

Business Benefits of Non-Managed Knowledge

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Abstract: This paper proposes that knowledge cannot be effectively managed, rather that people are so complex and the knowledge they acquire so varied and, even in a room where everyone is being taught the same knowledge, uptake is so disparate that to truly manage what an individual knows is impossible. An effective alternative which allows people to maximise their knowledge (even the bits we might not know they know) is to measure the outputs of an individual: what they achieve. The case study in this paper illustrates one innovative company's design to maximise the knowledge of their employees and how the management-less structure they recently adopted has had a profound effect on the engagement of their workforce - in their work and on their profitability.

The argument will critique the theory of knowledge transfer as the movement of a body of knowledge from one place to another. Additionally it confronts the misuse of the work of Polanyi where theorists have crudely bunched together notions of understanding and the hidden aspects of our knowledge under the title 'tacit' knowledge and juxtaposed these with 'explicit' knowledge, which refers to documented and shared knowledge within an organisation. This paper promotes an approach that follows Coverdale's (psychologist) idea that getting things done by developing skills as opposed to focusing on traditional knowledge management is the premise of the company's success. The anthropological notion of cultural memes is explored, and the idea of agency will be introduced as a useful concept in acknowledging the potential of individuals to unleash their knowledge.

The case study presented here is from empirical ethnographic research within a company in the South West. The company has transitioned from a traditionally managed SME with a hierarchical structure, to a de-centred model for workplace where each individual within the company is responsible for what is essentially like their own mini company within the larger one. The company data (quantitative) from before these changes were introduced compared to the data now (on aspects such as Quality, Delivery and Profitability) tell a remarkable story about the effects of management and organisational structure on individual performance and commercial profitability. It would seem that the best results commercially and in individual competency so far point to a counter-intuitive, hands-off approach to KM within an organisation. They point to what is in fact the non-management of knowledge in the sense that knowledge will not be prescribed or transferred from one person to another, but rather drawn out of the individual.

Keywords: knowledge management, outcomes and application, reification, cultural memes, agency, innovation

1. Introduction

This paper will be presented in three sections; following the introduction, the second section is a theoretical discussion surrounding the nature of knowledge and its management, while the third section will detail our observations in the workplace as a case study, the final concluding section will recommend an approach to knowledge management, or non-management, for organisations that is extremely cost effective, counter-intuitive as it may seem.

Our arguments come with two basic assumptions. The first is our understanding of knowledge: knowledge to us is something infinite and intangible, something unique to each individual. Knowledge itself cannot be measured at a specific time or place. It is only recognised by its implications; that is we only know of its existence through the outcomes it produces.

The second is our use of the term 'conventional management'. By this we refer to top-down hierarchically organised systems, with separate specialised functions for different aspects of the organisation's needs that are prevalent in our business world. We acknowledge there is a diversity of management systems, even within the top-down model, but for the purposes of this paper 'conventional management' refers to a system whereby some individuals have positions of authority over others, and responsibility resides primarily with those in the positions of authority.

2. Theories of knowledge management

Let us first define our understanding of the meaning of the terms 'knowledge', 'management' and 'knowledge management'. Theories of knowledge are extensive, but two of the most quoted and influential theorists are Michael Polanyi and Ikujiro Nonaka. Polanyi separates knowledge into two distinct types: the explicit

knowledge as codified and written down, that can be passed on from one person to another; and the tacit knowledge that an individual draws on subconsciously or unconsciously from a range of conceptual and sensory information and images that can be brought to bear in an attempt to make sense of something' (Smith 2003). For Polanyi, 'tacit knowing achieves comprehension by indwelling, and ... all knowledge consists of or is rooted in such acts of comprehension' (Polanyi, 1958).

Nonaka (1991) takes this position further to say that tacit knowledge can be made explicit (as expressed by Wilson 2002) and corporations who tap into tacit knowledge of the individuals working for them are more successful. Within such literature (on systems of management that can capture the knowledge of individuals and share it throughout the organisation), many contributors have lost sight of the value of tacit knowledge and the very fact that it cannot be codified.

Management is usefully defined by Henri Foyal (1967) as comprising of five functions: planning, organising, leading, co-ordinating and controlling. But management can be more effectively defined to avoid the assumption that it must be directed from an individual/group in a position of authority unto an individuals or groups in lower positions. Mary Parker Follett (1868-1933), who wrote on the topic of management in the early twentieth century, defined management as 'the art of getting things done through people'. This definition does not imply didactic management from persons in authoritarian positions, but allows for the self-organisation of individuals or groups.

One definition of knowledge management (KM) from the corporate perspective is that 'KM is the practice of harnessing and exploiting intellectual capital to gain competitive advantage and customer commitment through efficiency, innovation and faster more effective decision-making' (Barth 2000).

The International Journal of Management Science, OMEGA, recently ran a special edition on knowledge management. In a review of this edition, King et al. (2006) outlined a broad perspective to take when examining the different contributions to the issue: that knowledge management can be described in terms of a life cycle. Knowledge is generated in different ways, and stored within organisations, who then transfer or 'share' this knowledge with others (employees), where it is used or applied in problem solving. King et al. claim that all contributions to the debate fall somewhere along the cycle.

Our paper critiques the notion that knowledge can be collected and stored in the organisation, extrinsic to the individuals who form the organisation. And then disseminated whole and complete to others.

Some studies (Kjaergaard and Kautz 2008; Orzano et al. 2008) show that, even with the best intentions and optimum conditions, KM implementation programs simply do not work. Kjaergaard and Kautz concluded that the failure of a KM implementation programme lay in the ideological misfit that employees experienced between what they imagined working with KM in their company would be like and the reality of working with KM in the company, thus the process of KM installation was abandoned. Orzano et al. showed how expensive formal technological KM sharing practices that were installed within a medical practice were not efficient (as promised), and in fact lost knowledge in some instances. They juxtaposed these observations with instances where more traditional face to face knowledge sharing practices which were proving to be worth-while.

All of the above treats knowledge as if it is something real and tangible like an asset. Are we guilty of the reification of knowledge?

To reify is to regard or treat (an abstraction) as if it had a concrete or material existence (Wikipedia.com). When knowledge is reified for the purpose of corporate KM, it becomes fixed and tangible. This does not allow for the individual's internal landscape into which any new knowledge must be accommodated. Either the knowledge must be modified to fit an individual's internal landscape, or the individual's internal landscape must be modified to fit the knowledge, or the knowledge is lost (through lack of understanding). Then the process of recall and practice of this knowledge is itself subject to problems during reconstruction. If the knowledge is no longer valid, or circumstances do not support it, then it quickly will be extinguished. The transfer of knowledge is not reliable, repeatable and dependable. The "knowledge" presented to individuals must be interpreted (or not), assimilated (or not), stored (or not), recalled (or not) and applied (or not) in achievement of a goal (or not). This provides ample opportunities for knowledge management to go awry, even given the best intentions of all concerned.

If knowledge is an abstraction, truly knowing what knowledge someone possesses is impossible. And thus it is impossible to manage what someone knows.

As one keynote speaker for the Delphi Group's Collaborative Commerce Summit once scoffed: *'You can't manage knowledge... Knowledge is between two ears, and only between two ears.'* (Drucker, cited by Kontzer 2001). And Kontzer goes on to make the point that what is important for organisations is 'what individual workers do with the knowledge they have'. When employees leave a company, he says, 'their knowledge goes with them, no matter how much they've shared' (Kontzer 2001). We cannot package it and put it on a shelf, ready to hand to the next person who walks in.

Wilson (2002) reiterates this point in his argument for the personalised nature of knowledge when he says that "whenever we wish to express what we know, we can only do so by uttering messages of one kind or another - oral, written, graphic, gestural or even through 'body language'." He argues that these latter communications do not carry 'knowledge', but constitute 'information'. When we communicate information, we rely on our listener assimilating our shared information into their own schema of knowledge. Each individual's schema of knowledge is different, because it is, as Schutz (1967) would say, 'biographically determined', therefore a piece of 'knowledge' (derived from a set of information) is never the same for any two individuals.

This brings us to the issue of deliberate misapplication of knowledge by employees in a business. In their book 'Organisational Misbehaviour' Ackroyd and Thompson (1999) show that misbehaviour is endemic in organisations. Though management frequently tries to control and eliminate misbehaviour, such practices are deeply rooted in the formation of employee interests and identities, and in the informal organisation developed to promote and protect them.

Could it be that in conventional KM we find ourselves on a path that is ultimately impossible? The goals of KM, as defined previously by Barth (exploiting intellectual capital to gain competitive advantage) however are as pertinent as ever. So perhaps there is an alternative that is effective and efficient.

Our case study focuses on an organisation that has concentrates on measuring achievement (outcomes). When we talk about outcomes we are talking about implied and applied knowledge, as knowledge must be drawn upon in order to create an outcome. Our case study examines what outcomes one organisation has chosen to measure and how those measures change the behaviours of the individuals who work there.

3. Case study

The data used for this case study is the ethnographic data from research conducted within a small engineering company on the south coast of England. This company has recently changed its management structure from a traditional top-down hierarchical organisation (dendritic, functional, command and control model) to a flat-structured enterprise with self-managing, autonomous individuals managing their own projects from start to finish.

The individuals are responsible for everything from securing future work flow, through design, manufacture and despatch of goods, to final invoicing and archiving. All departments and functions within the business were disbanded so each individual is now responsible for all aspects of the job and its management.

The point must be emphasised that the organisation has not created self managing autonomous work teams, but rather deconstructed the business down to the level of multi-skilled individuals. Their desire for autonomy and self-organisation is exploited within a systemic framework of measures that identifies and measures customer satisfaction and economic value-add.

Whilst this is at odds with conventional leadership wisdom and the division of labour, this approach has provided benefits (customer satisfaction and economic value-add).

In a paradigm where specialisation is promoted from an early stage (in the UK it begins while we are still at school), it seems strange to outsiders that this company requires its employees to multi-skill and be competent sales-men while also excellent design engineers, project managers and accountants. One comment has been 'isn't that the job of ten people?' illustrating that in our wider culture we expect not to be multi-skilled at work. However, the individuals who work in this company now are, on the whole, managing their work more successfully – and that success is measured by higher customer satisfaction due to better

quality, delivery records and competitive prices – than when the business ran a conventional management system.

The model underpinning the organisation's new system is best understood from the perspective that businesses demand dynamic compromises to best respond to circumstances that present themselves; a multi-skilled person is better able to make cost effective compromises than a group or team effort (who have only static prescriptive solutions at their disposal). The essential characteristic of the company's new model is that the nature of individual responsibility has changed from a model where responsibility is distributed to one where it is focussed.

Consider the range of people who contribute to the production of a part. In a conventional model, many people contribute their competencies to the completed part, they are co-ordinated by managers, foremen and IT (and all of these are a cost).

In this business approach very few people, perhaps only one individual contributes to the part, and there is only ever one individual who is *responsible* for the part.

The benefits of the division of labour are lost, but the costs of the co-ordination are saved and customer satisfaction has improved (as has *employee* satisfaction, but that is beyond the scope of this work).

The changes to this organisation were introduced step by step, and here we will outline some of the most prominent.

- Removal of overtime.
- Distribution of centralised stores to stock kept where it is used by an individual
- Personal stock management
- Personal purchasing and reduction in purchasing costs
- Personal goods inward approval
- Removal of clocking-in machine and time cards
- Tracking of customer returns back to individual
- Personal commitment of delivery to customer, and tracking of performance.
- Introduction of an internal market
- Personal creation of inspection criteria
- Personal packaging and dispatch of goods
- Personal order processing
- Personal Profit and Loss account plus balance sheet.
- Attribution of product sales income to an individual
- Introduction of profit related bonus (20% of profit achieved by an individual pcm)

With the removal of management, the cost of running the organisation reduced. Simultaneously the productivity of the workforce increased. Where before individuals managed their work in such a way that it would warrant overtime, so that they could earn more money, the new system rewards good quality and delivery performance (these are measured on each individual every month). There is now the situation where each individual can take home 20% of any profit he or she makes in a month. So by measuring the profit they make, profit making behaviour is indirectly improved.

Similarly with 'knowledge': there are a variety of skills and knowledge that each individual needs in order to successfully manage a project. In order to improve the skills and knowledge of an individual, their outputs must be measured.

This leads us to the issue of engagement. To engage someone is to hold fast a persons attention (OED). Restructuring the organisation on an individual basis has indirectly increased the level of engagement demonstrated by the employees. It is impossible to function successfully within the business without a high degree of genuine engagement, because to produce successful outcomes an individual must use their skills and knowledge. Within this engagement a person brings their knowledge to bear.

We observe that individuals will search out answers to problems when in doubt; they choose to fill holes in their knowledge when these holes become apparent. They test, experiment, research and enquire. Informal

communication provides for the cross pollination of best practice within the business and the personal interpretation of this best practice provides for constant reaffirmation of its validity.

As the individuals who work in this company have acclimated to their positions of multi-skilled managers of their own projects, the company results for the measurement of Quality and Delivery have improved. (see figures 1 and 2.) The directors of the company had to take the risk of letting go of their control over what the individuals did to achieve their goals, even though it seemed counter-intuitive. Yet the results tell their own story. The individuals now do a better job:

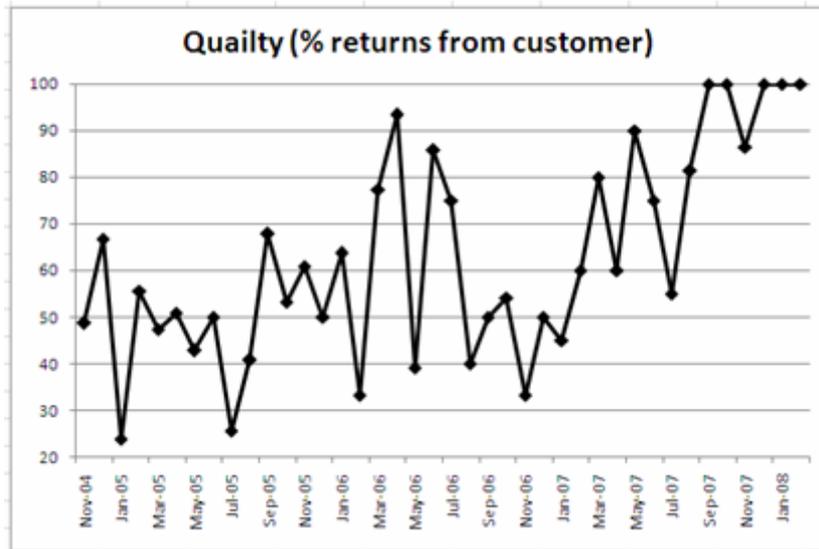


Figure 1: Quality performance, as measured by the % of unreturned parts

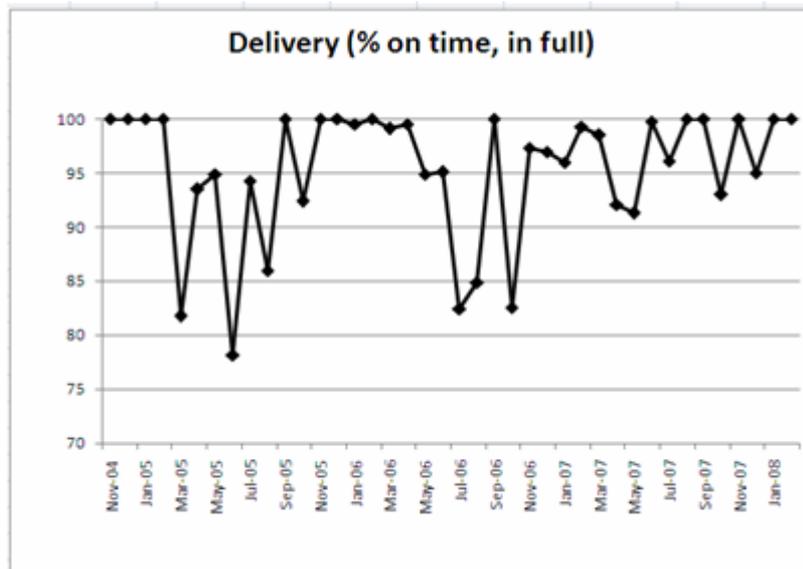


Figure 2: Delivery performance, as measured by % of deliveries on time, in full.

Both these graphs illustrate the improvement in performance over time of the employees.

This case study shows that the change of focus from the micro-management of people and what they know and do, to the management of their performance in terms of outcomes has improved their business performance and the change of approach has proved to be a worthwhile investment.

4. A different approach to KM

The technique used in this organisation has been to create systems and a culture in which people need knowledge to prosper. The organisation is one in which personal interdependence is such that the sharing of

knowledge provides a tangible benefit, then knowledge management is precipitated; and demonstrably so within the outcomes of the business.

Conventional KM recognises this need in organisations, but many try to artificially induce extra knowledge as some extrinsic dimension that can be added on. If we examine closely Polanyi's theories of knowledge, he states that 'certain cognitive processes and/or behaviors are undergirded by operations inaccessible to consciousness' (Barbiero, n.d., cited by Wilson 2002).

Thus the point here is that what he refers to as 'tacit' knowledge means something that is 'hidden', hidden even from the consciousness of the knower (Wilson 2002). Polanyi (1958) used the phrase 'We know more than we can tell' precisely to communicate the inaccessible nature of personal knowledge, inaccessible even to the consciousness of the knower. That tacit knowledge can somehow be 'captured', as is the claim of Nonaka (1991) and Nonaka and Takeuchi (1995), is a puzzle. As Wilson asserts, 'tacit knowledge is an inexpressible process that enables an assessment of phenomena in the course of becoming knowledgeable about the world... it cannot be captured – it can only be demonstrated through our expressible knowledge and through our acts' (Wilson 2002).

Thus this organisation uses an alternative approach which is to work in alignment with Coverdale's (1977) values, and to focus upon the 'doing' skills and knowledge of an individual rather than knowledge as an extrinsic entity, as these kinds of skills are the tangible outcome of knowledge use.

Coverdale links difficulties, knowledge, actions, outcomes and risk together: he shows us that when we meet a difficulty we must bring our knowledge to bear on the problem (he calls these synthesis and analysis) and act (do something, use skills) and take risks (we don't know if it will work out) to produce an outcome which is a resolution to the problem.

Risk is present at both personal and corporate levels, the purpose of KM is to ameliorate the risk from the corporate perspective. It is assumed that to develop a KM strategy is to protect this intellectual capital by making it tangible and to preserve it once the individual who carried it leaves.

Companies, especially in the service industry, rely upon the knowledge of their individual's for their income. As Barth (2002) points out, 90% of their assets (intellectual capital) are carried around in the heads of the workforce.

This is a paradox, because at the heart of conventional KM is the assumption that knowledge can exist separately from the individual who carries it, and through separation risk is reduced. But the act of separation demotes the knowledge to the level of information and actually increases risk. This may be the reason that outcomes in KM programs are inconsistent.

Here then is the heart of our difference in approach. Where conventional KM has tried to separate knowledge from the individual systemically, our approach promotes knowledge as an inextricable part of the individual and provides both responsibility and risk at the level of the individual.

During our practical exploration from within a real business environment, we believe we have determined that knowledge can not be transferred explicitly and completely (identified, transferred, collected, stored, retrieved and applied) in a *cost effective* manner. We are not suggesting knowledge cannot be managed, but rather that doing so is not cost effective; it may even be cost prohibitive and culturally damaging.

We believe that KM follows the law of unintended consequences; it is always incomplete, and the work required to complete it introduces more problems. And whilst more effort is put into completing it, completion is never reached. There are always more instructions or hints and tips one could add. Furthermore, the cost of this effort applied to all the knowledge put into storage is not repaid by the successful application of the subset of knowledge which is actually retrieved.

We explored many alternative ideas whilst developing this work, including the idea that managing even highly incomplete knowledge can provide value and an investment return. But whilst this looked promising, we predicted a significant problem with getting operators to use a "library" with knowingly incomplete knowledge in it; uptake being crucial to the return on the investment.

For the KM process to be complete it has to include the following: the development of new knowledge (hypothesis, experimentation, application and affirmation), its capture (condensation) and transformation (communication), collection (accumulation) and categorisation (to make it searchable), its storage (secure and accessible), retrieval, then comparison of the original context to today's circumstances, the prioritization of all the knowledge revealed in the search, and the application of knowledge in pursuit of a commercial purpose (quality, delivery, profit or conformity), and the final realization of the commercial goal.

The more useful and explicit one makes knowledge in preparation for storage, the more expensive is its management. Expensive KM is not in itself a problem, however the investment return on that expense is. How much is the knowledge worth? Each bit of explicit knowledge has only a finite value, and that value is determined by the circumstances of the future, and the successful application of this knowledge in those circumstances. The organisation started to search for a more useful way of viewing knowledge. In hindsight, the shift was made to view knowledge as a dynamic and infinite abstraction, and therefore not treat it as a "real" thing; not to *reify* it.

Returning to the practical exploration of the KM problem, it remained the organisation's goal to achieve the commercial benefits of KM; they were struggling to engineer an investment return on their KM program, yet it remained central to the commercial success of the business. It was a barrier that had to be successfully overcome.

The solution is to pioneer an alternative approach that provides the commercial benefits of KM, but without the explicit management of knowledge. The experience of the business has been that the secret to commercial success of KM is its IMPLICIT management, in contrast to explicit management. And that explicit KM does not provide a net investment return, it is unreliable and culturally counter productive.

In pursuit of communicating this approach, knowledge (K) can be viewed as an *abstraction*, or a first order derivative. It is something that cannot be directly observed, rather its effects can be observed. Having found this derivative (K) very difficult to manage explicitly, a *consequence* of the knowledge was sought, that might provide something real to manage.

Thus their attention was turned to the "outcome" of K, specifically, to find something that would imply the use of managing K (like a shadow implies a solid object). It is reasoned that if the organisation can reliably precipitate that outcome, then the KM it implies must be occurring as well.

The organisation focuses on identifying and rewarding the individuals within the organisation who overcome the commercial barriers of the present day. Those who can satisfy their customers profitably, even in tricky circumstances, are rewarded each month. When this second order derivative (commercial outcome) is managed, it precipitates KM. Furthermore it tends to elicit very unconventional KM techniques by its operators. Slick, fuzzy (logic), innovative, even at times counter intuitive, these techniques are providing commercial outcomes and clearly implied knowledge management, but are not fixed and deterministic in nature. Through managing the consequences of achieving commercial outcomes, the organisation is implicitly inducing a fluid KM strategy. And the KM that is elicited this way is diverse, yet successful. For example, can you get your competitor to unknowingly, yet securely store knowledge for you at their expense? It may seem like a strange thing to do, but it is a successful KM strategy.

Knowledge can be usefully viewed as a collection of *cultural memes*. This idea goes some way to address further complications in KM that were encountered, for example the context and nature of the stored knowledge was constantly moving, not just during retrieval but also within the "static" storage phase. Rather than knowledge repositories being a dusty storage of bits of data and facts, every new piece of knowledge was re-writing the old previously stored knowledge and making it obsolete or newly applicable.

Knowledge, it was found, is not fixed, it is dynamic. It is advantageous to treat knowledge as changeable of the pursuit of commercial success in the current circumstances, rather than the replaying of previous knowledge schema. There is a tendency to reify it; and when we tend to treat the abstract as real in error, and we suffer accordingly.

This idea of knowledge as a cultural meme provides the opportunity to think about the diversity of solutions that may be applicable to a particular problem. That is to say, presented with a particular problem there are a number of approaches that could be taken to reach a solution, based upon different knowledge routes. This diversity of knowledge provides a richness of choice to the solution set, it is not about identifying the

knowledge to solve the problem, but about which solution gives you competitive advantage. As promoted by Ashby's Law of Requisite Variety, a range of solutions is only available through diversity.

We believe that there is cultural risk in turning knowledge management into a process where knowledge is reified, because this destroys the ability of the future user of that knowledge to overcome the unique barriers of their circumstances. There may be short term benefits of neatly packaged KM, but there is a clear danger of creating a knowledge 'mono culture'. The aim must be to have both the short term gains of effective KM, plus the long term gain of a diverse knowledge culture.

If knowledge is viewed as a collection of cultural memes, destroying cultural meme diversity is a high risk strategy. For example, distil the genetic diversity of a crop and yields improve, but the long term risk is high because a day will come when the entire crop is decimated by some hidden vulnerability. It is genetic diversity, and subsequent exponential growth of the surviving strains that provide your only hedge against complete crop failure and subsequent famine.

The diversity of cultural memes is key to ensuring a business is capable of tackling the unique commercial barriers that exist in its future. Rather than treating knowledge as something to fix and distil, it must be nurtured and diversified. Thus we believe this approach to KM uniquely satisfies both short term goals and longer term risk amelioration.

Returning to our idea that knowledge lies within the individual, and to Follett's definition of management as 'the art of getting things done through people' (Barrett 2003:51), the anthropological concept of agency further informs the philosophy behind our argument that the focus of knowledge must lie within the individual. The concept of agency is developed by Nigel Rapport (2003) as indicative of an individual's capacity for action in the world. Rapport illustrates his argument with case studies of four individuals whose lives were characterised by taking unusual paths, trajectories he called them; ones that seemed at odds with the hegemonic ideals, and took strength of character to uphold. In this instance we would advocate agency as something each person possesses that allows them to act independently of instruction to meet their needs.

When the individual is made responsible for their own risks in an effort to achieve outcomes, they will, through their own agency, bring their own dynamic knowledge set to bear on the situation. Through their engagement with the problem, knowledge is used, skills are drawn upon and solutions found from wherever they need to come from. There are many more possible solutions to a problem when an individual has the freedom to find them than when management prescribes a process for problem solving.

Our argument is that when conventional management is applied to knowledge, knowledge becomes reified as something extrinsic to individuals. This is not the true solution to managing knowledge for 'exploiting intellectual capital to gain competitive advantage', as our case study and argument shows.

Therefore knowledge needs to be approached as something non-manageable. Something that is inextricable from the individuals within the business, and that the best way to 'manage it' (that is, get the best use out of it) is to allow the individual to manage it themselves.

This paper does not recommend the outright replacement of conventional KM, but rather serves as a reminder that KM can only be cost effective when in the context of systems, measures and a culture that is not dysfunctional.

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