of thinking that a condition of competitiveness is the employee satisfaction and that the satisfied employees' willingness to learn and change can contribute to the possibility that the knowledge should be utilized and distributed in the organization at a higher level. To accept this thinking we have to turn to the eight elements of the Probst model.

These elements have a logical order and leaders have to know the steps to build a KM system. Theoretical knowledge and interactions among colleagues (communication) create real knowledge which can be utilized by an organization in order to accomplish its competitiveness. A chance to reach personal and organizational desires is the most important guarantee of the pursuit of knowledge, which is a precondition of learning and satisfaction at the same time. To sum up, the elements of the Probst model again:

Determination of Knowledge Goals:

- normative goals: to create an organizational culture, a joyful workplace and atmosphere which supports the competitiveness;
- strategic goals: the existing organizational knowledge helps to realize the strategic goals and with this knowledge we can work out a new, competitive strategy on a higher level;
- operational goals: they support to apply the knowledge management, if the normative and strategic goals are concrete enough (make sure that normative and strategic knowledge goals will be translated into action).

Knowledge Identification:

View of the internal abilities and possessed knowledge. The once applied and experienced things do not have to be discovered again and again. It is suitable to do a comparison with the environment, to use benchmark, then the organizational memory has a significant role to call out previous experience.

Knowledge Acquisition:

It means to learn from competitors, rivalry, stakeholders, buying know-how, unknown knowledge integration, to apply every cultured method of knowledge acquisition. (Dishonest tools which are important from the perspective of competition, that cannot be made consistent with employee satisfaction, do not belong to this step of KM system, for example, company acquisition, stealing knowledge, industrial espionage, etc.).

Knowledge Development:

New abilities, ideas, develop more effective technology, and new knowledge collection. (Obstacles and supporting elements which are in close correlation with employee satisfaction have to be identified.) It is a direct fact to influence competitiveness.

Knowledge Distribution:

Separated knowledge has to be integrated into the whole organization. Who, what, when, how, has to be known. (It is a prerequisite of satisfaction and a result at the same time. Its base is communication and a knowledge sharing organizational culture in each case.)

Knowledge Use:

Possessing knowledge does not bring a result, but to use it, does. This is in connection with an ability of knowledge acquisition, with willingness to learn and change, which is in interaction with satisfaction. To realize this step the previous phase must be accomplished. (This is also true in the case of internal and external knowledge.)

Knowledge Preservation:

Knowledge has not existed forever. In preservation and in forgetting knowledge the organizational memory has a significant role. This is very important as well from the point of view of creation of a balance between learning – forgetting, knowledge losing processes – and fluctuation. People who join an organization bring with them their knowledge. This can be anticipated from the development of knowledge bases and knowledge stores. With the increase of satisfaction the chance to preserve work forces and knowledge will grow. (Knowledge maps, knowledge catalogues)

Knowledge Measurement:

In the estimation of competitiveness the indexes have significant roles which are suitable for measuring normative, strategic and operational goals. In the stage of determination of knowledge goals the possibilities of success evaluation have to be fixed. (Market conditions, competitors, sales, etc.)

The elements have to be handled from a system view and reviewing connections with them is very important.

It can be stated, together with the heading 'self-management', which appears among the operating conditions of a learning organizational culture, that people, in such organizational conditions, who get a chance to accomplish their own goals, perform higher quality work by harmonizing their own imagination with the organizational goals, something that is a determining factor of employee satisfaction at the same time. On the other hand, qualitative products influence customer satisfaction as a consequence of competitive operations.

Examining the activities of enterprises with regard to quality, researchers face two kinds of problems:

- Failures adjustable by the employee, which arises if the employee has all the three criteria of self-control:
 - Knows what his/her task is.
 - Knows what he/she is doing now.
 - Is able to control his/her activity.

These criteria are only the conditions of self-control: they do not mean self-control has automatically been achieved. For self-control to be achieved an employee needs to possess the appropriate approach and responsibilities, and also know and want to use these tools.

- System failures, namely, the failures that are influenced by the management of the enterprise, occur if one or more of the criteria of self-control are not fulfilled. This indicates imperfection in creating the conditions for self-control by management, if the employees do not know the expectations, the mode of actions, and the possible tools, and if they do not get feedback on their performances and the appropriate support, either physically or in terms of human resources.

In the case of striving for quality work (the competitiveness criterion), it is about the change of management's point of view, achieving long-term thinking. This brings about a new 'lifestyle', a modified behaviour and a new emphasis on the life of the enterprises. This means that the increase in general effectiveness and value creation comes to the forefront instead of permanent cost minimization over a short-term period. Enterprises want to produce at a cheaper and cheaper price, they try to offer more and more to meet customer needs. But, these companies do not want to give more or something else that the customers want. This way of thinking is to be seen as a concept and a program wherein the implementation and the 'steps' of change have the same significance as the result itself. This is a permanent learning process, meaning the formation of a learning organization that supports continuous quality improvement.

3 Results

3.1 Quality Culture

In order to understand the relationship also from the side of quality conceived in the title of the study, first the meaning of quality culture has to be cleared. It also has more definitions in professional literature, among which we have chosen one. The definition describes the train of thoughts, which can be used as good example in order to show the relationship with the learning organisational culture establishing the base of the operation of knowledge management. According to this:

Quality culture is a corporate environment, where a certain approach, behaviour and attitude are prevailed, which is accepted by all the participants and which makes everybody be responsible for quality. It is an approach, which can be characterized by the ambition to be excellent, by continuous quality development and by taking other concerned parties' demand into account. For the sake of successfulness such a quality culture has to be made tangible by a proper quality management system, which is able to maintain the monitoring and evaluation processes and results of the organisation.

A proper cultural background is the precondition of developing quality systems and of the operation of quality management systems. The proper culture is also a requirement for developing knowledge management system, which is ensured by the above described learning organisation solution. To prove the similarities between learning organisational culture and quality culture, the following comparison should be observed. In both cases trust is the basic requirement and in both cases the human-centred approach prevails.

The base of quality management system is trust, its precondition is: quality culture

- Approach, behaviour
 - Process-centeredness
 - System-approached guidance
 - Continuous development
 - Involvement of workers - Teamwork
- } human-centred

The base of building knowledge management system is trust, its precondition is: learning organisational culture

- System-approach
 - Self-development, self-guidance
 - Common prospects for future
- } human-centred

- Inner persuasion, sample of thoughts
- Learning in group

The success of knowledge management systems depends on the way of thinking of the top management; it depends on how much they understand that knowledge management can help reach corporate goals. If quality is important, knowledge is overvalued, [15] sharing, preserving and developing knowledge is necessary, which means building knowledge management system is necessary. Thus, the result of the operation of the two systems is a fact presupposing each other mutually.

Choosing some systems of the quality systems, the following Table 1 presents the features, which justify their human-centred approach.

Table 1
Human-centred features of quality systems

Quality management systems			
ISO	TQM	EFQM	LEAN
<i>Process-centred</i>	<i>Proper management</i>	<i>Management</i>	Effectiveness
<i>System-approach</i>	Target in focus	Strategy	Flexibility
Effectiveness	Active participation	Integration of outer partners	Elimination of waste
<i>Continuous development</i>	<i>Continuous quality development</i>	<i>Teamwork</i>	<i>Flexible, skilled workers</i>
Satisfaction of concerned parties	Outer partner-relationship	<i>Human-centred</i>	Operation without mistakes
Customer-centeredness	Effective resource management	<i>Resource management (knowledge database, knowledge capital, etc.)</i>	Kaizen
	<i>Human-centered</i>	Corporate self-evaluation	Added value
	<i>Cultivating and developing corporate culture</i>		Perfection
	<i>Teamwork</i>		Cost-management
	Social-level learning		<i>Teamwork</i>

Using the features, the list containing the features of quality management systems and knowledge management systems can be put side by side, where the same colours show the relationship conceived in the title and in the introduction (Table 2)

Table 2
Features characterizing the similarities between quality management systems and knowledge management systems

Quality management systems	KMS
Customer-centred	<i>System-approach</i>
<i>Determining role of management</i>	<i>Built on trust</i>
<i>Integrating workers</i>	<i>Human-centred</i>
Process-centred approach	Knowledge is basic requirement
<i>System-centred managerial approach</i>	<i>Own set of methods, tools</i>
<i>Continuous development</i>	<i>Strategic role</i>
Factual approach of decision-making	<i>Struggle for acceptance</i>
Suppliers' connections in favour of mutual profit	<i>Formal application</i>
<i>Struggle for acceptance</i>	<i>Determining role of management</i>
<i>Formal application</i>	<i>Continuous development</i>
<i>Trust is basic requirement</i>	
<i>Own set of methods, tools</i>	
<i>Strategic role</i>	

The operation of knowledge management system, the applied set of tools – can be accepted based on the above evidence –, how the logic of knowledge management supports the operation of quality systems and the success of developing quality culture. The further features strengthening cooperation, which characterize the operation of both the learning organisational culture and of the quality culture is summarized in the followings. The elements of similarities between the systems:

- Trust,
- Key-role of humans - workers, management (Who?),
- System-approach (technology, processes, supporting services) (How?),
- Knowledge is basic expectation (What?),
- Own set of methods, set of tools – (overlaps),
- Modelled way of seeing things,
- Strategic role,
- A run „walk of life“ – struggle for accepting reason for existence,
- Formal application – unexploited opportunities.

Based on the above shown logical frame, it can clearly be seen that the steps of knowledge management system can be used according to the following correspondence in order to solve the problems described in the beginning of the

study (Table 3). Consequently, the help of which the quality-centred way of thinking and behaviour, the development and maintenance of quality culture can be supported without any doubt.

Table 3
KM solution supporting solving quality problems

Quality problems	KM solutions
Repetition of similar mistakes (costs),	Preserving, recording, sharing knowledge
Duplicated fulfilling of tasks (projects form the past, their results are known)	Preserving, recording knowledge
Lack of information (e.g.: customer service),	Knowledge share – building on trust
Lack of sharing inner good ideas, best practices	Sharing, gaining and developing knowledge
Weak link (1-2 people have the key knowledge/information)	Key people – knowledge share – building trust
Slow/ no integration of gained knowledge (slow improvement of products/rival overtakes),	Utilization of knowledge
Information/knowledge sources are hardly available (frustrated workers).	Developing knowledge-database and corporate memory

4 Discussion and Conclusion

As a summary it can be stated that the solution of quality problems and the logic of knowledge management live in symbioses. The quality issues can hardly be solved without knowledge and operating knowledge management system in order to fulfill strategic goals is worthwhile only by taking quality efforts into consideration.

Quality culture is built on strengths, where the features are:

- challenging individual and common goals,
- real conditions,
- clear, clean-cut rules,
- relations built on trust,
- open communication.

In such a corporate environment, the followings can dominate:

- positive atmosphere to reach goals,
- optimism and desire to do something,
- knowledge share,
- mutual help,
- goal-orientation and self-confidence,
- focusing on the task.

We have to realize this situation in organizations. It is confirmed by the idea of Donna Denehy as well.

„The marriage of KM and QM is something that many organizations are now thinking about. Integrating the two can begin to:

- Improve the baseline knowledge of your representatives and understand where knowledge gaps exist,
- Positively impact employee morale and empowerment,
- Provide customers more ease of doing business,
- Help ensure consistent information is being provided to help improve compliance,
- Drive consistent improvement in your quality results,
- Improve customer experience and satisfaction.

Now is the time to start thinking about bridging the gaps.”

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