

Knowledge Management and TQM: An Integrated Approach to Management

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Abstract

Knowledge management (KM) is the name given to the set of systematic and disciplined actions that an organisation can take to obtain the greatest value from the knowledge available to it. Knowledge management has received increasing attention from 1990. For a few years, it was the next big thing after business process reengineering and total quality management. This paper describes and compares concepts of KM and TQM. At the end, it concludes that KM and TQM are complementary and to be successful, it is necessary to take an integrated approach to management.

Introduction

Knowledge management (KM)—also known under rubrics such as organisational learning, organisational memory, and expertise management— has received increasing attention and has emerged on the maps of strategy consultants and conference organizers over the last decade. For a few years, it was the next big thing after business process reengineering and total quality management. It overlapped with initiatives on competence management and organisational learning, gaining credibility from the daily news on the imminent arrival of the knowledge society and the continuously expanding Internet. The early emphasis in knowledge management was on information systems. Then the focus shifted towards organisational development, intellectual capital management, and

competence management. Towards the end of the 1990's, social learning, organisational sensemaking, and systemic innovation and change management became prominent themes in knowledge management.

Knowledge Management Concepts and Principals

Like TQM, KM has been defined in different ways and from different perspectives. It has been described as “a systematic process for capturing and communicating knowledge people can use.” Others have said it is “understanding what your knowledge assets are and how to profit from them.” Or the flip side of that: “to obsolete what you know before others obsolete it.” Perhaps the simplest definition of knowledge management is “sharing what we know with others.” In all of these definitions, the emphasis is on human know how and how it brings value to an organization; however, utilizing individual expertise to get maximum return for an organization is not as easy as it may sound.

Knowledge management is the name given to the set of systematic and disciplined actions that an organization can take to obtain the greatest value from the knowledge available to it. “Knowledge” in this context includes both the experience and understanding of the people in the organization and the information artifacts, such as documents and reports, available within the organization and in the world outside. Effective knowledge management typically requires an appropriate combination of organizational, social, and managerial initiatives along with, in many cases, deployment of appropriate technology.

Davenport et al. (1998) defined KM using a project-based approach:

“Knowledge management is concerned with the exploitation and development of the knowledge assets of an organisation with a view to furthering the organisation's objectives. The knowledge to be managed includes both explicit, documented knowledge and tacit, subjective knowledge. Management entails all of those processes associated with the identification, sharing and creation of knowledge. This requires systems for the creation and maintenance of knowledge repositories, and to cultivate and facilitate the sharing of knowledge and organisational learning”.

Tacit knowledge is what the knower knows, which is derived from experience and embodies beliefs and values. Tacit knowledge is actionable knowledge, and therefore the most valuable. Furthermore, tacit knowledge is the most important basis for the generation of new knowledge, that is, according to Nonaka (1991): “the key to knowledge creation lies in the mobilization and conversion of tacit knowledge.”

Explicit knowledge is represented by some artifact, such as a document or a video, which has typically been created with the goal of communicating with another person. Both forms of knowledge are important for organizational effectiveness.

These ideas lead us to focus on the processes by which knowledge is transformed between its tacit and explicit forms, as shown in Figure 1. Organizational learning takes place as individuals participate in these processes, since by doing so their knowledge is shared, articulated, and made available to others.

TACIT TO TACIT SOCIALISATION	TACIT TO EXPLICIT EXTERNALIZATION
EXPLICIT TO TACIT INTERNALIZATION	EXPLICIT TO EXPLICIT COMBINATION

Figure 1: Conversion of knowledge between tacit and explicit forms

Creation of new knowledge takes place through the processes of combination and internalization. As shown in Figure 1, the processes by which knowledge is transformed within and between forms usable by people are:

- *Socialization (tacit to tacit):*

Socialization includes the shared formation and communication of tacit knowledge between people, e.g., in meetings. Knowledge sharing is often done without ever producing explicit knowledge and, to be most effective, should take place between people who have a common culture and can work together effectively (see Davenport and Prusak,1 p. 96). Thus tacit knowledge sharing is connected to ideas of communities and

collaboration. A typical activity in which tacit knowledge sharing can take place is a team meeting during which experiences are described and discussed.

- *Externalization (tacit to explicit):*

By its nature, tacit knowledge is difficult to convert into explicit knowledge. Through conceptualization, elicitation, and ultimately articulation, typically in collaboration with others, some proportion of a person's tacit knowledge may be captured in explicit form. Typical activities in which the conversion takes place are in dialog among team members, in responding to questions, or through the elicitation of stories.

- *Combination: (explicit to explicit):*

Explicit knowledge can be shared in meetings, via documents, e-mails, etc., or through education and training. The use of technology to manage and search collections of explicit knowledge is well established. However, there is a further opportunity to foster knowledge creation, namely to enrich the collected information in some way, such as by reconfiguring it, so that it is more usable. An example is to use text classification to assign documents automatically to a subject schema. A typical activity here might be to put a document into a shared database.

- *Internalization (explicit to tacit):*

In order to act on information, individuals have to understand and internalize it, which involves creating their own tacit knowledge. By reading documents, they can to some extent re-experience what others previously learned. By reading documents from many sources, they have the opportunity to create new knowledge by combining their existing tacit knowledge with the knowledge of others. However, this process is becoming more challenging because individuals have to deal with ever-larger amounts of information. A typical activity would be to read and study documents from a number of different databases.

These processes do not occur in isolation, but work together in different combinations in typical business situations. For example, knowledge creation results from interaction of persons and tacit and explicit knowledge. Through interaction with others, tacit knowledge is externalized and shared. Although individuals, such as employees, for example, experience each of these processes from a knowledge management and therefore an organizational perspective, the greatest value occurs from their combination since, as already noted, new knowledge is thereby created, disseminated, and internalized by other employees who can therefore act on it and thus form new experiences and tacit knowledge that can in turn be shared with others and so on. Since all the processes of Figure 1 are important, it seems likely that knowledge management solutions should support all of them, although it should be recognized that the balance between them in a particular organization will depend on the knowledge management strategy used.

The Sources of Knowledge Management

Knowledge management has its origins in four different disciplines that were relatively independent until the late 1990's. The broad discussion on the emerging knowledge society provided credibility for each of them, emphasizing the importance of the new rules of global, networked, and knowledge-intensive economy. Each of the four different disciplines gained momentum from the perceived ongoing transformation, indirectly amplifying each other.

There are four disciplines of knowledge management as organizational information processing, business intelligence, organizational cognition, and organizational development. The first had its starting point in computer technology, the second on information services, the third on research on organizational innovation, learning, and sense making, and the fourth on business strategy and human resource management.

It is obviously clear that the sources of knowledge management thinking, as mentioned above, had many overlaps. The empirical basis for clustering these different sources or "disciplines" of knowledge management can, however, be found by looking the different communities of practice that were involved. In the mid-1990s, conferences

on organizational learning and cognition, business intelligence, and organizational information systems attracted quite different audiences. The concept of knowledge management was sometimes connected with databases, intranets and document management systems, corporate accounting, learning, business strategy, and management of product development processes. This reflects the reality: instead of one well-defined knowledge management discipline there were many. Instead of one “knowledge management”, we, therefore, need several characterizations, which all remain somewhat ambiguous, overlapping, and depend on the point of time which we use.

TQM Concepts and Principals

Total quality management (TQM) addresses the issues of customer satisfaction and guidance on implementing the marketing concept. The 1980s brought about a business process of continuous improvement to satisfy customers’ needs (Churchill *et al.*, 1994). Through an external focus on customer satisfaction and an internal focus on operational excellence TQM has promised superior performance. TQM also offers managers a host of supporting tools and organizational prescription (Churchill *et al.*, 1994). The “total quality” concept is a general philosophy of management which goes well beyond the marketing customer-perceived view of quality by including all key requirements that contribute not only to customer-perceived quality, but also customer satisfaction (Buzzell and Gale Bradely, 1987; Garvin, 1988; Zeithaml *et al.*, 1990; Price and Chen, 1993). This concept broadens our previous notion of quality in that it provides complete customer satisfaction on a full range of product and service needs (Price and Chen, 1993).

The early 1990s brought about recognition of this total quality concept from various management scholars. Numerous studies have been conducted and a range of books has been devoted entirely to total quality, focusing exclusively on product and service quality management.

The concept of TQM is one which is often confused with other practices such quality circles and ISO 9000. Although similarities exist between TQM and other business process improvement practices, the TQM philosophy is an all-encompassing one. Dale and Cooper (1992, p. 11) state that “TQM is a much broader concept than the

initiatives which have gone before, encompassing not only product, service and process quality improvements but those relating to costs and productivity, and people involvement and development". As TQM is so comprehensive, one can easily see why TQM as a concept is often misconstrued. Many organisations view TQM as a quick fix to all the ills that have caused poor performance. However, TQM is not an easy solution to organisational problems, but rather an approach to managing an organisation which is based around continuous improvement and cultural change (Kanji and Asher, 1996).

The concept of continuous improvement is a critical success factor of any organisation and should be used as the foundation stone upon which every successful TQM initiative should be built. This view is shared by Handy (1994) who stated "... the world keeps changing. It is one of the paradoxes of success that the things and ways that get you where you are, are seldom the things that keep you there."

The main components of TQM are supported by a number of techniques and activities. If TQM is to be successful in an organisation it must be actively supported by senior management. Schein (1991) identified one of the common causes of failure of TQM programmes as being a lack of top management commitment.

If employees are confident that senior management strongly supports a TQM initiative they are more likely to become involved in that organisation's TQM efforts. Successful employee empowerment and involvement are essential components of any TQM programme. Torrington and Hall (1995) stated that "difficulties experienced in adopting TQM have mainly focused on people issues."

Knowledge Management & TQM: Similarities and Differences

From the perspective of operational processes, KM consists of the basic input-output transformation process. At the input end, there is combination of knowledge of customer's needs and expectations, knowledge of raw materials and resources to be used, knowledge of products and services to be delivered as well as data information or knowledge.

The knowledge conversion process is actually a changing and/or improving process. It consists of preserving, embedding and enhancing knowledge of process, products and services. The knowledge conversion process can also be seen as one of

knowledge creation, transferring and sharing, and a process of knowledge access improvement as well. Fostering a knowledge environment that is conducive to knowledge development, use and transfer is vital in the knowledge conversion process.

As we have entered into an information and technological age, knowledge embedded in products and services, intellectual capital and an improved knowledge and understanding of customer needs are among the most important outputs of the knowledge conversion process. The process clearly indicates that knowledge management takes information, knowledge and people as its basic inputs, and applied knowledge and intellectual capital as its desired outputs. KM emphasises knowledge creation, transfer and embedding to serve different organisational purposes. This may include the enrichment of knowledge of customers, the building of knowledge capital or developing enhanced access to knowledge (Armistead, 1999).

Definitions and descriptions of TQM are often vague. It is therefore useful to provide a brief profile of TQM concepts by reviewing the vital principles:

- Customers include internal and external customers.
- Meeting and exceeding customer needs is a clearly stated aim.
- Leadership of TQM stems from the top management and enlists individual and team commitment throughout.
- The highest levels of integrity, honesty and trust and openness are essential ingredients of TQM.
- Mutual respect, mutual trust and mutual benefit of all stakeholders are important factors within the development of any Total Quality organisation.
- Total Quality offers each individual the opportunity to participate, contribute and develop a sense of ownership.
- TQM involves continuous and measurable improvement at all levels of an organisation.
- TQM requires consistent and precise performance to high standards in all areas of the organisation.
- An aim of TQM is to better use resources, to achieve effectiveness and efficiency (Hellard, 1995).

In terms of the input-output process, like KM, TQM is also a process of transformation of a set of inputs including plant equipment and raw materials, procedures and methods, information and knowledge, and people and their skills. The outputs of the transformation are products, services, information/paperwork and any results that meet customer needs and expectations.

Both TQM and KM take information, knowledge and people as their basic inputs, and applied knowledge and intellectual capital (may be in the form of information and paperwork in the case of TQM) as their desired outputs. However, focuses and strategies of both are quite different. KM regards knowledge as the source of competitive advantage. TQM relies on quality processes to achieve customer satisfaction. Table 1 illustrates further the similarities and differences between KM and TQM in terms of objectives, goals, focuses and strategies (Miltra, 1998).

Similarities	
<i>KM</i>	<i>TQM</i>
<ul style="list-style-type: none"> · Continuous improvement and learning from others · Valuing employees/intellectual capital · People/competence development · Empowerment/ involvement · Teambuilding/collaboration · Acquiring knowledge of competitors, customers, suppliers and partners · Facilitating/improving access to knowledge · Improving quality and efficiency of decision-making 	<ul style="list-style-type: none"> · Continuous improvement and measuring to achieve customer satisfaction · Valuing employees/intellectual capital · Employee training/education/development · Empowerment/ involvement · Teambuilding/collaboration · Acquiring customer and market knowledge · Selection and use of information and data · Opening channel of communication · Improving quality and efficiency of decision-making
Differences (Focus/Strategies)	
<i>KM</i>	<i>TQM</i>
<ul style="list-style-type: none"> · Embedding knowledge in staff, customer, products, process, services · Regarding knowledge as the source of competitive advantage · Achieving greater productivity through the use of knowledge · Creating/disseminating new knowledge and embedding it in new technologies and products · Searching for new source of information · Adapting knowledge to market needs 	<ul style="list-style-type: none"> · Better use resources, to achieve effectiveness and efficiency · Striving for excellence through benchmarking, etc · Consistent and precise performance to high standards in all areas of the organisation · Effective leadership and team commitment throughout · Customer focus · Results focus · Measurement of quality using data and tools · Management by facts and processes · Mutual respect, mutual trust and mutual benefit of all stakeholders

Table 1: Similarities and Differences: Knowledge Management (KM) and TQM

An Integrated Approach to Management

The above comparison of the TQM and KM processes indicates their strength and complementarity. The effectiveness of quality management process to achieve quality improvement and increased productivity will be enhanced if KM concepts are effectively integrated into the process. The comparison shows that organisational excellence can be achieved through incorporating KM concepts into the TQM process whilst interacting with environmental changes.

In today's ambiguous and uncertain environment, organisations face critical issues of adaptation, survival and competence. It is through creating, acquiring, embedding and using knowledge that organisations can address the critical issues as well as obtain competitive advantage. Searching for and acquiring new sources of information and new technologies helps organisations to stand out in gaining market share in terms of their products and services. Knowledge of, and understanding, customer needs and requirements are the pre-requisite for customer satisfaction. Knowledge embedded quality products and services are vital to the achievement of customer satisfaction. Moreover, management by facts, a core value of Malcolm Baldrige National Quality Award, counts on organisational capability of obtaining, processing, disseminating and use of data and information.

Conclusion

KM and TQM are complementary. A synergistic combination of KM and TQM forms a cycle of improvement and development, leading to organisational excellence. A knowledge based TQM approach will inform, guide and facilitate continuous improvement and learning, thereby assisting the organisation to better meet the changing needs and expectations of customers. It should facilitate the introduction of KM principles gradually engaging and turning them into a complementary management process. While TQM is result focused, which emphasises optimisation of resources and on greater productivity, better use of intellectual capital and knowledge assets hold the key to achieving the desired results. To be successful, it is necessary to take an integrated approach to management. In other words, TQM should address environmental changes and deal with them through improving knowledge management capacities and skills.

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