

The Interdependency between Knowledge Management and Quality

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ABSTRACT

In this paper, the authors seek to examine the link between Knowledge Management (KM) and Quality. They propose that as KM reaches its maturity in terms of acceptance as an important part of doing business in the modern world, that Quality will again become the mantra of successful companies. A national survey of 1000 Quality certified organisations in Australia was distributed with a 25% response rate. The survey asked questions pertaining to their use of KM, their Quality culture as well as their Quality performance measures. As a result of preliminary analysis of the data, the authors suggest that in order to survive in such a dynamic environment, organisations will have to embrace KM as a fundamental component of delivering a Quality culture.

Keywords: Quality, Knowledge Management, Australia, Survey

INTRODUCTION

This paper seeks to examine how Knowledge Management (KM) and Quality are linked and how this link can be utilised to develop a Quality culture within an organisation. Once we have established that the two are indeed closely integrated, we examine how the use of KM has a role to play in the resurgence of the Quality.

For this paper to make sense, we wish to make explicit an assumption that we have made. This impacts on the way in which we have chosen to locate our paper within the growing literature surrounding knowledge management as well as the more established literature that deals with Quality.

The assumption is that Quality is, in fact, resurging. Furthermore, while we note that Quality has faded from the radar in the second half of the 90's and into the early part of the new millennium, we propose that it is undergoing a quiet revolution as managers seek to use the concepts that underpin

Quality management in a manner that will inform them about how to best deal with the growing importance of KM.

KM AND ITS LINKS WITH QUALITY

A study by Lee, Yang and Yu (2001) sought to bring the concept of knowledge management and Quality together. In essence, they proposed that KM consists of two variables – knowledge acquisition and knowledge dissemination. Knowledge acquisition can occur at both the customer and the organisational levels, as can knowledge dissemination.

Knowledge acquisition (KA) processes that the organisation undertakes as a means of determining what the customers' expectations are of the products are important and can be formalised: "This customer focus requires companies to build up close relationships with their customers and constantly acquire knowledge/information about their product so as to improve their products' Quality according to customers' feedback. This establishment of strong links with customers is useful in the development of designs, allowing determination of which specifications and tolerances are critical from the customers' perspective" (Lee, et al. 2001 :692). Lee et al (2001) propose that it is the responsibility of the organisation to remain close to the customer in order to be able to monitor and record changing customer needs and wants and then to produce products and services in a manner that meets the customers' expectations.

Organisations can use Quality processes to ensure that they are capturing the types of information that they need to be able to better inform decisions about customers' expectations and needs in the future.

Such formal Quality processes are relatively common and are regularly present in firms that have attained ISO 9000 certification.

Knowledge dissemination (KD) within the organisation is also important. For example: "The encouragement of face-to-face interaction between product development team members enables creative improvisation and real time knowledge sharing, leading to effective knowledge dissemination" ... and ... "The important step towards harnessing the creative power of tacit knowledge is to foster the emotional commitment and deep personal involvement of design team members. As with the customers discussed above, the involvement of employees in the raw product development project can also contribute to the Quality product" (Lee, et al. 2001:693). Lee et al (2001) contend that by maintaining close links to the customer through the KM process, companies are able to maintain Quality and satisfy future customer needs around Quality.

We know Quality when we see (or touch, or taste, or feel) it. But often it is very difficult to define in any sort of adequate manner. Nevertheless, we understand Quality as a construct of our own knowledge, thinking, and experience. Our understanding of Quality also has the ability to be shifted as our experience grows or changes.

KM is a construct and a series of process that can aid organisations trying to fill in the gaps between the current cognitive reality surrounding Quality (their own as well as those of the customer) and that future state of Quality which is used to inform the design, development, and distribution of current efforts.

It is our assertion that Knowledge acquisition (as supported by Quality processes/certification processes) plus the development of a Quality culture through active knowledge dissemination leads to TQM or Total Quality Management within an organisation.

RESEARCH METHODOLOGY AND RESULTS

It is the intention of the authors to determine if in fact such a link between KM and Quality exists. In order to do so 1,000 Quality Managers were surveyed throughout Australia of which 25% replied.

There were 32 items in the questionnaire with the first 8 questions providing a profile of the respondent. Section B of the questionnaire specifically asked questions pertaining to KM, QM and Quality performance. They were presented on a 7 point Likert Scale and included the option of Do Not Know/Not Applicable.

The results were subsequently analysed using SPSS and the preliminary results are as follows. Of the 250 respondents, 78% were male with age being evenly spread from 20% under 20 years of age, 28% between 36-45, 34% between 46-55 and 20% older than 55. The majority had post secondary

education (36% with a Bachelor degree and 17% TAFE qualifications) with 18% having a Masters or even higher. Most respondents came from the manufacturing sector (31%) followed by Business Services (23%) and the balance came from a diverse industry sectors (eg the next representation was Construction with 7.7%). Tenure at the organisation was of interest as 10.6% had been with the organisation for less than a year with over 51% between 5 – 20 years or more and 11% exceeded 20 years with the organisation. Finally, membership of professional associations was very diverse with 56 organisations listed and the most (14%) being members of the Institute of Engineers. Ironically only 2% were members of a Quality association (AOQ)

Section B of the survey investigated five linkages between KM and Quality.

- Level of knowledge acquisition from customers. Most (54%) actively encourage comments from customers on their products or service with 20% providing strong incentives for this feedback. Working closely with customers is seen as of paramount importance (69%) as they regularly collect data and analyse the information to better improve their service (53%). Thirty percent of respondents acquired more information from their customers rather than screening their competitors with another 31% sourcing information about both.
- Participation of employees in knowledge dissemination. Seventy-seven percent of respondents commented that employees regularly communicated with each other both formally and informally about customer needs with brainstorming being the most popular method (47%). Only 15% of respondents had incentive schemes for employees even though best practices were measured, reported

and followed in their organisation (56%).

- Quality processes. As expected of this cohort of respondents 86% had standardised process instructions for employees with 44% having a large percent of their equipment or processes under statistical quality control. What is surprising is that only 25% made extensive use of statistical techniques to reduce variance and only 31% had employees self-inspect in order to identify and eliminate non-value adding activities.
- Quality culture. 58% percent identified teamwork within their organisation with much the same number reported communication of a common mission/purpose by top management. 62% percent reported that employees would put in extra effort to meet customer needs and 48% felt that employees had the freedom to use their own judgement.
- Quality Performance. (this next sentence is very confusing so have not edited as yet)A variety of measures were used for example sound financial performance indicators were utilised (70%) with being responsive to customer needs being of high value (72%). Forty-seven percent suggested that employees were highly satisfied with the organisations (eg low absenteeism ...) and 67% reported highly favourable responses from customers.

More rigorous analysis of the quantitative data in Sections A and B are in progress but Section C addressed the qualitative aspect of the survey by asking four open-ended questions. Trends in responses have clearly been identified. The section began by asking if, in their own opinion, they thought KM supported their organisation. Overwhelmingly, the consensus was that it did. Comments

to the effect that: “KM provides the technical and commercial basis for all quality procedures” whilst it “enables [the company] to tap into tacit knowledge stored in experienced employees when tackling unique problems etc.” were prolific. Any negative comments appeared to centre around “owners dominating what ideas get implemented” or that “KM works better in larger companies” – but such comments were few.

The second question pertained to what impact they thought KM had on their Quality subsystems. Of the four questions in the section, this created the most feedback. Respondents were very articulate when conveying their thoughts with comments like “it is an essential part of our operation”. In particular its application can be seen in comments such as “Quality of procedures and processes have been improved by transferring tacit knowledge to process flow charts”. Short phrases like “Knowledge is power” and “Huge impact” were numerous with very little negative feedback. Perhaps we were surveying the ‘converted’.

The question as to their thoughts on the future of Quality Management was of considerable value. It was very interesting that the general theme was that Quality was on its “way back” and that it will be “integrated into ‘normal’ business procedures using KM”. The majority of responses inferred that it will “move away from traditional process driven quality to more result driven/customer satisfaction point of view”. Any prophets of doom as to the future of Quality Management were conspicuous by

their absence.

The final question as to whether they thought KM will have any impact on the future of Quality was revealing. In contrast to the previous question, the numbers of responses was comparatively low and short. Where respondents were confident about the future of Quality they did not appear to be so confident when it came to the involvement of KM in that development. There seemed no doubt that KM supported and currently had an impact on the organisation but the role of KM in the future evolution of Quality was very vague. There were many one word responses like “Absolutely”, “Yes’ and “Definitely” but little elaboration. Interestingly, of the 250 responses only one reply called it “just the newest academic buzz word for simply good business practice”.

As mentioned earlier, more analysis is taking place on the qualitative data but it was very rewarding to see the respondents taking the open-ended questions seriously and writing detailed answers. This should lead to a wealth of information about their perspectives.

IMPLICATIONS FOR MANAGEMENT

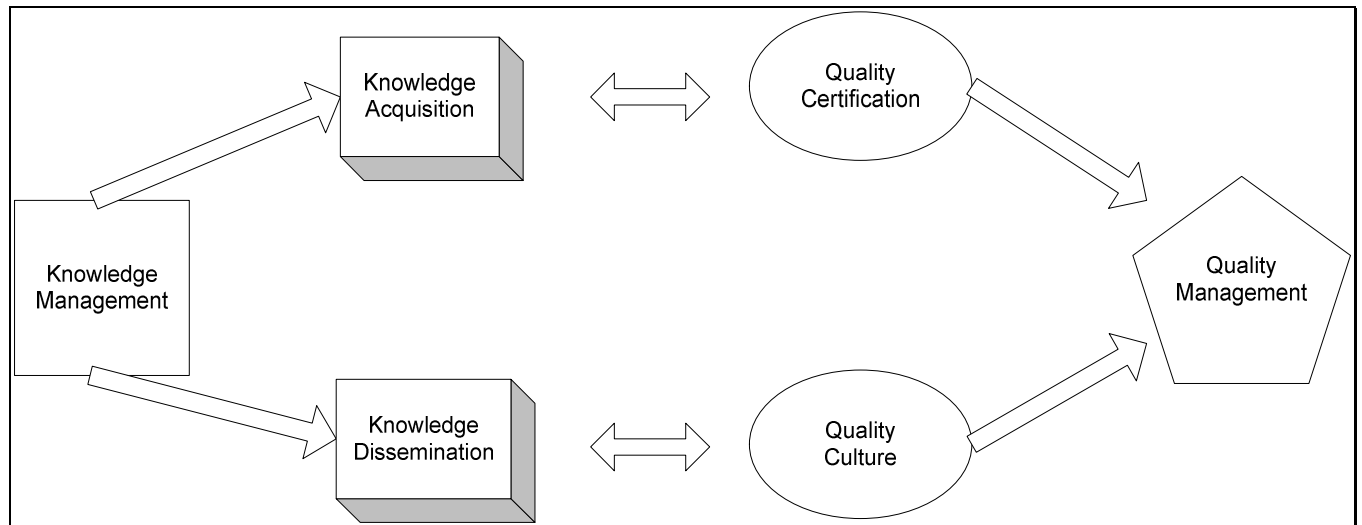
The creation, introduction, and implementation of Quality systems may provide valuable lessons for KM practitioners. Quality systems were and are a formalised attempt to increase Quality (as defined by the customer) and the formalised structure of Quality systems helps ensure that every individual

within an organisation understands what is required to meet pre-determined Quality standards. In a way, Quality systems codify the tacit understandings of what Quality is and then allows the individual within the organisation to work towards that standard. Quality systems can be used to build a culturally tacit understanding about the way in which information, data and knowledge is handled within an organisation and can provide a readily understood and repeatable process by which “things are done around here”.

Thus, while Knowledge Acquisition processes can be the subject of Quality systems (as evidenced by, say Quality Certification), there appears to be no reason why Knowledge Dissemination cannot also be subject to a Quality culture. Although on the surface this seems a logical step, it is anticipated that it would be very difficult to “systematise” an innovation culture through formal KD processes. The actual act of specifying the way in which knowledge should be disseminated in the organisation could lead to retardation in the ability of workers to be creative. Too much formalisation might actually strangle innovation and the production of Quality goods (something that the organisation was seeking to avoid in the first place).

Both KA and KD are required to deliver Quality goods and services to the customer. It is only through the application of *both* KA and KD (through a Quality culture) that true Quality management can exist. The relationship between KM (KA and KD) and Quality (Certification and Culture) can be seen in the following model:

FIGURE 1 The Relationship between KM and Quality



Source: (Waddell & Stewart 2004)

CONCLUSION

In one sense, KM is a construct umbrella. It provides an organisation with specific processes to allow data and information to be collected, stored, and converted into knowledge for the benefit of the organisation. This is more than just the storing of data in a retrieval system, it allows for a way in which the knowledge can be used to provide meaning. So it appears that Quality management, (through the use of Quality systems) is running a parallel race with KM. Both fields are trying to produce the same thing – competitive advantage through the application of processes that help organisations to get closer to the customer in a way that allow them to better understand customers' needs and wants. By understanding the close ties that KM and Quality systems share the modern organisation is in a better position to deliver Quality to those that matter most – the customers.

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