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# A Process View of Knowledge Management: It Ain't What you do, it's the way That you do it

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**Abstract:** Knowledge management needs to consider the three related elements of people, processes and technology. Much existing work has concentrated on either people or technology, often to the exclusion of the other two elements. Yet without thinking about process – the way people, organisations and even technology actually do things – any implementation of a knowledge management initiative is at best risky, and at worst doomed to failure. This paper looks at various ways in which a process view has appeared, explicitly or implicitly, in knowledge management research and practice so far, and reflects on how more “thinking about process” might improve knowledge management in the future. Consistent with this overall viewpoint, the issues generally centre less on what a process view would suggest should be done, but rather on the way that it would be implemented in practice.

**Keywords:** KM theory, process, KM practise, KM research

## 1. Introduction

Knowledge management in organisations has been a well-documented activity for at least 15 years (Davenport & Prusak, 1997; Nonaka, 1994) and was being carried out for many years – probably centuries – before that. Nevertheless, many organisations - or rather their managers - still find knowledge management somewhat of an uphill struggle, especially when it comes to implementing the plans they have decided upon.

As a relatively recent field, it might be thought that this difficulty results from an absence of theory, but even a brief review of the literature makes it clear that this is no longer the case. For example, there are now some 20 journals in knowledge management or closely related fields (Bontis & Serenko, 2009); while a search on ISI Web Of Knowledge™ for articles including the phrase “knowledge management” returns over 10,000 items (Edwards, Handzic, Carlsson, & Nissen, 2003; Ruggles, 1998; Serenko & Bontis, 2004).

While it remains true that there is no one agreed “unified theory of knowledge management”, our conjecture here is rather that managers do not place enough emphasis on certain parts of the established theory. A description of knowledge management as consisting of people, process and technology is well known (Edwards, 2009), but we will argue that the emphasis has been too strongly on technology and people, with insufficient attention paid to the process element.

A good analogy for trying to implement a knowledge management initiative in practice is with learning to drive a car/automobile. In the UK, and in many other countries, a learner driver has to pass a theory test before being allowed behind the steering wheel at all. However, there is a big difference between: doing the theory test, sitting in the front passenger seat while someone else drives and actually driving the car yourself. The first one is completely safe - the worst that can happen is that you fail the test and have to take it again. The second should be safe, too, as long as you have a reliable driver; the passenger does not have to concentrate on steering, clutch or gears, let alone other road users, and can sit back and enjoy the ride, and perhaps the view. But if you can recall your earliest efforts at driving you will surely remember the shock you received when you first had to do all these things for yourself - even if someone else was telling you where to turn, as usually happens with learner drivers. Becoming an accomplished driver needs practice and understanding in addition to theoretical awareness and knowledge.

Knowledge management has much the same three stages as learning to drive. Most managers are now familiar with some of the theory of knowledge management, at least, and many of those more recently qualified at university will have studied a module in knowledge management. Those thinking about implementing a knowledge management initiative in an organisation will also probably have “sat in the passenger seat”; by this we mean that they will have read articles or books about the experiences other organisations have had when implementing knowledge management. Indeed, over

the last few years the possibilities for “reading” about what others have done have expanded to include message boards, forums, and blogs such as KnowledgeBoard and the activities coordinated by David Gurteen, although we do not recall having seen any knowledge management initiatives on YouTube - yet! Nevertheless, whatever the medium, when the knowledge management initiative is in another organisation, then someone else is still doing the driving.

That third stage, implementing knowledge management initiatives yourself, presents a step change in difficulty. General awareness of knowledge management theory is one thing, but understanding is quite another. This leads to the commonly heard comment (see for example Tillian (2001), Carrillo & Chinowsky (2006), and the UK National Health Service library on knowledge management at <http://www.library.nhs.uk/KNOWLEDGEMANAGEMENT/>) that “we know about knowledge management as a concept, but how do we do it?” That final phrase is really the focus of this paper - how we, or they, do it.

The paper is structured as follows: we first look at knowledge management theory and explain in more detail the reasons why managers should think more about process - the way things are done, rather than what is done - when implementing knowledge management initiatives. We then go on to consider what process thinking means in knowledge management terms. Finally, we look at the implications of this process thinking for knowledge management practice and research.

## **2. Knowledge management theory**

We will, unusually, take a somewhat backward chronological perspective in order to explain the place of process thinking in knowledge management theory. By ‘backward’, we mean that we will look at the present situation first and then describe how it came to be that way. Knowledge management is still a relatively young field, and despite the thousands of publications there remain many areas of disagreement between different knowledge management specialists. Nevertheless, there has long been general agreement that “doing” knowledge management is not easy (Ruggles, 1998) and that there is no “one size fits all” solution - no single way that knowledge management can be successfully implemented in an organisation. The empirical work of our own research teams at Aston over the past ten years or so bears this out. In that time we have seen:

- ☺ Organisations where knowledge management has been successful
- ☹ Organisations where an ongoing knowledge management initiative has had little or no impact
- ⊖ Organisations where knowledge management has gone well for a time and then stopped
- ⊗ Organisations where knowledge management can’t get started

For example, we found in Edwards (2005) that over a two-year period, of 16 organisations examined, eight had made progress in their knowledge management initiatives, four were at about the same stage, three had gone backwards and in one case all trace of the knowledge management initiative and the group in charge of it had completely disappeared. Our experience has included organisations where knowledge management has become part of the fabric of the way the organisation works, such as the Mortgage Code Compliance Board (Shaw, Hall, Baker, & Edwards, 2007) and those where it has suffered badly because of the departure of key individuals, such as the organisation referred to as Restaurants in Shaw & Edwards (2005). We have also been talking to at least one organisation about the possibility of “doing something in knowledge management” for more than five years without any concrete initiative resulting.

Let us see how this might have come about. Our diagnosis of “The Problem” in “doing” knowledge management is as follows. Managers seem to be happy about the basic principles of knowledge management in isolation but they have trouble in applying the ideas to their own organisation. In addition, it is not just a problem for managers: knowledge management is everyone’s problem (Edwards, Shaw, & Collier, 2003). We have, for example, found that the workforce may have difficulty in doing what the knowledge management initiative recommendations suggest that they should. In one case we were working with a manufacturing organisation referred to as ManufIndProd in Edwards et al (2005) and Edwards & Shaw (2004). This organisation had been formed by a management buy-out not long before. Previously it had been just one manufacturing site within a much larger and more diverse organisation and all major initiatives had come from head office. That head office was seen as being remote culturally as well as geographically. For example, it was very rare for managers from head office to visit the site, and the workforce were not expected to make suggestions for consideration by head office either. As a result, the response of the workforce to most new initiatives

was to report back to head office in such a way as to suggest that the initiatives were going ahead, but actually to carry on working in the same way they had always done. With a high proportion of long-service employees, this tradition of only paying lip service to what were seen as "management" ideas was very hard to shake off, even in the new climate where "management" was a visible, known presence every day who actively wanted the workforce to participate in making all new initiatives - including those in knowledge management - work successfully. This was not just a cultural change, but also one of learning and understanding: the employees had previously regarded management ideas as being only for the management, and had ignored them as much as possible.

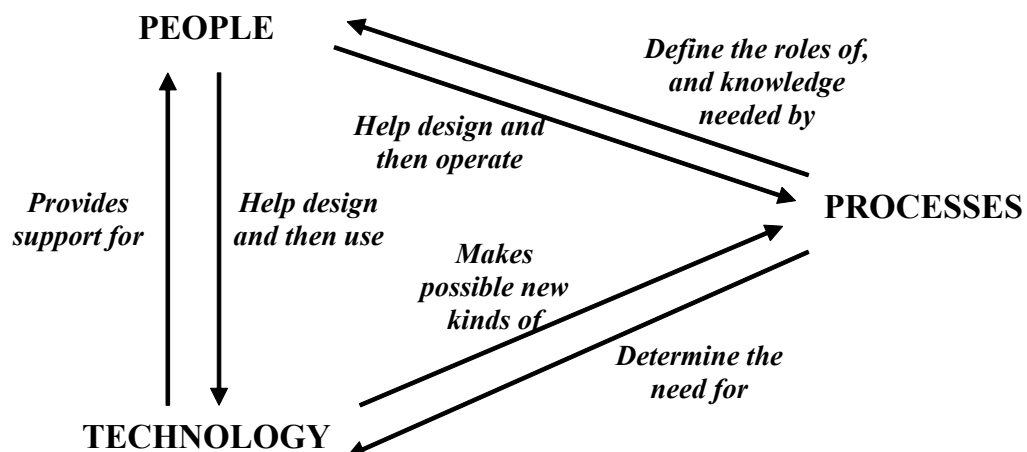
To sum up therefore, why implementing a knowledge management initiative is difficult (borrowing an idea from Rommert Casimir which he originally applied to management science):

- There is not really much disagreement about "good knowledge management", at least in general terms
- The fatal mistake is to treat knowledge management as if it were a game of chess, where there are no practical constraints and so deciding on a move (e.g. Qa4) is effectively the same as doing it...
- ...rather than as a game of tennis, where there is only one "move" (hit the ball back into your opponent's half of the court where they cannot return it), but it is making the move – implementing it - that makes it difficult - or else we would all be as good as Rafael Nadal or Venus Williams!

## 2.1 Elements of knowledge management

Knowledge management has often been described as comprising three elements: people, processes and technology. This view almost certainly has its origins as far back as the Leavitt "diamond" model of organisations (Leavitt, 1964), although Leavitt included task and structure alongside people and technology rather than processes. It is important to stress that the term processes refers to the business processes of the organisation concerned, not just to its knowledge management processes.

Figure 1 shows how these three elements link together, each of them having a reciprocal relationship with each of the other two. For example, People help design and then operate Processes, while Processes define the roles of, and the knowledge needed by People.



**Figure 1:** People, processes and technology, taken from Edwards (2009)

As well as the relationship between the three elements, Figure 1 can also be used to help conceptualise any particular knowledge management initiative, by regarding it as being positioned somewhere in the triangle with the three elements at its vertices. Examples of knowledge management initiatives near the People vertex of the triangle would be implementing directories or communities of practice. Near the Technology vertex would be implementing repositories or knowledge-based systems. Near the Process vertex would be implementing new ways to work or to build in what you want to achieve, in both cases to achieve knowledge management objectives.

We now take our backward glance at how knowledge management history has developed so far, to help understand the role of Process in knowledge management initiatives. Many authors, at least as far back as Newell, Robertson, Scarbrough, & Swan (2002) say there have been two generations of knowledge management so far (at whatever time they were writing). First generation knowledge management adopted an objective, cognitive view of knowledge, and initiatives placed a corresponding emphasis on Technology. This corresponds to the codification strategy of Hansen, Nohria & Tierney (1999). Second generation knowledge management adopted a practice-based, community view of knowledge (often described instead as “knowing”), and initiatives placed an emphasis on People, corresponding to the personalisation strategy (Hansen et al., 1999).

Other authors make a similar distinction, but from the viewpoint that both perspectives have been visible since the earliest days of knowledge management (Alvesson & Karreman, 2001; Quintas, Lefrere, & Jones, 1997; Roos & Von Krogh, 1996; Scarbrough & Swan, 2001; Sveiby, 1996).

What both of these descriptions have in common is that the emphasis has been on Technology and/or People...perhaps it is time for more emphasis on Process?

A different slant on the history of knowledge management, as adopted by others, such as Mouritsen & Larsen (2005) is that there have been two waves of knowledge management. The first wave they describe as being based on knowledge in individuals, whilst the second is based on knowledge as intellectual capital. This second wave includes much more focus on Process, as is apparent in the case example of Coloplast, a company manufacturing health care products, that Mouritsen & Larsen discuss.

### **3. What do we need to be able to do to processes?**

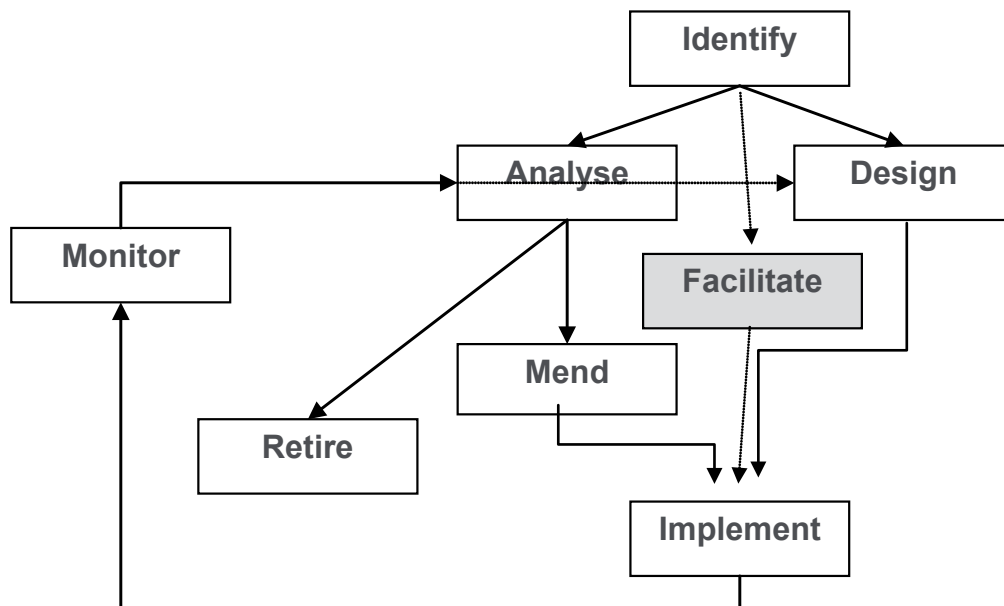
Space does not permit a full discussion of how to “think process” in this paper. Therefore, rather than presenting the usual theories that have emerged from the fields of systems thinking and business process reengineering, in this section we propose an action-oriented view of process thinking. This is based on what the people attempting to implement a knowledge management initiative need to be able to do while “thinking process”. We identify eight different activities:

- Identify processes
- Design/plan processes
- Implement processes
- Facilitate processes
- Monitor processes
- Analyse processes
- Mend processes
- Retire processes

The links between these activities are shown in Figure 2. The activities on the right-hand side of Figure 2 split into formal and informal, the latter being the Facilitate activity. This ensures that knowledge management continues to be seen as everyone’s problem, not just that of the team leading the knowledge management initiative. The formal activities further split into those activities relevant to existing business processes (leading down from Analyse) and those relevant to new processes (leading down from Design).

Changing a process can be especially risky, especially if it did not necessarily need “mending”. For example, the Ferrari F1 motor racing team had a very effective and well-honed process for carrying out the pit stops that are such a crucial part of F1 races. However, they decided to improve the method for telling the driver when the stop was complete and he could go. Previously, in the same way as all the other F1 teams, this had been done by a man holding a sign on a long stick, colloquially known as a “lollipop”, in front of the driver and lifting it out of the way when it was safe to go. Ferrari replaced it with a traffic light system which changed the existing lines of communication, and it was a communication breakdown that led to a spectacular accident at the Singapore Grand Prix in which a car drove away with the refuelling hose still attached (see the video at <http://www.youtube.com/watch?v=msXKYgTCDec>). This was a clear knowledge management failure,

in that the team had not thought carefully enough about how the person giving the driver the signal to go could be certain it was safe to do so when he was not physically in the same place as before.



**Figure 2:** Activities relevant to thinking about processes

This example leads us into the wider consideration of knowledge management and risk management, an area where we believe process thinking about knowledge management has much to offer, in the next section.

#### 4. Knowledge management and risk management

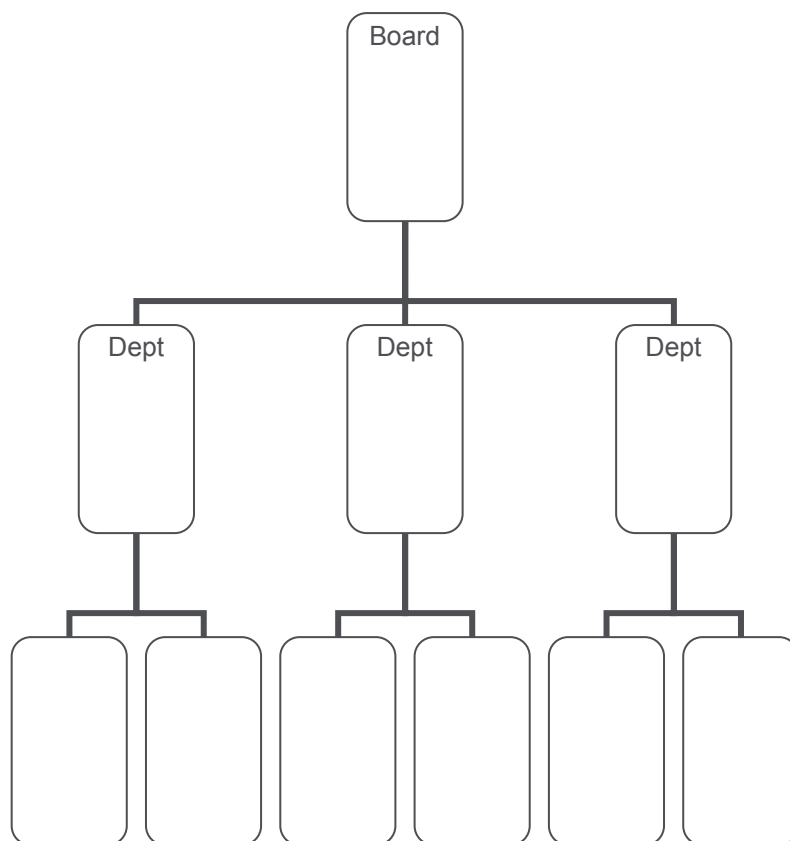
Throughout the management literature, risk management has increased priority/visibility at present. There are several reasons for this, including: the recent global financial crisis; growing concerns about natural disasters such as climate change or pandemics; and increased fear of terrorism.

Early in the development of knowledge management (Marshall, Prusak, & Shpilberg, 1996), risk management was identified as an area to which knowledge management could contribute. However, even though one of those authors (Prusak) soon became recognised as a knowledge management “guru”, progress at the interface of the two fields has been relatively slow, although some articles have appeared (Atkins, Singh, & Pathan, 2008; Carasso et al., 2005; Farias, Travassos, & Rocha, 2003; Jennex & Zyngier, 2007; Jovanovic, 1999; Lengyel & Newman, 2010; Schulte, Lentz, Anderson, & Lamborg, 2004; Tah & Carr, 2001). Recently we have been working on the links between knowledge management and risk management, the two specific sectors we have been researching being financial services, especially retail banking (Rodriguez & Edwards, 2008, 2009a, 2009b) and health care, in our case a UK hospital trust (Anthropopoulou, 2005, 2010). We draw on lessons from these two sectors here.

In any large organisation, risk management is a massive task – for example, in one Directorate alone of the hospital we studied there were over 1000 open risks at any given time according to the risk register. However, our research has suggested that there are many similarities between banks and hospitals as far as knowledge about risk management goes.

The greatest similarity is that both types of organisation tend to have a silo mentality, as is surely also still true in other sectors. This mentality has long been recognised as a weakness (Fung, 2006; Hammer, 1990) and yet is practically “built in” to the standard form of organisation chart, as Figure 3 shows. The banks and hospitals we have studied still tend to have this style of organisation: risk communication has to go up the silos and “over the top” via senior management before it can go down again – if it ever does. Anthropopoulou’s hospital interviewees said that they cannot cut across the organisation at lower levels as no-one has the boundary spanning knowledge (for example

between two different medical specialisms) to understand what is happening in two silos. In financial services, by contrast, it seems from the work of Rodriguez that different departments simply do not talk to each other, although it seems likely that in this case they could understand one another. A further similarity is that middle managers in both types of organisation focus “down” more than “up”, i.e. managing for the specific benefit of their department rather than that of the organisation. These are clear examples, in both of these very different sectors, of the limitations of thinking structure rather than thinking process.



**Figure 3:** The silo mentality - built into the standard organisation chart

Process thinking can reduce the silo mentality because processes naturally cut across the organisational silos (Edwards, 2009). Despite what managers say, especially in hospitals, those involved in “adjacent” or connecting activities within a process must be able to share knowledge. However, this does not mean they have to have completely the same knowledge. Rather, it means they must have enough common knowledge to communicate where their responsibilities overlap. We have discussed these issues elsewhere (Edwards, Hall, & Shaw, 2005).

There are two extremely important consequences in knowledge management terms. Firstly, there is a requirement that someone must oversee this communication: we use the term oversee because what is needed may be management, leadership or just facilitation. Secondly, there is a need for appropriate *Ba* (Nonaka & Konno, 1998) in which the communication can happen.

## **5. Process thinking successes and non-process thinking failures in knowledge management**

### **5.1 Process successes**

Several examples of the successful use of process thinking may be found in the knowledge management literature, although they are still in the minority. Bou and Sauquet (2004) well illustrate the benefits of process thinking compared to other approaches to knowledge management. The issue concerned documenting the process of helping unemployed people to find a job; taking a proper process view with an awareness of the knowledge required in each activity led to the production of very different documentation from that in use previously.

Spies, Clayton, & Noormohammadian (2005) describe a knowledge management initiative in Allianz, to implement an intelligent search engine. Successful construction and implementation required close attention to how searchers actually used a search engine, the crucial finding being that how searchers used it was different between different departments.

Apostolou, Abecker, & Mentzas (2007) explain how a system was implemented in a management consultancy using what they called a “knowledge management-enabled business process”.

Barcelo-Valenzuela, Sanchez-Schmitz, Perez-Soltero, Rubio, & Palma (2008) use a process approach at the heart of their knowledge management methodology. They stress the importance of identifying the core processes - what the business actually does (Edwards, 2009) – before attempting to implement knowledge management initiatives (“apply knowledge management strategies” as they call it). This is illustrated by applying the methodology to the international relations office of a university.

A previously unpublished example taken from our own research concerns an organisation responsible for obtaining timetabling information about public transport from the transport providers in its area and making it available to the would-be travelling public. Their original thinking was that they needed a “knowledge base” in the form of a codified system to retain the knowledge of the people who were responsible for providing the information, and that what they required was advice on the best software to choose for this.

However, a study from a process viewpoint revealed that codification would be solving the wrong problem. This group of people did not have any problems sharing their knowledge or supporting each other on a daily basis; arguably they had successfully formed a community of practice already. The major knowledge sharing issues were only about new staff; what happened when a different person took over the job of providing the information. Thus it turned out that the most effective knowledge management approach to take was one of improving the induction process for these staff, not trying to build a codified knowledge base at all. This was also substantially cheaper than the originally intended “solution”.

There are also several other knowledge management articles where a process view is implied but not made explicit (Ambos & Schlegelmilch, 2009; Firestone, 2008; Mansingh, Osei-Bryson, & Reichgelt, 2009; Shaw & McGregor, 2010; Smith, McKeen, & Singh, 2010).

## 5.2 Non-process thinking failure

Our own research (Edwards & Kidd, 2003) also included the example of a manufacturing company, referred to as Makelt in the paper, which had a goal of being seen as a learning organisation. Makelt’s management had a very top-down approach to knowledge management. They had identified that one knowledge management issue was a lack of knowledge sharing, and thought that better IT support, in this case in the form of groupware, was the way to address this issue. The decision to implement a groupware system was taken with little or no analysis of how knowledge sharing currently took place, or how Makelt’s workforce would like it to happen, i.e. the relevance to the business processes. Perhaps not surprisingly, only one group of staff within Makelt wanted to share knowledge using a groupware system; they were the IT staff who were responsible for implementing that system.

## 6. Concluding remarks

We conclude this paper by drawing together the key themes that those undertaking knowledge management initiatives need to watch for when “thinking process”, and by adding some implementation “dos and don’ts” based on the knowledge management initiatives we have observed and participated in.

### 6.1 Key themes

Break the silos – ensure that the initiative is truly taking place across the organisation.

Remember to consider leadership and roles in relation to the processes concerned. From the process perspective, the unit of analysis is the role, rather than the person: one person’s job may be spread



across more than one business process. Particularly important is that where there is a business process cutting across the silos, someone has to have the overview of it as a process.

An open question is how this relates to the idea of knowledge champions (Duffy, 1998). As mentioned above, roles are really important with a process view. At one time knowledge champions were a hot topic in the knowledge management literature, but while there continues to be much discussion of roles at CKO (Chief Knowledge Officer) level, roles below that are not so evident – yet they are key to the leadership of knowledge management as an activity.

Learning by individuals must be firmly in the context of the activities that the task they are carrying out involves. Again, from the process viewpoint performance of a task relates to a role.

Knowledge management initiatives offer a fruitful way to improve the management of risk/uncertainty in a world that is perceived to be increasingly uncertain.

## **6.2 Do...and don't...**

Do:

- Lead from the top
- Make sure to cut across boundaries
- Think of a knowledge management initiative in terms of being part of an ongoing knowledge management activity, not as a “project” that is done and finished

Don't:

- Go against the organisation's culture
- Expect people (or processes) to change overnight
- Ignore the exceptions to the process – either make sure your process can cope with them, or ensure that they cannot happen

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