



Introduction to Goal-Oriented Knowledge Management (GOKM)

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ABSTRACT

This paper introduces research in Knowledge Management (KM) that is being carried out at the headquarters of The Danwood Group, Lincoln, UK as part of a collaborative doctoral training scheme with the Department of Computer Science, Loughborough University. The research project has been divided into five major phases; the first phase consisting of a pilot study in KM and the remaining four phases dealing with vital KM issues such as strategy, technology, culture and measurement. The pilot phase of this project revealed high levels of fragmentation in the KM discipline, which underlined the need for a change of focus from pursuing a commonly accepted definition of KM to identifying the purpose of KM within an organisational context. The primary aim of this research project is to define a KM framework and methodology that will have the ability to adapt and aid an organisation in achieving its stated goals.

INTRODUCTION

This paper describes the pilot phase of a research project that was initiated at Danwood in order to discover a Knowledge Management (KM) approach that would best serve the company's business objectives. The research team involved in this project are attempting to achieve the requirements of the sponsoring organisation in parallel to promoting a new approach of managing knowledge within an organisational context.

Company Background (Research Sponsor)

The Danwood Group is one of the UK's largest independent suppliers of total office solutions. Established in 1971, Danwood currently has a turnover in excess of £60 million with 20 locations throughout the UK & Ireland and further expansions planned in the near future. Danwood's core business resides in the print output capture market, the sales and service of reprographic machinery as well as providing document and print management consultancy. The company has a long-standing relationship with Loughborough University as numerous PhD candidates and MSc students have carried out research at Danwood's headquarters in Lincoln, UK.

Research Aims and Objectives

The primary aim of this research project is to develop, implement and evaluate an original framework and corresponding methodology for adapting KM efforts to the specific business goals and objectives of an organisation. The need for this approach has been highlighted through the review of relevant literature and will be evaluated through a series of case studies, the first of which is to be performed at Danwood. The expected outcome of this initiative is faster business-term results as well as longer-term benefits for the organisation that applies the recommended KM guidelines.

The aims of this research project will be satisfied by the following objectives:

- To study and evaluate KM approaches, frameworks, methodologies, strategies and technologies in a number of industry sectors but with a special focus on the service industry in order to formulate a KM model that will be aligned with Danwood's organisational goals.
- To perform a case study of the application of the new KM model at Danwood and measure the effect on tangible and intangible business values. This will be in aid of promoting the model externally and pursuing new case study subjects.

RESEARCH HYPOTHESIS: FOCUSING ON THE PURPOSE OF KM

An extensive review of literature that addresses topics relevant to managing knowledge, from a variety of perspectives has led to the conclusion that the KM discipline seems to be suffering from high levels of fragmentation. This variation appears in terms of how KM has been perceived and defined, as well as how KM approaches have been classified and KM strategies have been directed. The competing schools of thought in KM (e.g. *knowledge creation*, *business transformation*, *systematic orientation* etc) that stimulate division in the field are mostly the result of the natural variation of background, industry and motives of researchers and practitioners who contribute to the field. However, this contradiction of opinions is considered necessary for any emerging discipline to evolve. In 2001 Walsham states that attempting to share knowledge with others is only valuable if one's views differ from that of the other parties in the exchange, since one learns nothing from total homogeneity of view. This statement seems sensible, although like many others it is only true within logical boundaries. The large gamma of opposing views regarding KM seems to have exceeded these boundaries to the point of becoming counter-productive. Roy (2001) supports this observation by stating that KM has been *defined* by management consultants, *redefined* by computer scientists and *undefined* by marketers of software products. In addition, Lucier (2003) reports that up to 84 percent of all KM programs fail due to the phenomenon of fragmentation in the field.

The analysis of various definitions for KM, which took place during the extended literature review, has led to the conclusion that it would be unrealistic to attempt to provide yet another generic definition. Instead, it has been deemed more important to recognise the *purpose* of KM, define the context within which it takes place and focus on achieving practical outcomes. Wiig (1997) defines the objectives of KM as a.) to make the enterprise act as intelligently as possible to secure its viability and overall success and b.) to otherwise realise the best value of its knowledge assets. In a similar manner the following definition describes the research directive of this project:

The purpose of knowledge management, from an organisational perspective, is to aid in utilizing internal and external knowledge resources in order to achieve stated goals and sustain competitive advantage.

Over the past decade researchers and practitioners have attempted to define a generic KM model that will have the ability to fit into any organisational environment and fulfil any variety of goals and objectives. So far attempts to achieve this have not been fruitful due to the plethora and variety of situations where the application of KM would have the potential to bring benefits. The authors suggest that there should be a shift from attempting to provide a generic KM solution to pursuing a more adaptive approach, which has led to the conceptualisation of the GOKM (Goal-Oriented Knowledge Management) framework. GOKM will incorporate multi-perspective guidelines that take into account strategic, technological and cultural aspects of KM as well as having an in-built mechanism for continuous self-assessment and realignment to organisational goals. The research agenda that has been formed in order to tackle each of these KM perspectives is described in the following section.

Research Agenda

The research activities of the GOKM project have been grouped into five major phases. Each of the last four phases corresponds to a KM issue that needs to be addressed in order to develop a comprehensive theory. These phases have been defined as follows:

Phase I: The initial pilot study to include literature review and new theory development for the GOKM framework and a methodology adapted to Danwood's environment.

Phase II: Investigation of the strategic aspects of KM in order to identify or develop a suitable strategy for deploying KM initiatives at Danwood.

Phase III: Review and evaluation of KM technology that will be able to support the chosen KM strategy and an overall goal-oriented approach.

Phase IV: Study of the cultural factors affecting KM and how to include this perspective in the GOKM model. The key question to be answered in this phase is "Should KM efforts be adapted to organisational culture or vice versa?".

Phase V: Case study of the implementation of GOKM and an adapted methodology at Danwood with evaluation provided by tangible as well as intangible KM metrics. This process will aid in the verification and possible refinement of the theory.

THREE GENERATIONS OF KM: AN OVERVIEW

McElroy (2000) classifies KM approaches as *supply-side* and *demand-side*. Supply-side KM focuses on providing the relevant knowledge on-demand to the individual, from a top-down perspective, and is usually technology-centric in its orientation (capturing, codifying and sharing knowledge). Demand-side KM focuses on satisfying organizational demand for the production of *new knowledge*. The emphasis in this approach is on knowledge creation from a bottom-up perspective and is usually people-centric in its orientation (collaboration, organizational learning and innovation). Based on this division McElroy identifies two generations of KM. The first generation (FGKM) being supply-driven while the second (SGKM) being both supply- and demand-driven, thus providing a more balanced approach.

In 2001 McElroy claims that all the FGKM efforts of addressing inadequate knowledge sharing through the development and application of IT systems fall short because they subscribe to fundamentalist supply-side dogma. He underlines that FGKM practitioners wrongly believe that better organisational performance is guaranteed to follow the enhancement of knowledge transfer. In the same year Johannessen et al. underline the overoptimistic view of technology as a KM enabler and how this de-emphasizes the use of tacit knowledge, an organisational asset that plays a key role in determining the extent to which a company is able to sustain competitive advantage. The emphasis of SGKM is therefore on high-performance organisational learning, not just better knowledge sharing. McElroy (2001) defines SGKM as "a management

discipline that focuses on organizational learning with business innovation and competitive advantage in mind". He also concludes that although SGKM emphasizes knowledge production (demand-side thinking), it does not discount the importance of FGKM codification and sharing (supply-side thinking). Skyrme (2000) also recognises the evolution of KM into a second generation. He underlines that effective KM is as much about social factors such as communities, personal development and working environments, as it is about information processes and technology.

First- Vs Second-Generation Knowledge Management

In 1997 Rapley presents a series of case studies performed at British Airways and demonstrates a typical example of FGKM initiative. Advanced IT systems were deployed to capture expertise, redesign working practises, support decision-making, enhance change management and share innovative views and perspectives. Rapley defines all of the above as a KM program that demonstrates clearly defined links to bottom-line business benefits. In 2000 Hitt et al. follow a similar approach but without failing to recognise the importance of tacit knowledge and how difficult it is to codify, articulate and communicate. However, they also state "the tacit dimension does not suggest that knowledge cannot be codified". In their view tacit knowledge is best described as knowledge that has not yet been explained.

In the same year, Storey and Barnett express an opposing view: the most important learning occurs while applying and acting upon tacit knowledge. Attempts to codify tacit knowledge may only produce knowledge that is: useless (too difficult to explain), trivial, redundant (if subject to change), irrelevant to a wider audience, politically naïve, inaccurate or easily codifiable. Desouza (2003) presents a similar view by stating that the most important knowledge resides in the minds of individuals and that an advanced IT solution will not be enough to motivate members of staff to share their knowledge.

The difficulty in motivating members of staff to participate in KM efforts has been a topic discussed by many researchers and practitioners in the field. As a first logical step organisations have attempted to link financial rewards and similar benefits to sharing knowledge. In 2001 Walsham discusses how this logical approach may have questionable chances of succeeding. He illustrates this through a case study at an advertising company where the "creative" members of staff were encouraged to share knowledge in accordance to a reward system. The scheme showed little success of collaborative behaviour, even between people that were on the same managerial level. The message that Walsham is putting across here is that bare financial rewards are not enough to encourage members of staff to release their "competitive" knowledge. According to Huysman (2002) participation in KM activities cannot be forced because people will only share important knowledge at their own discretion. As the owners of that knowledge, people are empowered to decide when, how and with whom it is to be shared. Therefore, organisations will only be able to enter the second generation of KM by recognising this fact and acting accordingly. They must focus on creating an environment for knowledge sharing that is not driven by competitive motives. Huysman also observes that people feel the urge to learn and share knowledge with others when they feel that this would help them to perform work tasks more effectively leading to improved job satisfaction, recognition by significant others and contribution to individual development. The most common organisational reward systems do not have the ability to provide such benefits. From this it can be concluded that intangible rather than tangible benefits are a higher

Table 1: Differences between first- and second-generation of knowledge management

Research Question	1st Wave	2nd Wave
Why is knowledge shared?	Managerial needs	Part of daily work; as a routine
When is knowledge shared?	When there is an opportunity to do so	When there is a need to do so
Where is knowledge shared?	Operational level	Organization-wide
Whose knowledge is managed?	Individual capital: human capital	Collective: social capital
What knowledge is shared?	Codified	Tacit and Codified
How is knowledge shared?	Repository systems and electronic networks	Via personal and electronic networks

stimulator of collaborative behaviour in KM. The role of managers also changes in this generation from being the main drivers of KM to being a supportive resource that aids in creating the opportunity for knowledge exchange and development. Huysman places the second level of KM evolution on social capital and knowledge connections between networks of tacit contexts. Table 1 summarises Huysman's list of identified differences between first- and second-generation KM.

The Rise of Third-Generation Knowledge Management

As an extension to McElroy's classification of first- and second-generation KM this paper proposes that a third generation of KM has already emerged. In September 2001 the APQC (American Productivity & Quality Center) held a conference in Houston entitled "Next-Generation Knowledge Management: Enabling Business Processes" and as the title hints, promoted the notion of business process-oriented knowledge management – the third generation of KM (TGKM). As early as 1999, Armistead examines knowledge from an operational perspective and its ability to improve organisational performance. KM efforts are focused on business processes that require important knowledge in order to be efficiently performed. Once knowledge has been created, transferred, embedded and applied into business processes, these processes are revitalised as "knowledge-rich processes". In 2001 Heisig provides more justification for the business process-oriented focus of TGKM. KM from an organisational perspective should aid in the delivery of a product or the provision of a service to a client. This product or service has been produced through the fulfilment of specific tasks, which are interlinked thereby forming business processes. By taking the view of knowledge as a resource to these processes, KM activities are to be integrated and embedded within the process structure. Heisig also underlines how very few practitioners and researchers seem to have explicitly acknowledged this relation or attempted to systematically integrate KM activities into business processes. Choi and Lee (2002) seem to agree with this observation by stating that although managing knowledge relies on process more than objects, very few empirical studies have been explored from a process-oriented perspective. In contradiction to the above, Magnani (2001) describes the findings of a study of 80 companies over a 5-year period that showed how the business process-oriented approach to KM had emerged as the highest performer. Sopheon, the sponsor of Magnani's research, published official figures based on the survey that clearly demonstrated the case. As presented in Figure 1, forty percent of the participating companies followed a KM initiative that focused on business process with thirty percent of these experiencing high impact benefits.

DEVELOPING A GOKM METHODOLOGY AT DANWOOD

Numerous methodologies, each subscribing to the guidelines of the developing GOKM framework, could be developed and adapted to an organisation's goals. For example Xerox, one of the world's largest document companies, would most likely be interested in a KM solution that focuses on providing long-term benefits and sustaining competitive advantage. In fact, Xerox did develop a successful KM program that subscribed to SGKM theory, as part of its 15-year strategic plan (Ahmed

Figure 1: KM Approach of companies participating in the Sopheon Study

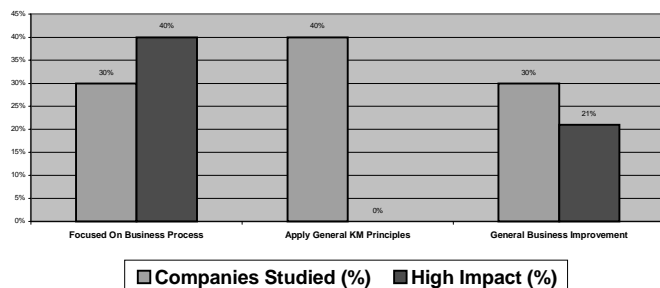
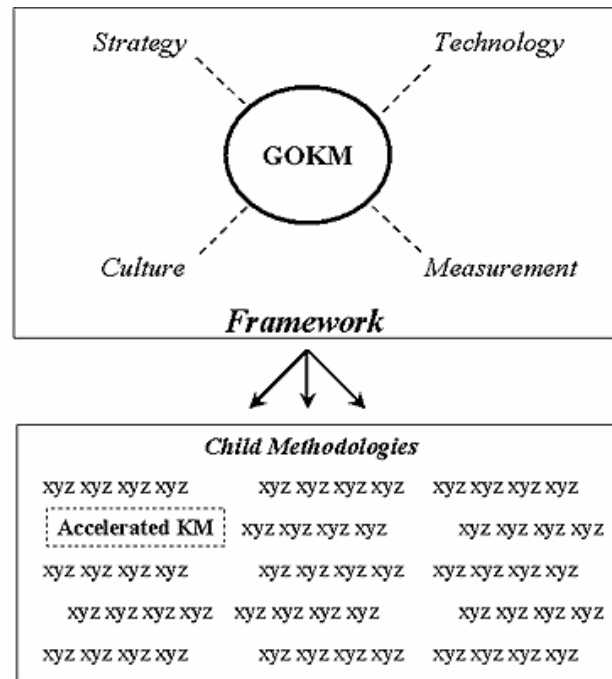


Figure 2: The GOKM Framework and Child Methodologies (Accelerated KM for Danwood)



et al., 2002). The main focus was set on sharing knowledge through an electronic community that was technologically supported via a new IT system called Eureka. The project proved to be very successful and set the example for other organisations worldwide. However, this approach would not be suitable for a company of smaller size, like that of Danwood, which has less funding available for investment in KM and requires business-term results. An attempt to follow a SGKM approach at Danwood would most likely result in the project being withdrawn because tangible results, such as *return on investment* would not be in view fast enough.

In 2001 Morey extends the business process-oriented approach further by combining TGKM with Goldratt's (1994) operations theory in search of KM that will achieve faster bottom-line results. Morey argues that many KM programs operate under the assumption that all improvements from KM-enabled learning are equally beneficial. Because of this, organizations spread their KM investments too thin on company-wide initiatives that consequently do not produce near-term business results. Morey proposes that KM needs to be viewed as a continuous process that first discovers where knowledge is needed to address a restriction on the performance of critical business processes and then implements an appropriate intervention in the knowledge development cycle. This intervention will accelerate the transfer and application of required knowledge to the corresponding business process. Morey's KM model provides the starting point for the development of *Accelerated Knowledge Management*, a methodology that will be adapted to Danwood's business goals and objectives, while subscribing to the strategic, technological, cultural and evaluative guidelines of GOKM (see Figure 2).

SUMMARY AND CONCLUSIONS

The review of KM literature that took place during the pilot phase of this project has revealed intense fragmentation in the KM discipline with regards to the competing schools of thought and the effect that background, industry, perspective and motives have had on the fundamental definition of KM. This paper has argued that the focus of research should be redirected from pursuing a generic KM definition to defining the purpose of managing knowledge within an organisational context. In a similar manner this paper has also argued that defining a

Goal-Oriented KM framework and adaptive methodology would have more potential for success than focusing research on the design of a generic KM model. The three generations of KM have been described and contrasted. Morey's (2001) combination of third-generation KM with operations theory has been selected as a starting point for developing Accelerated Knowledge Management, a methodology that will be adapted to the sponsoring organisation's environment while subscribing to the guidelines of GOKM.

REFERENCES

- Ahmed, P., Lim, K., Loh, A. (2002), *Learning Through Knowledge Management*, Butterworth-Heinemann, Oxford, pp 289-313.
- Armistead, C. (1999), "Knowledge management and process performance", *International Journal of Knowledge Management*, Vol 3 No 2, pp. 143-57. Available: <http://www.emeraldinsight.com/rpsv/~1119/v3n2/s5/p143>
- Choi, B. and Lee, H. (2002), "Knowledge management strategy and its link to knowledge creation process", *Expert Systems with Applications*, Vol 23, pp. 173-187. Available: <http://www.elsevier.com/locate/eswa>
- Desouza, K.C. (2003), "Knowledge management barriers: Why the technology imperative seldom works", *Business Horizons*, Jan-Feb, pp. 25-29. Available: <http://www.sciencedirect.com>
- Goldratt, E. (1994), *Theory of Constraints*, Gower Publishing Ltd, Aldershot, UK
- Heisig, P. (2001), "Business Process Oriented Knowledge Management", in Mertins, K. (Ed.), Heisig, P. (Ed.), Vorbeck, J. (Ed.), *Knowledge Management: Best Practises in Europe*, Springer, Berlin, pp 13-36.
- Huysman, M. (2002), "Knowledge Sharing in Practice", *SAP Design Guild*, September. Available: http://www.sapdesignguild.org/editions/edition5/km_mh.asp
- Lucier, C. (2003), "When knowledge adds up to nothing: Why knowledge management fails and what you can do about it", *Developing and Learning in Organizations*, Vol 17 No 1, pp. 32-35. Available: <http://www.emeraldinsight.com>
- Magnani, D. (2001), "How to Create Business Value with Knowledge Management Solutions That Work", in Jones, R. (Ed.), *Captured Knowledge: Presentations and Notes of the Fifth KMWorld Conference and Exposition*, Information Today Inc, Medford, New Jersey, pp. 181-96.
- McElroy, M. (2001) "Second-Generation KM: A White Paper", in Jones, R. (Ed.), *Captured Knowledge: Presentations and Notes of the Fifth KMWorld Conference and Exposition*, Information Today Inc, Medford, New Jersey, pp 204-212. Available: <http://www.ingenta.com>
- McElroy, M.W. (2000), "The Professionalization of Knowledge Management", *Presentations of 'En Line @ 2000' Conference*, Cintermex: Monterrey, NL, Mexico. Available: <http://onlinea.mty.itesm.mx/presentaciones/MarkMcElroy.ppt>
- Morey, D. (2001), "High-speed knowledge management: integrating operations theory and knowledge management for rapid results", *International Journal of Knowledge Management*, Vol 5 No 4, pp. 322-28. Available: <http://www.emeraldinsight.com/rpsv/~1119/v5n4/s4/p322>
- Roy, R. (2001), *Industrial knowledge management : a micro-level approach*, Springer, London.
- Skyrme, D.J. (2000), "Knowledge Management: Has It Peaked?", *Knowledge Insights*, No 46, David Skyrme Associates. Available: http://www.skyrme.com/updates/u46_f1.htm
- Wiig, K.M. (1997), "Knowledge Management: An Introduction and Perspective", *Journal of Knowledge Management*, Vol 1 No 1, September, pp. 6-14. Available: <http://www.ingenta.com>

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