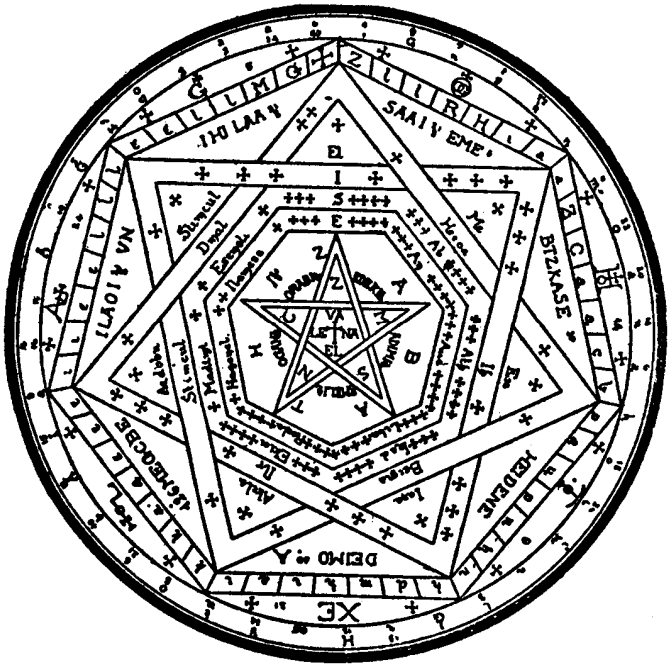

Sigillum Dei Aemeth, a Pantacle

by Dr John Dee (1527-1608)

The Anatomy of Knowledge

Establishing a useful definition of knowledge
and laying out the ways it makes sense to speak of
Knowledge Management as a practice

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INTRODUCTION

The emergent field of Knowledge Management (KM) has labored under a number of challenges, not least of which is the fact that there persists a wide-ranging divergence of opinion on what the key concepts used in discussions actually mean.

In the face of this divergence of opinion, at times laced as it is with acrimony, many KM practitioners have elected to 'agree to disagree' and thus set off in their own preferred directions. But the burden of responsibility remains on these practitioners to return at regular intervals to the fundamental questions of:

- What is knowledge?
- What is, therefore, knowledge management?

This short paper has been prepared as a single contribution to this process of definition. In seeking brevity, this paper will not set out to address the multitude of existing definitions and KM frameworks. These prior explorations have certainly influenced the following – but pursuing each in turn would massively expand this effort. Instead we will attempt, in as simple a manner as possible, to introduce a set of definitions and a proposed KM framework that would seem to sidestep some of the more gnarly areas of disagreement and hopefully offer some value.

THE VALUE OF DEFINITIONS

While apparently the venue of academic preoccupations, the refinement of definitions is a fundamentally practical activity. Without the collaborative evolution of increasingly precise definitions, any field will become bogged down in fruitless exchanges. Communication grinds to a halt. This becomes even more true when practitioners must define their organizational roles, responsibilities and research using terminology derived from the base definitions. This is very much the case in KM.

WHAT IS KNOWLEDGE?

With no further ado, here is a proposed definition of knowledge. Elaboration follows as it is certain that for different readers, each starting with different ideas about KM, the import of this definition will only succeed at transgressing one of more conceptual taboos:

> "Knowledge is the *meaningful organization of information*, expressing an *evolving understanding* of a subject and establishing a *basis for judgment* and the *potential for action*."

In fact, this definition, upon closer examination, turns out to not be that controversial and perhaps not even very novel. But in working through its derivative consequences, we will find a number of specific advantages.

MEANINGFUL ORGANIZATION OF INFORMATION

There are schools of thought that work strenuously to differentiate knowledge from meagre information, which tends in these cases to be cast as cold, inert, and uninteresting when compared to the beating pulse of living knowledge. In this scenario, information exists 'outside' as the exchange artifact while knowledge lives 'inside'. There are numerous serious, indeed fatal, problems with this line of thinking but more on this later.

As will appear shortly, the definition of knowledge by reference to 'information' does evoke the ubiquitous 'pyramid' linking data, information and knowledge in a value chain. This is intentional. But there is a twist.

What is key to notice in this particular part of the definition is the role of 'meaning', the introduction of human intent into the construction of knowledge. Organization, while seeming a little cold, does leave open a wide range of possibilities for how knowledge and information interact.

Taken together these two terms 'meaningful organization' give rise to a pair of different interpretations. One is that knowledge is an emergent construct that is manifest as an organization of information. In this way, knowledge emerges from information. The second is that knowledge is the organizing principle that governs information. In this way, information is the product of knowledge. Both interpretations are intended. That there is a complicity between information and knowledge aligns with the idea that knowledge emerges from, and then constrains and directs, information.

Under this line of interpretation, knowledge exhibits a complex, bi-directional relationship with information and this, far from denigrating knowledge, instead recognizes information as something more interesting, and more human, than is sometimes conceded.

EVOLVING UNDERSTANDING

This part of the definition attempts to come at the question of validity, or truthfulness, as a key defining element and differentiator of knowledge. It is an admittedly cautious approach. On one hand we have the philosophic challenges associated with determining 'what is truth' while on the other we do have the common sense conception of knowledge as something that cannot be manifestly false. We know about 'mis-information' as information that has been intentionally framed to mislead people, but we do not talk of 'mis-knowledge'. If something is shown to be false, it is automatically ejected from what we would call 'knowledge'. So there is an incumbent need to incorporate 'validity', in some form, into our definition.

Out of a panoply of possibilities, 'understanding' was selected as that which best describes what knowledge represents. It is a term that is often associated with the command of a subject achieved by one individual, with this command being something that is frequently difficult to share. But it is also a term that is used to describe an agreement, or bond, between people and this adds a critical communal aspect to what 'understanding' can mean. In our use of the term, as chronicled in the Oxford English Dictionary, 'understanding' is variously applied to our comprehension, our powers of abstract thought, our perception or judgment of a situation, and – most interestingly – a sympathetic awareness or tolerance of the perspectives and even feelings of others. As such understanding is a suitably rich concept with which to underpin our definition of knowledge.

There have been explicit arguments against deploying the term 'understanding' in this capacity. These arguments chiefly turn on the recourse to the need for validity in knowledge and the notion that understanding does not guarantee validity. We can understand something that is in fact false. But this argument can be overturned in two ways. First, if one genuinely understands something that is false then one must understand its falsity. Second, this argument applies equally well to knowledge because we may well turn out to be wrong in our beliefs, however well justified, and when this is exposed, what was once deemed knowledge is rejected as error and replaced by a worthy successor.

Philosophically speaking, it is prudent to sidestep the question of 'truth' and maintain that it is best to assume fallibility and therefore that the best posture to be adopted will be one of reasonable skepticism when it comes to any and all knowledge claims. This does not mean that all knowledge is equally worthy of distrust, but it does mean that there is an onus to continuously evaluate, test, question, criticize, discuss and hopefully reaffirm what is being held as knowledge. In all ways, this is a much healthier way of viewing knowledge – it becomes a dynamic process of validation and advancement instead of a static snapshot of truth.

As a consequence of the foregoing, knowledge in this definition becomes an evolving entity with this presuming an active ecosystem from which it has emerged and upon which it continuously depends. Pursued to its conclusion, this line of thinking highlights the social nature of knowledge and stresses the importance of articulation, of cultural expression, in enabling a process of evolution that depends completely on the engagement of perspectives in what amounts to a multilateral discussion.

The above line of reasoning places this definition of knowledge squarely in opposition to approaches that emphasize, indeed emphasize to the point of excluding all other ideas, the personal and private nature of knowledge. And opposition to these approaches is necessary and again intentional.

A BASIS FOR JUDGMENT

There is a growing emphasis being placed by KM practitioners on the link between knowledge and decision-making. This emphasis has substantial merit. It is essential that knowledge exhibit a manifestly useful role in the daily lives of people and organizations. By providing a sound, and continuously improving, understanding of a relevant subject, knowledge provides the foundation upon which people, acting individually or in unison, can form clear objectives, identify options for their realization, select amongst those options, and take effective action.

It is interesting, and important, that the connection to decision-making is passive and indirect. Knowledge provides a basis but does not prescribe what objectives are set or what paths are chosen. There are a number of reasons why this is important. Firstly, knowledge needs to be 'accepted' in order to become the basis of judgment. If the knowledge exists but the people involved in a decision are unaware of it or disinclined to accept it as valid, therefore as knowledge, their judgment will be unaffected by that knowledge. Secondly, in order for people to make effective, and timely, decisions, the full complexity of the applicable knowledge has to be 'accepted' and therefore taken as a given.

The energies during decision-making must be focused squarely on situational details and intended outcomes and all that can be assumed needs to fade into a subordinate and supporting role. This is in fact how people operate when making decisions and seeing knowledge in a purely supportive role makes it clear that it only acts as the stage on which the theatre of real-time decision-making is played out.

THE POTENTIAL FOR ACTION

Following a very similar path to that sketched out above for decision-making, knowledge provides the potential for action without unduly constraining what actually happens in the world of events. But knowledge does supply the ability for an individual or organization to act, and act effectively, as it provides the validated understanding that can be used to project outcomes, determine risks and mobilize resources.

The realm of action, or in a corporate environment the sphere of business operations, is thus something that draws on knowledge. In making interventions into stream of events, these actions lead to results which provide a critical input into the evolutionary processes of validation that can yield improvements in the understanding of a subject. This uncovers another important bi-directional dynamic wherein knowledge enables action and actions can improve knowledge. Of all the possible ways to evolve knowledge, action leading to experiential results remains the best.

MORE ON DATA, INFORMATION AND KNOWLEDGE

It is common to encounter models that posit a hierarchical relationship between data, information and knowledge. There is usually an increase in value or importance assigned as one moves from data to knowledge. While it is true that these hierarchies tend to over-simplify matters, there is some merit in retaining the hierarchy even if in a modified form.

This pyramid is usually topped by wisdom which is a term, quite frankly, that seems patently absurd to use at this time and specifically in the context of modern organizations. The use of the term ‘wisdom’ in most cases accords with what we have been discussing as ‘judgment’ and, as can be seen in Figure 1 below, there is a different approach being offered for explaining the link between knowledge and judgment.

Associated with the proposed definition of knowledge, are two further definitions – one for information and another for data.

INFORMATION

> "Information is the *meaningful organization of data* communicated in a *specific context* and with *the purpose of influencing or informing others*."

Information then is fundamentally 'communication' amongst people. It is very much the manifestation of culture. This definition does not privilege one mode of communication over another and it does not limit the contextual scope to which it applies. Given our earlier discussion about the complex relationship between knowledge and information, it is clear that some information messages will be formulated to convey significant amounts of knowledge while others will be almost completely ephemeral. This definition of information, it is important to stress, does not presume that communication between interpreting parties will be easy or even successful. This observation in fact takes us back to the importance of the evolutionary dialogue surrounding the advancement of knowledge.

DATA

> "Data is the meaningful *representation* of experience."

Following the theme exhibited in the two previous definitions, this definition of data foregrounds the fact that it is a fundamental facet of communication. Data is how we represent things and communicate about them. Contrary to some treatments, this approach highlights the fact that data is *not meaningless*. By virtue of having been selected, retained and classified, data items are automatically situated within a representational framework that is itself the articulation of a domain of knowledge. It should be noted that in this definition, there are no bounds set on what experience entails as it can include perception of events as well as received and interpreted information.

A REVISED HIERARCHY

While retaining the general structure of the familiar hierarchy, Figure 1 introduces something closer to a process view that highlights the complex relationships between data, information and knowledge, and between these three concepts and the domains of experience, action and judgment.

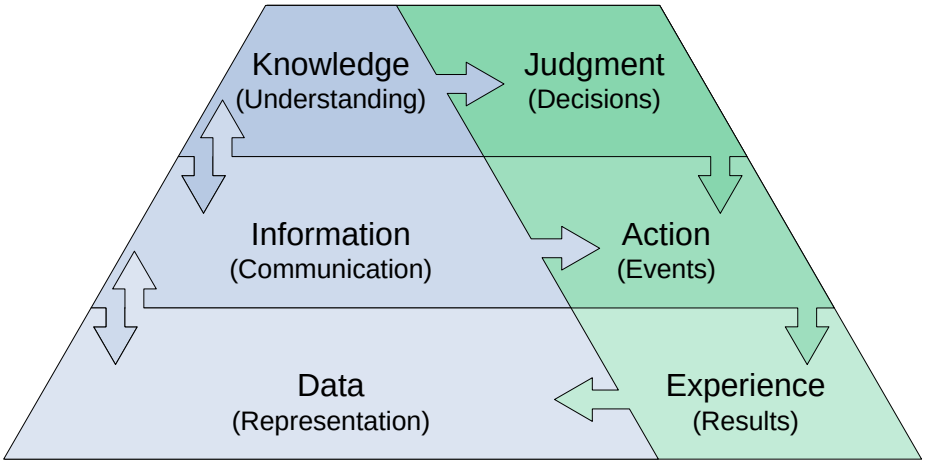

Figure 1 - The Knowledge Dynamic

When compared with other visualizations of this hierarchy, it is immediately apparent that the mystical top level of wisdom has been removed in favour of a parallel hierarchy of experience, action and judgment. This is a distinct improvement because the connection of the knowledge hierarchy to the domain of execution and consequences had typically been left to an assumed link between 'wisdom' and action.

Looking only at the connections between data, information and knowledge, the bi-directional connections between each of the levels, hence amongst all the levels, is the most visible change. Following this line downwards, as it were, it is possible to see how a particular understanding of a subject would give rise to a specific formulation of a representational framework, complete with a system of symbols and measures, within which a set of data values could be represented and therefore retained and communicated. Following the line in the opposite direction, it is possible to see how data values can give rise, through the active engagement of people creating meaning, to new information structures that in being communicated become subject to discussion, criticism, evaluation, testing and possibly acceptance as a basis for judgment. The dynamic in fact can give rise to complexities that would delight even the most fervent post-structuralist. But there is also a lateral dynamic in this

model which highlights the connections between knowledge, information and data with judgment, action and experience.

As discussed previously, the domain of decisions, events and results exists in relation to, but separate from, the reference framework provided by knowledge. People make decisions, take actions and participate in events. Ideally, this all happens with recourse to the requisite knowledge to realize a satisfactory outcome. But it is not essential that knowledge provide the reference framework for decisions. A lone person, upon forming the intent and deciding amongst apparent options, can simply strike out and act. They can walk through that door. In the absence of knowledge, the outcome of the decision, naturally, is up in the air. In addition to informing the decision making process, for example by providing foresight into possible outcomes, knowledge also provides the resources that an individual can leverage in order to act effectively and thereby influence, positively, the outcome. Beyond individual action, knowledge provides the framework within which information is formed and communicated, with these 'speech acts' being critical to realizing an intended goal wherever the collaboration of a group of people is essential. For most important actions, knowledge provides support to decision making and action by providing both the framework in which effective decisions are made and the resources that make effective action possible.

Actions in turn give rise to results that are experienced, along with all other sources of experience. This realm of perceived experience, in which we participate, is thus the source of data wherein observed aspects of experience are captured, retained and classified using the frameworks at our disposal. Clearly, the evolution of our knowledge results in an improvement in our representational frameworks and therefore in an improvement in our ability to capture, retains, classify and learn from experience. If data and experience stand at the bottom of our hierarchy it is because this is where the 'rubber meets the road'.

THE QUESTION OF TACIT KNOWLEDGE

The definition of knowledge advanced above most closely accords with Karl Popper's 'objective knowledge'. Exploring this relationship more fully would be the proper subject of another paper. However, in making this connection it becomes a question of how does this definition of knowledge address what would be classified as 'mental knowledge' and 'physical knowledge' within Popper's rubric? How can this definition, and one can see the question coming, accord with the almost universally venerated notion of 'tacit knowledge'?

The answer is that knowledge, as defined herein, finds only a partial concordance in what might be called mental, or tacit, knowledge and no concordance whatsoever with what might be called physical knowledge. We should dispense with 'physical knowledge' first.

PHYSICAL KNOWLEDGE

Unavoidably, researchers in the physical and biological sciences have had to work with available terminology. So it is that terms, such as information and knowledge, come to serve a role in the analysis of physical and biological systems. In seeking to formulate refined definitions of these same terms, one is then tempted to incorporate these newer uses into the meaning conveyed by these already complex terms. Redefinition efforts that accept this challenge invariably seek to identify a grand unifying theory wherein ideas that were originally formulated with reference to human actions, such as knowledge, are found to have corollaries, and perhaps antecedents, in nature. So it is that DNA comes to have 'knowledge'. This is then taken to be the most 'fundamental' form of tacit, unarticulated knowledge that can influence judgment and action.

The definition of knowledge advanced in this paper rejects this extension by stressing the centrality of human communication to the meanings of knowledge, information and data.

It is theoretically possible to retain the proposed definition of knowledge, and to continue to expand all of the subordinate definitions, so as to elaborate upon a connection with the structures evident in physical and biological systems. But the question must be raised as to what end. In spite of the usual affiliation of these efforts with theories of complexity and emergence, these approaches can seem strangely reductionist (we are this way because our molecular composition predestines us so) or naively anthropomorphic (projecting intelligence into crystalline structures).

All this aside, struggling to advance a definition of knowledge that is germane to KM, and to organizations, should not be impeded by attempting to universalize the definition so as to straddle not just human affairs but also the very essence of the cosmos. Ironically, the advocates of this grander effort seem to feel this is a way to fortify the elemental unpredictability, and presumably the fundamental intransigence, of people as if it were a virtue to be celebrated rather than something to be collaboratively transcended.

TACIT KNOWLEDGE

There remains one interesting dimension to the argument for including 'physical knowledge' in our definition and that is the notion that these physical elements do influence human judgment, action and perception. It is due to this unarguable fact that it is then claimed that if judgment and action depend on knowledge then these more basic ingredients are an indispensable part of what we call *knowledge*.

That physical and biological reality figure prominently in human affairs is so obvious that it defies the need for restatement. The fundamental point of departure however turns on whether or not all possible influences on human judgment and action can be usefully understood as knowledge. The answer to this question is a resounding 'No'.

While many will feel that drawing a line around knowledge that explicitly excludes physical influences will diminish the significance accorded to knowledge, it would seem that the reverse would be more true.

Knowledge is a human construct and its presence as an available basis for judgment, and as the potential for action, should immediately be recognized as a critical differentiator of humanity over lower forms of life.

But the argument that all items germane to the decision-making and action-taking behaviour of people should be deemed to be part of what we understand as 'knowledge' has not been completely dispensed with given the rejection of 'physical knowledge'. There is a major constituency that advocates, at times vociferously, that the tacit dimension of knowledge is the important concern of KM and that anything so pedestrian as to be written down as a formal and explicit manifestation is no longer of interest. This is an intentionally mischievous summation of the position staked out by advocates of 'tacit knowledge' and it is of course a caricature.

As mentioned above, the definition of knowledge proposed in this paper in fact can be used to throw some interesting light on the question of tacit knowledge. It does not, however, hold that tacit knowledge does not exist or that the body of work that has grown up around the concept does not offer substantial value.

In the original work of Michael Polanyi on the "Tacit Dimension", it is interesting that his focus falls squarely on 'tacit knowing' as a process instead of what has become 'tacit knowledge', positioned as

it is as the inarticulate substratum of knowledge. Looking at 'tacit knowing' as a process, Polanyi found that there are many 'proximal' elements that support the projection towards a 'distal' point – an object of the knowing process. The proximal elements are those that are tacit because the knower must look beyond them towards the objective if knowing is to occur. They become invisible because they are not the object of our attention. These tacit elements, it is stressed, can become at times the focus of the knowing process, and thus, for that time, cease to be tacit. Polanyi's work is very interesting and among the items of interest is the sheer range of proximal elements that can make up 'tacit knowledge': physical abilities, biological composition, feelings, and the like, as well as knowledge that has been internalized, skills that have been refined, and even tools that are available and whose use has been mastered.

In the light of the proposed definition of knowledge, it might be useful to deconstruct the concept of 'tacit knowledge' into two separate areas.

One is what could be termed '*pre-articulate*', meaning that it cannot be articulated as communication either because it has not itself become the object of knowing or because of its fundamental nature. The realm of the unconscious, the inherited and instinctual, would fall into this category as would feeling, proclivities or antipathies, intuitive guesses, recalled memories, insights and the like.

The second is what would be termed '*accepted*' in that despite playing a tacit role in the knowing process, in decision-making and actions, it is in fact knowledge that was articulated previously and acquired through contact with cultural artifacts, socialization or instruction. This side to tacit knowledge is what we will refer to as 'accepted knowledge' and it is central to our concept of the *knowledge dynamic*. Knowledge must be accepted if it is to be used effectively as the basis for decision-making and action. Accepted knowledge can be used to describe not only acquired knowledge but also knowledge distilled into cultural artifacts, into tools, whose nature becomes tacit in day-to-day affairs where it is the function that draws our attention and not the composition.

The point that needs to be made is that within the tacit dimension it is only 'accepted knowledge' that can be included under our definition of knowledge. The pre-articulate elements of the tacit dimension, along with what we discussed as 'physical knowledge' are set aside from the discussion of 'knowledge' per se. This is not to say that these elements are not important, or that they do not play critical roles in decision-making and action, or that they do not provide inputs to the knowledge dynamic. It is to say that these elements cannot be usefully understood *as knowledge* and that including them under the rubric of 'knowledge' degrades what we mean by the term.

I have been known to say that 'knowledge' is just one word and it should not be forgotten that the English language provides many other useful words that can be deployed to help elucidate the many factors that influence human behaviour: skill, imagination, feeling, empathy, resolve, instinct, aversion, and so the list could continue. At some point, it ceases to be useful to attempt to force one word to carry the weight of the world. At times, it would seem that KM Practitioners who strongly advocate the 'tacit dimension' of knowledge are attempting to do just that.

ACCEPTED KNOWLEDGE

Among the attractions of the visualization of the knowledge dynamic, provided in Figure 1 above, is the fact that it highlights a number of 'locations' where complexities emerge and specifically in the entire realm of issues pertaining to the interaction between what we might call the knowledge stack and the judgment stack. How does knowledge actually come to enable judgment and what is the character of its influence? How does knowledge become effectively actionable especially where responsiveness and adaptability are the desired behavioural traits? How does knowledge become accepted? How, in fact, is knowledge fed by experience and by the other qualities inherent within the people participating in, and perceiving, experience?

Unfortunately, or fortunately, the proposed definition of knowledge and the associated framework of a *knowledge dynamic* does not offer easily accessible answers to these questions. Many of the issues that were excavated through work grappling with 'tacit knowledge' in fact remain central and hopefully gain more weight when placed into this framework.

Among the challenges specifically showcased in this model is that of forcing accepted knowledge to be acknowledged as such and submitted to renewed evaluation and improvement. The acceptance of knowledge can persist well after it has in fact ceased to be knowledge and this is a manifest risk. Similarly, many of the elements that were previously included under the rubric of tacit knowledge but that are fundamentally pre-articulate and unconscious should not be left unchallenged. One of the reasons for excluding these elements from our definition of knowledge is to ensure that specific strategies can be put in place to identify and challenge what is unconsciously received so that knowledge can hold sway over habit and prejudice. At the other end of the spectrum, excluding these elements from what we mean by knowledge helps to showcase the fact that the transformational processes that in turn create knowledge emerge from human creativity, individual and collective, and that this creativity exists outside of what we are defining as its product - knowledge.

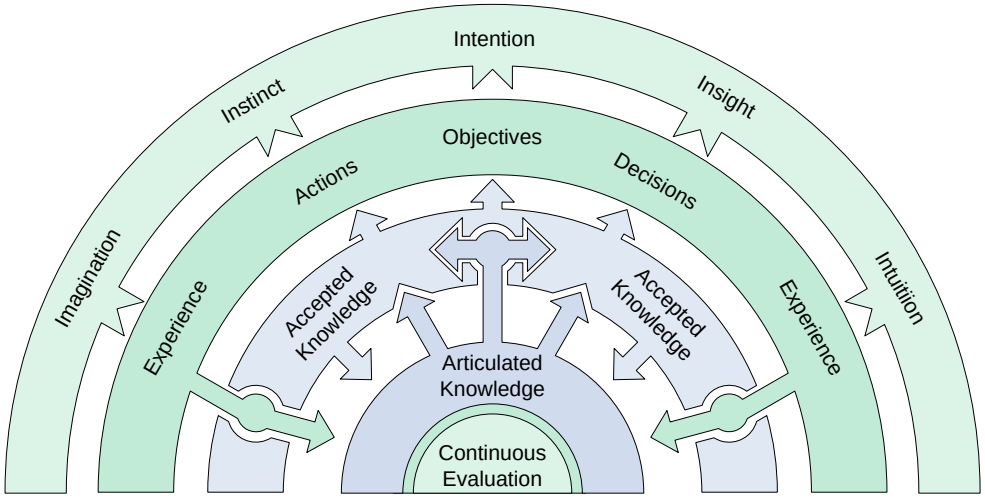

Figure 2 - Articulated and Accepted Knowledge

As illustrated here, there are two dimensions, or states, of knowledge: *articulated* and *accepted*. Articulated knowledge has, as its name suggests, been articulated as information that has been communicated, as a behaviour that has been demonstrated, or as artifacts that embody knowledge in a tangible, and potentially usable, form. Accepted knowledge has, as its name suggests, been accepted for use and therefore becomes an assumed component in the decision-making process and an unconsciously available capability for action. Also as its name suggests, accepted knowledge will also have been articulated knowledge although the prospect exists that articulated knowledge will become 'lost' after it has been accepted.

The point is that to qualify for the name of knowledge, an idea for example must be articulated and shared and it must undergo an appropriate process of evaluation. The result is *articulated knowledge* that can become *accepted knowledge* through a process of acquisition (learning) and acceptance (internalization).

The above illustration also endeavours to depict some of the challenges that are highlighted by the model. Experiences will be filtered through accepted knowledge even if they do not 'fit' with the articulated knowledge that stands behind it. Ideally, the inputs from experience will come to create a revised and improved version of the articulated knowledge. Similarly, accepted knowledge once entrenched by successes will become highly resistant to change even after success becomes elusive in practice. Finally, all decisions and actions will be subject to influences other than accepted knowledge with some of these influences being positive and others markedly less so.

Depending on the context, some influences on decisions and actions will be more important to heed than others. Manufacturing an aircraft wing, as one example, is the wrong time to indulge wild flights of fancy. At such a time, we would hope that articulated knowledge, recently refreshed, will govern events. And the refreshing of this knowledge would progress through an analysis of past experiences and observations, an aggressive period of testing and validation, a detailed documentation effort, and an engaging program of training and education that continues throughout the manufacturing process in the form of team procedures, discussions and mentoring. On the manufacturing floor, as challenges arise, the team can use its knowledge as the basis for engaging their creativity to address the problems using the best resources available to them at the time. As passengers on the resulting aircraft, we would take comfort knowing that such a *knowledge dynamic* exists.

POSITIONING KNOWLEDGE MANAGEMENT

It is completely valid to assess definitions according to their consequences in practical application. In this case, the focus shifts to what does Knowledge Management become given these definitions?

At the present time, KM is struggling to maintain its boundaries against Information Management (IM) on one side and Human Resources (HR) on the other. With the increasing emphasis being placed on the role of knowledge in decision-making, innovation and operational performance, another boundary has emerged between KM and general business management. This is in part why it has been important to define the terms within KM so carefully. In reality, much of the trouble KM has been experiencing as an emerging field can be linked to the fact that the community of KM Practitioners does not share a common set of definitions and those that are in widest circulation are ambiguous at best.

As one example, consider the school of KM thinking that emphasizes ‘tacit knowledge’ and in particular the unconscious elements that defy articulation. This school follows this line of definition towards initiating strategies and practices for facilitating group collaboration, enabling innovative thinking, personal mentoring, and shared team-leadership. All of these specializations are completely valid but they are immediately recognized as falling completely within the traditional purview of the Human Resources branch in most organizations. This is not entirely a bad thing but it does, practically speaking, tend to cut the KM practitioner off from other aspects of the KM agenda and from other organizational areas. KM thus becomes a tool within the arsenal of another discipline.

As another example, there are those who have always associated KM with the Information Management (IM) groups within organizations. This branch of KM practice can be accused of not accurately weighing the challenges of engaging people in the hard work of creating and validating knowledge or in seeing it become accepted throughout the relevant parts of the organization. IM approaches to KM have tended, following an Information Technology (IT) orientation, to stress the management of physical information resources and the deployment of technology. The control focus stems from the IM mandate to apply governance rules to the retention and disclosure of information. The technology focus tends to be an offshoot of the control focus, in part, and a manifestation of a general organizational proclivity to confuse automation for action. Any definition of knowledge that does not foreground its interconnectedness with communication, judgment and action will tend to travel down this path.

As a final example, there have been attempts to reposition KM as a subset of strategic planning, business innovation, or operations management. This movement has tended to emphasize the centrality of knowledge to effective decision-making. One notable consequence of this positioning has been the open questioning of whether a field such as KM even exists. Traditional business management would likely agree with Peter Drucker in saying that the job of making knowledge productive, of seeing it applied operationally, is called 'management'. If knowledge is only the potential to take action, and knowledge management is focused on improving how knowledge is leveraged, then this criticism is completely valid and there is no distinct role to be played by knowledge management practitioners.

In each of these examples, a specific approach to defining knowledge, and the associated positioning of knowledge management, has led to the subordination of the KM agenda to an existing organizational disciple. And perhaps KM is rightly considered as such.

The definitions proposed in this paper, however, would appear to lead us towards a delineation of responsibilities for KM that is quite distinct from other disciplines. And this would seem to be what most KM practitioners would prefer to see. Self-interest aside, there are in fact good reasons why KM has emerged as a field of specialization and it has a genuinely practical role to play in the modern enterprise.

PRACTICAL KNOWLEDGE MANAGEMENT

What makes knowledge interesting and unique is its *vitality* or, in other words, the extent to which it is an active subject of inquiry, evaluation, validation, and discussion. What makes knowledge valuable is its *utility*, or the responsiveness with which it is accepted and placed into productive use. What then does it mean to manage knowledge?

Following a line of argument advanced by Joseph Firestone, one answer to this question is to declare that in order to manage knowledge we must in fact manage the process with which it is articulated, validated, communicated, accepted and kept reliable through the continuous improvement of that process. It is about facilitating *the knowledge dynamic*.

It thus becomes possible to set out clear boundaries for Knowledge Management as distinct from other organizational disciplines.

Firstly, what KM is not.

KM should not be about the details of skills planning, staff selection and development, incentive programs to influence behaviour, the management of career paths and so on. This is the purview of Human Resources branches although, once again, KM has a major interest in having certain approaches adopted and in seeing certain behaviours encouraged.

KM should not be about the *deployment of management controls* over the information pathways that run through an organization and amongst its partners. It is not about controlling the retention, disclosure and disposition of information assets although KM clearly depends on the effective execution of this mandate. Nor is KM about the deployment of the technology components that can help to facilitate different types of communication although again, KM has a vested interest in seeing these technologies effectively leveraged.

KM should not be about *the use of knowledge* in the execution of business as this is the purview of the management team put in place to run the organization and whose responsibility it is to maximize performance.

In each of these cases, there will remain significant links that need to be cultivated between KM and these areas. In each case, the identified organization will be a beneficiary of an enhanced knowledge

management process. In specific cases, the identified organizational element will also provide key services upon which the KM agenda will depend.

Specifically, the HR branch of an organization will likely stand as the most vital connection for KM. It will be the HR branch that can facilitate the introduction of effective behaviours for articulating and validating knowledge, and implement successful learning processes through which vital knowledge is accepted into key organizational areas. In the case of IM/IT, there is an important role to be played by technology especially as suitable collaborative software has entered the mainstream. It is absolutely critical that technology be effectively deployed to ensure that information flows amongst all the stakeholders in a knowledge domain.

In order to become a practical discipline by which organizations can realize improved performance, Knowledge Management itself needs *to focus* very resolutely upon the following:

- identifying what areas of knowledge are vital to an organization and what parts of the organization require that knowledge to operate,
- evaluating the costs and risks associated with maintaining the necessary levels of knowledge in the organization,
- determining what processes need to be put in place to achieve and sustain the requisite levels of knowledge,
- planning, implementing and facilitating communication venues to ensure that critical knowledge is accepted into key business practices,
- operating processes whereby critical knowledge areas are subjected to recurrent evaluation and are advanced by active research,
- facilitating reviews of the knowledge processes for key knowledge areas, ensuring that qualified, and objective, resources are brought to bear,
- establishing active connections with key external centers of knowledge advancement in the areas germane to the organization,
- integrating knowledge articulation, validation, research and communication activities into education and advancement programs,

- identifying key knowledge innovations within the organization and managing these assets, ensuring maximum organizational benefit,
- benchmarking the organization, its knowledge state and its knowledge process against leaders in its field and, for the commercial sector, its competitors, and
- integrating the knowledge process into the strategic planning process of the organization to ensure that the changing landscapes of relevant knowledge domains can be taken into account.

