

REFLECTIONS OF A KNOWLEDGE OFFICER

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ABSTRACT

The paper recounts the observations of the author, following his appointment as a full time Knowledge Officer within the UK's Defence Science and Technology Laboratory, Dstl. The author was charged with the task of implementing a Knowledge Management (KM) programme within one part of the organisation. During his appointment, the author came into contact with a plethora of training courses and theoretical frameworks relating to KM. The paper will compare the practical experience of trying to implement KM concepts and behaviours, with the theory. Advice is given on approaches to avoid, and on the perceived value, and dangers, of applying the theory verbatim.

1. INTRODUCTION

The Defence Science and Technology Laboratory (Dstl) was formed, on 1 July 2001 from part of its predecessor organisation, the Defence Evaluation and Research Agency (DERA), both scientific organisations owned by the UK's Ministry of Defence (MoD). Dstl's role is primarily to provide technical consultancy and research services to Government in support of the UK's Armed Forces.

Two of the drivers for the formation of Dstl, were first, a reduction in funding for basic research within the MoD (in comparison with the time of the Cold War for example), and second, changes in the external technology environment. It is increasingly important for the UK's Armed Forces to exploit the rapid pace of technological change in the commercial world (e.g. in telecommunications and software). Both these factors make the exploitation of knowledge and information core to Dstl's mission, and the recognition of the importance of Knowledge Management (KM) as a key business discipline.

During its existence (from around 1995 to 2001) DERA underwent a gradual transformation from being a Government Department to a more commercially oriented organisation carrying out, in part, work for non Government customers. As part of its strategy to improve internal effectiveness, DERA undertook a KM Programme. A key part of the KM Programme was the appointment of 'Knowledge Officers' (KOs), normally volunteer staff from each of the main business areas (about 15 in all). The KO's role was to act as a communication channel between the centrally directed programme and the business areas. As appropriate, the Knowledge Officers would run related projects in their business areas. The author was appointed to be a full-time KO in 1999, for the area previously known as the Centre for Defence Analysis (CDA), which had around 700 staff working on Operational Research and related activities. CDA later became the focus for all Analysis work within Dstl.

2. PLANNING A KNOWLEDGE MANAGEMENT PROGRAMME

Following appointment, the authors first task was to identify where there were perceived knowledge-related shortfalls, primarily through interview with staff. A lot of issues were raised and given the diversity of the organisation and the different perceptions of the staff (and seniority) interviewed, no individual requirements were the same. However the main shortfalls were considered to be the following:

- A lack of re-use of previous work,
- A need for greater innovation and creativity
- No effective mechanism for identifying skills and expertise internally and externally
- No effective mechanism for capturing and promulgating best-practice
- The fact that key knowledge is associated with a relatively small number of experienced individuals, making Dstl and its customers vulnerable to a loss of these staff

The issues identified were considered to be significant (i.e. non-trivial), affecting all business processes and all staff within the organisation. The issues were considered to be real and current despite the progression of the DERA KM programme and a variety of more local business improvement initiatives. With no additional resource apart from the KOs time, a proposal was put forward to senior management to run a series of projects aimed at the shortfalls identified. These were:

- Increased Customer awareness
- Improved working practices
- Promotion of a skills database
- Improved integration of project information
- Improved access to customer reports
- Training in the use of IT and Information retrieval techniques
- Introduction of a formal mentoring programme
- The introduction of a simplified staff suggestions scheme

After a period of consultation, these were short-listed and modified to the following 4 projects:

1. Improving KM Awareness

This project involved a variety of communications aimed at raising awareness of the importance of KM to Dstl and the necessary behaviours that support it. A large part of the project was the identification and mentoring of a large group of KM Facilitators, individuals

who expressed a personal interest in KM and who were willing to assist and educate their immediate colleagues. In addition, the author gave presentations to various groups, and produced a variety of paper and electronic communications on KM.

2. Improved Working Practices

This project was aimed at identifying and improving the fundamental generic working practices in CDA (i.e. how things 'must' and how things 'should' be done), ensuring that these are accurately described in an internal operations plan Plan and in an Intranet based guidance tool. The project aimed to introduce a more effective mechanism for dealing with the output of learning reviews, project closure reports and staff suggestions for business improvement.

3. Determination of 'KM Software' requirement

This project aimed to determine CDA's requirement for dedicated KM software and to recommend a suitable Commercial 'off the shelf' solution. Dstl had inherited a number of separately controlled databases for information storage (for project, finance, staff information etc.). CDA itself had created a number of bespoke databases for collating more specific information to meet its perceived needs (e.g. studies, resourcing, and marketing information). None of these separate information 'silos' were connected and different solutions had grown 'bottom up' to meet similar business needs.

4. Electronic report storage and access

This project aimed to provide desktop access to a searchable electronic format through a secure internal IT network. Because of the sensitivity of some of the analysis carried out within CDA, the production, handling and storage of reports had until recently been carried out entirely manually (i.e. paper). However the staffs expectations of information availability had been raised over time because of their use of the Internet, and the staff increasingly required instant 'desktop' access. Increasing the access and hence re-use of Dstl wide generated customer reports is still considered a priority and this objective is now being pursued centrally within Dstl.

The programme ran for around 1 year. A number of the activities have carried on, on a pan-Dstl front, primarily under the umbrella of Dstl's Knowledge Services Department.

Because of the perception of the KO, during the requirements phase of the project, that the greatest challenge to improving KM in CDA was behaviour change, by far the greatest time and resource was spent on project 1 'Improving KM awareness'.

3. THE APPLICATION OF KM THEORY TO PRACTICE

Three theories related to the field of KM are recounted below because of their perceived relevance to implementing a KM programme. Outside the 'KM community' these theories do not appear to be well known, despite their significance for understanding organisational learning.

3.1 Sensemaking

Sensemaking is a term used to describe the process by which individuals make 'sense' of a problem by combining information (including the knowledge of others) with their (initial) understanding of the subject area. Fundamental to the process of sensemaking is how individuals learn from their external environment, and in particular how they communicate with it (notably with other people). There are a number of different models of sensemaking, see for example Weick K E (1995). In essence many of these are based on the idea that people 'construct' mental images and 'models', which they use (iteratively) to understand and make sense of the World around them. Language, individual psychology and (past) individual experience all determine the ability to 'sensemake'.

An example, in the context of this paper, is the difficulty of understanding what KM actually 'means'. Different perceptions of the meaning of the term 'KM' was a major challenge for the KM programme.

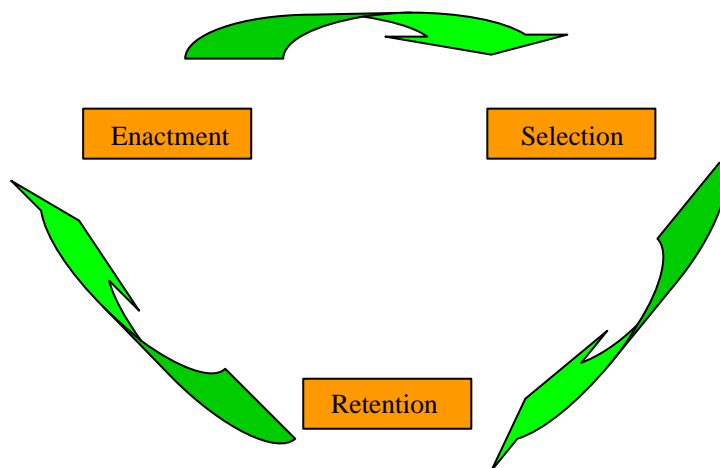


Figure 1. Schematic illustration of the process of sensemaking in individuals.

Arguably, more important still to Dstl are the different perceptions of potentially 'common' problems by experts from different specialisms, and at different levels of understanding. This barrier to knowledge exchange is considered more common in practice than the 'knowledge is power' paradigm, which is often taken, at face value, to be a primary problem in 'expert'

cultures. In Dstl, it is considered that knowledge transfer is inhibited less by a 'lack of willingness to share knowledge', rather than an 'inability to share knowledge' caused by a lack of commonly derived mental models.

3.2 Knowledge codification

There are many models from KM theory (see for example Nonaka I and Takeuchi H (1995)), associated with describing how inherent human knowledge can be converted into an explicit, codified form for subsequent use by others. One of those models, is the tacit-explicit knowledge spectrum as described by Stahl, G (1993).

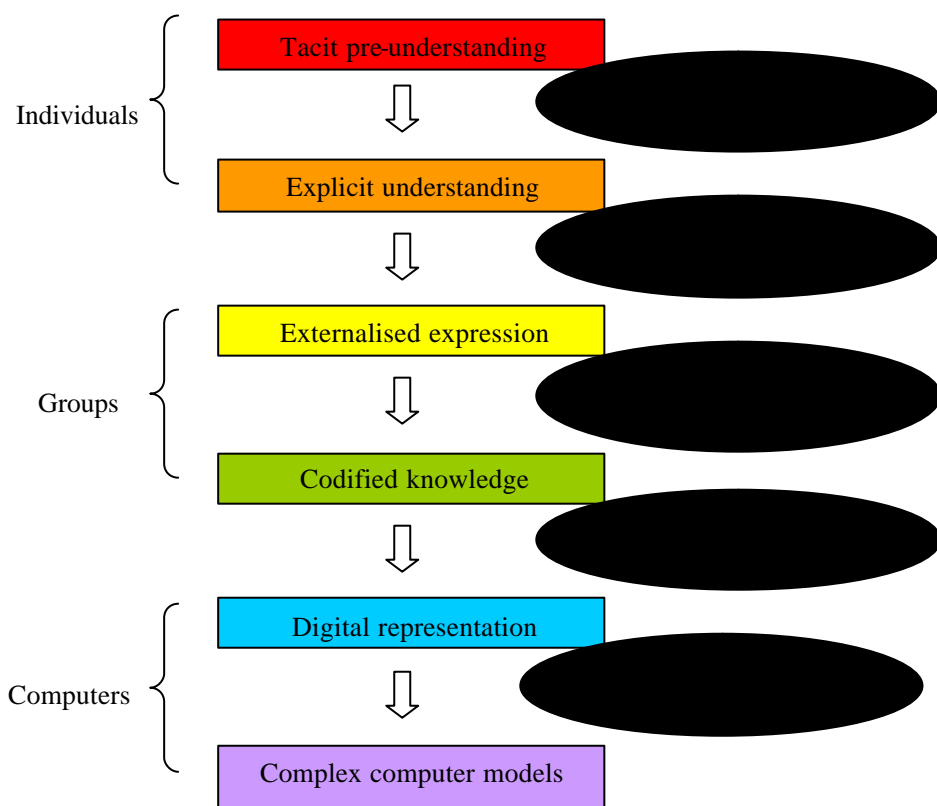


Figure 2. Diagram illustrating typical stages of transformation of knowledge from the tacit pre-understanding of individuals to the use of explicit computer-based models. The processes associated with each transformation are indicated on the right.

Because each transformation from one 'knowledge state' to another is an act of interpretation, there is no such thing as objective representation or codification. Due to the act of interpretation something 'is lost' and something 'is gained' at each transformation. The codification (and hence re-use) of knowledge is therefore a far from simple or straightforward process. Since individuals can read different interpretations into the same representation, it is impossible to talk about stored knowledge whose meaning is fixed and ambiguous. This hypothesis cautions against a purely information storage approach to KM. Also a major thrust of CDA's analytical studies has been the reliance on software models as representations of the performance of military systems. Some models may take many years of development, and without careful documentation and tutoring of new staff, there is a danger that the output of the models can be misinterpreted, without the contextual knowledge of the staff who originally created them.

3.3. Communities of Practice

The recognition that knowledge transfer is in part a social process has led to the concept of a Community of Practice (CoP). A CoP is a group of people who have worked together over a period of time and through extensive communication have developed a common sense of purpose and a desire to share work-related knowledge and experience, see for example Brown S J and Duguid P (1998). There are typically many CoPs within a single organisation, and most people 'belong' to more than one of them, with members being drawn together through social and professional drivers. To an extent, CoPs undermine an organisation's formal structure, but they are tolerated, as they make a valuable contribution to an organisation's learning. The notion of *practice* is critical in a CoP, where members of such groups concentrate on what emerges through *working*, or practising a craft, rather than their 'book knowledge'.

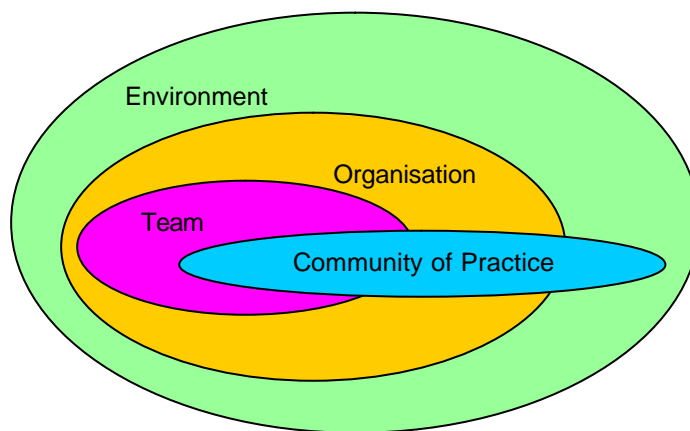


Figure 3. The communities of practice that individuals belong to may cut across organisational boundaries and even transcend them (for example, professional institutions).

A number of organisations, including CDA at one time, have attempted to manage or 'contrive' CoPs. Indeed there are a number of well-publicised training courses encouraging the instigation of CoPs as a sensible management intervention. In the case of CDA only a small fraction of the contrived CoPs were considered 'successful' by the Management or the staff and in their case, this appeared to be because of effective leadership, a real, rather than a contrived purpose to the group, and an already established social infrastructure.

4. LESSONS LEARNED

Lessons learned during the duration of the KM programme are recounted below in the style of a 'ten commandments'. Although the Bible uses a long narrative style to describe its message, the ten commandments represent a succinct and effective way to provide guidance to an intended audience.

1. Don't expect others to value KM in the way that you do.

Given the job of running a KM programme, it is important to be a strong champion of the cause but recognise that you are likely to be 'in the minority'. At face value, some staff are enthusiastic about the concepts of KM, but then don't always see its relevance to changing the way they *themselves* work. The Middle Managers, perhaps because they are the individuals held responsible for the delivery of short-term objectives, tended to be the least enthusiastic or co-operative group to deal with. Since gaining the co-operation and involvement of the staff is a requirement for success (many of whom may be senior), learning how to persuade and influence others is an essential skill for the KM practitioner.

2. Don't try to 'manage knowledge' without managing the organisation in the first place

This commandment has 2 facets to it. First KM, like other business improvement initiatives (e.g. Total Quality Management) can be seen as a new 'cure-all'. Second, since knowledge is the vital resource in modern organisations, KM and Management practice itself are to an extent synonymous. It is worth recognising that many conventional management themes (Leadership, empowerment, and information management) are consistent with the needs of KM. The value that KM brings to conventional management thinking is perhaps, a new perspective, see for example Blackler F (1995).

3. Don't ever talk about 'Knowledge Management'

Given the importance of effective persuasion, staff who may be resistant to change for a variety of reasons, can be suspicious of the language of KM, particularly since it is so profound (e.g. the use of 'knowledge' and 'management'). It is important to use more familiar language. This approach avoids the interesting, but diversionary, debate popular with some audiences about the nature of knowledge and whether indeed it can be managed at all! Words like information and learning are recommended as less evocative words to use.

4. Don't be *seen* to take a centralised approach

Whilst the 'benefits of scale' of a KM approach come from the ability of different parts of the organisation to access knowledge from a common 'repository', historically this is rarely the case. In practice the different 'business areas' in Dstl had developed local mechanisms for their information and knowledge needs. Some degree of centralisation to information management is desirable in the long term, but consider adopting a federalised approach in the medium term and

the best approach will maintain a central vision whilst building confidence by meeting local needs at the same time.

5. Don't forget the staff

Individuals within the organisation will already be doing KM in one way or another (only they won't call it that) and it is better to build on potential areas of success, or work with those staff who have a particular business need or personal interest in KM.

On a wider front, training has an important role to play in developing appropriate behaviours. There is little benefit in providing greater desktop access to information, if staff do not possess the skills they need to extract it, or indeed an inclination to do so.

6. Don't forget the obvious

Some of the most valuable KM initiatives can be the most straightforward, for example the enhancement or instigation of coffee rooms, the instigation of a functional telephone directory, or mentoring programmes.

7. Don't forget sustainability

The KM programme followed on from a number of previous initiatives (and individuals) with well considered programmes of work, but from which little sustained improvement resulted. Of the Intranet based tools that remained, these had become out of date, creating a lack of confidence in their use. Aim for simple solutions that don't require large resources to maintain, and attempt to embed the behaviour change processes, with line management support. True success is achieved when 'KM activities' have become indistinguishable from mainstream activities.

Although unsustainable solutions bring no lasting value, they can however be useful 'confidence building' measures along the way.

8. Don't forget to talk

Many KM problems are in essence, communication problems. Fundamental to the subject of KM, are the different perceptions of a 'business' problem by experts from different specialisms. Given that Dstl has staff with tens of years of specialised experience, the 'communication problem' can be quite common.

9. Don't try to do it all at once

Since KM impacts on all facets of the organisation, a programme of work to address all the perceived shortfalls, is likely to be very large. With few resources and no track record in KM, it is recommended that programmes start with short-lived pilots that build confidence and address real

concerns. Having said that it is wise to take an incremental approach, it is also important to maintain a holistic view of all related activities, and try to steer them towards potentially common solutions

10. Don't believe a word I've said

This commandment is a reminder that it is crucial to have a good understanding of the specific business environment (climate) and objectives of the organisation, rather than apply KM solutions 'off the shelf'. Whilst external consultants can bring useful skills and knowledge to any KM programme, it should be led by internal staff, who are well connected within the business.

Although the context is different, human nature will be the same!, and so there are likely to be common issues between programmes run in different organisations. The findings described in this paper might however be most applicable to Public Sector and science based organisations.

5. CONCLUDING REMARKS

Whilst every effort should be made to integrate KM with current activities, any separate KM programme will always be competing for resources (including time) with 'mainstream' and current activities. Since KM tends to bring benefit over the long term, it is likely to be treated as a secondary issue, unless championed without compromise (and fully understood) by the most senior staff in the organisation. KM practitioners therefore have an important supporting role to play in improving the understanding of KM by their colleagues, and in building confidence by providing solutions to known problems. Concentrating on pragmatic issues like training and the development of coherent information repositories is a good place to start.

Practitioners are encouraged to make better use of the widespread theoretical frameworks that exist on KM, but must be selective and sensitive to context in their application. In tandem with this, academics are encouraged to make their theories more applicable and explicit for the practitioners. Without this, there is a danger, to the detriment of the cause of KM, of the two CoPs of 'practice' and 'theory' never sharing a common 'mental model', or as is more common, one community being misinterpreted by the other.

6. REFERENCES

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