

# Knowledge Management As A Methodology Towards Intellectual Capital

Gil ARIELY<sup>1</sup>

<sup>1</sup>University of Westminster, Westminster Business School,

35 Marylebone Road, London NW1 5LS, United Kingdom

Personal Address: P.O. Box 1487, Eilat 88115, Israel

TelFax +972 8 6318090; Email: [UHD@attglobal.net](mailto:UHD@attglobal.net) or [G.Ariely@westminster.ac.uk](mailto:G.Ariely@westminster.ac.uk)

**Abstract.** This paper seeks to serve as a road map for a possible methodology of knowledge management, and of the research exploring it, highlighting main intersections, and the signs pointing ahead in such journey. The research aims eventually at advancing the creation of a coherent integration amongst Knowledge, Knowledge Management, Intellectual Capital, and some of the concepts in between, i.e. Value, Intellectual Property [1]. This paper however, suffices for demonstrating the argument motivating such an effort. It promotes the need for, rather than describes in full, such possible methodology, and highlights main themes afloat so far in the two years of research. Starting by reviewing some of the literature and the concepts, serves to build common grounds (and my argument) towards the questions 'is knowledge management part of intellectual capital? And if so, how?', and attempts to clarify the relationship. The discussion of KM is developed to an array of processes and methods, involving various forms and components of knowledge, identifying inherent tensions in the term and concept. Further tensions are identified in the research as inherent along the whole spectrum of aligned concepts, some tracked to their epistemological roots. The motivation and relevancy are demonstrated through the vision behind KM, as perceived by the author.

## 1. Introduction - *The development of the current context of knowledge management*

In order to fully comprehend the difference in perceptions towards the terms of knowledge management and intellectual capital, a deeper dissection both of the terms and of their context development is required. Moreover, an understanding of the relationship of knowledge management with associated concepts, such as organizational learning and the learning organization, human resources management, information systems and artificial intelligence, and cultural issues, is desirable as well, and is elaborated in my research. Even nowadays, there is no full consensus on definitions and perceptions as "Knowledge management is an emerging practice, hence there are many interpretations as to what KM means and how to best address the emerging questions about how to effectively use its potential powers. e.g. Davenport and Prusak, 1998, Edvinsson and Malone, 1997, Nonaka and Takeuchi, 1995, Wiig, 1995" [2]

One point of departure is to examine the components of the terms, in turn.

## 2. Knowledge

Discussions into the very essence and nature of knowledge, have occupied, since the time of pre-Socratic philosophers, the field of epistemology, especially with regard to its limits and validity. I have no intention to evade the connection of epistemological issues relating theories of knowledge, to knowledge management, and to the very core of my research question. As J. C. Spender puts it "every attempt to use the concept of knowledge in organizational analysis must be preceded by an explanation of its nature. This is straight philosophy or, more precisely... straight epistemology" [3].

Davenport and Prusak offer us the "working definition" of knowledge as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a

framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers.” [4] p.5 And Burton-Jones defines knowledge as “the cumulative stock of information and skills derived from use of information by the recipient. Where the recipient is a human being, knowledge thus reflects the processing (thinking or cognition) by the brain of the ‘raw material’ supplied in the form of information” [5] pp.5 so that data (“signals which can be sent by an originator to a recipient”), on its evolution to become information and then further to its next level of transformation to knowledge- gathers both meaning and value.

### ***What are the forms of knowledge?***

Less acknowledged, but essential to understanding the fascination of our era into the possibilities and opportunities evolving from managing the behaviour of knowledge, is “Monologue” versus “Dialogue” knowledge.

Plato relates to the fundamental difference from the dialogue of knowledge, where the connection between the knowledge ‘owner’ and the receiver is kept, versus written knowledge where the creator of the knowledge is differentiated from his creation. This notion was emphasized throughout the industrial age and the 1450s Gutenberg’s print, most appropriate to the very nature of the industrial age [6]. It is only nowadays (starting perhaps to move from the information age to the knowledge age) that ubiquitous computing, allows us again the interactive relationship between knowledge creator and receptor, yet in a global- not dual, fashion. The opportunities resulting are so enormous and intuitively clear to all that the researchers and practitioners in the field of KM are merely making them explicit.

However, the more acknowledged forms of knowledge in the literature are the relationship between “tacit” and “explicit” knowledge. It was as early as 1958 that Polanyi wondered about the essence of personal knowledge, defining the distinction between the basic forms of knowledge [7] as either tacit or explicit. But as Bertels and Savage write “Nonaka (1991) has brought the interplay between tacit and explicit knowledge to the fore” [8] pp.22. Explicit knowledge does not necessarily mean it’s *codified*- however it is much easier to codify knowledge once it is made explicit. One might also argue about what level, if at all, tacit knowledge can be codified, and if so, how.

Yet another way to approach two very different forms of knowledge is to look upon knowledge “stocks” versus “knowledge flows”. This perspective is relevant for the following discussions of the relationships between knowledge and knowledge management to intellectual capital. It is significant to the resource-based view of the firm, as “Dierickx and Cool (1989) consider resources as stocks, which cannot be adjusted instantaneously but rather are accumulated through consistent investment” [9] pp.99 and they illustrate this using the tub metaphor (i.e. water = know how) p. 1506. Thus, it also bears on the tension between the terms “knowledge” and “management”. A “stock” of knowledge could perhaps be managed, measured etc. using management tools for other types of stocks (with some adaptations). But how can one manage a “flow”? Perhaps, as beavers discovered from an early age, flows can only be learned, funnelled, nurtured at most.

## **3. Management**

The definition of management (which seems to have evolved up to the 60’s MBO):

1 : the act or art of managing : the conducting or supervising of something (as a business)

2 : judicious use of means to accomplish an end (i.e. Management By Objectives)

It suggests constraints: supervising, conducting, directing, and coordinating.

Indeed, “The industrial paradigm is based on the principle of command-and-control, and depends heavily on the hierarchical organization structure. It is supported by Adam Smith’s

division of Labour, and F. W. Taylor scientific management” pp. xvii [10] Thus, combining the terms might create somewhat of an oxymoron;

While the legacy of Taylor to us from the industrial-age is task specialization, and, thus, hierarchical structures and management, the post-industrial age that McLuhan (1960)[6] and Toffler (1970)[11] predicted of continuous rapid change brings other needs. It leads to a proposition of ‘controlled chaos’ for innovation, based on what Nonaka and Takeuchi call “creative chaos” [12], through “balancing chaos and order” [13] pp.41. Hence, the ecology of knowledge creation and creativity, demands cultivating and nurturing [13], not managing it, and suggests a much more permissive approach to management in the post-industrial age.

Expanding the discussion of possible management of knowledge as a resource, stress the connection of related theories of the firm, such as resource-based view of the firm, evolutionary and competence-based theories of the firm. It is relevant for the motivation and rationale, behind the interest in knowledge management. “Knowledge is too problematic a concept to make the task of building a dynamic knowledge-based theory of the firm easy”. Hence, the knowledge-based theory of the firm is about taking a step further from “knowledge as a resource toward knowledge as a process” and into “a very different mode of theorizing, less an objective statement about the nature of firms 'out there' than a tool to help managers discover their place in the firm as a dynamic knowledge-based activity system.”[14]

#### ***What does this merger of terms and concepts, knowledge and management, yield?***

First, the differing definitions expose the problems the industry has with defining, thus commonly understanding, such a combined term, hinting to a difficulty in the merger itself. As mentioned, the difficulty is the lack of clear delineation amongst concepts, resulting in recursive definitions, which to my taste is the sign of a definition that is not definite. Hence, a preferable definition to organizational knowledge management, correlating the aim of KM in the organization with those of the organization, would be “*strategies and processes to create, identify, capture, and leverage vital skills, information, and knowledge to enable people to best accomplish the organization missions*” [15] (p.17, quoting APQC). The tensions in the term ‘knowledge-management’ itself are well explored by Von Krogh et al. [13] who propose we “enable knowledge creation” rather than manage it. I suggest, the dilemma can perhaps be approached by managing *the processes* relating to the domain of knowledge management, rather than presuming to manage the knowledge itself (i.e. knowledge transfer management, knowledge codification management, etc.) Indeed such a notion relates to yet another definition “*Knowledge management is the configuration and control of operational knowledge processes in such a way as to promote the yield and pleasure of knowledge as a factor of production*” [16]

#### **4. The essence of ‘value’, The definition of includes:**

- 1: a fair return or equivalent in goods, services, or money for something exchanged
- 2: the monetary worth of something: marketable price
- 3: relative worth, utility, or importance
- 4 a: a numerical quantity that is assigned or is determined by calculation or measurement
- 7: something (as a principle or quality) intrinsically valuable or desirable

I argue that the duality in the above definition of value is critical since the meanings of the word reflect on the tensions incorporated in the *concept* of value.

“Economists view *value* as the sum of a stream of benefits (or income) stretching into the future, summed and discounted to a net present value in dollars. Yet value has meaning for many others besides economists. “ [17] Any capital and currency, is dependant upon its market. So is Intellectual capital.

The value of knowledge implemented towards action in one context (or having the potential

to be), may be absolutely worthless in another. “The relative value placed on innovative ideas is largely dependent upon the firm’s view of itself, and upon the reality of the marketplace. Put another way, each firm exists within a context that shapes the firm’s view of what is or is not of value.” [17] The perception of the value of the organization’s intellectual capital becomes its intellectual property and intellectual assets. Assessing it is essential, as is assessing the investment in IC (similar to any other capital). So, things, which are valuable, do not necessarily have value. They are *value-able*, i.e. having the potential for value, with perception making their value ability come true.

## 5. Intellectual capital

Knowledge management and intellectual capital are not one and the same, contrary to what is implied by some of the literature. Some overlap is apparent, but the relationship is far from simple and clearly justifies exploration. Early attempts at alignment perceived KM as the implementation, as IC promotes value- i.e. acknowledgment, reporting assets etc. [18]. Sullivan [17] moves us further towards the understanding of KM as **value creation** in all its aspects, versus IC, or ICM, as **value extraction** (thus, measurement, accountability, explicability, etc.). Petty and Guthrie [19] quote the OECD on intellectual capital as “the economic value of two categories of intangible assets of a company: (1) organisational (‘structural’) capital; and (2) human capital” pp.158

Yet, as to the relation of IC and KM they write: “The delineation between the terms ‘knowledge management’ and ‘intellectual capital’ also seems unclear at times” pp.159. Roos et al. (1998)[20] define Intellectual Capital as “a language for thinking, talking and doing something about the drivers of companies’ future earning” pp.v. They describe IC as a continuous thinking to the problem of managing knowledge in organizations, and emphasize that the definition of Intellectual Capital must be clear, and it must be measurable. In order to *manage* Intellectual Capital it must be *measured* (which elicit both great interest and great scepticism). “The product of this dialogue is a plethora of new measurement approaches that all have the aim, to a greater or lesser extent, of synthesising the financial and non-financial value-generating aspects of the company into one external report. Principal among the new reporting models are the intangible asset monitor (Sveiby, 1988; 1997; Celemi, 1998); the balanced scorecard (Kaplan and Norton, 1992; 1996); the Skandia value scheme (Edvinsson and Malone, 1997; Edvinsson, 1997); and the intellectual capital accounts (DATI, 1998).” [21]

I argue that, if knowledge is part of human capital, then *managing knowledge is part of the structural capital*. So that successful KM is in itself, part of the organization’s Intellectual Capital, in addition to the knowledge incorporated in it as a process, and in its people. It reflects directly on the vision of IC as an incentive for KM elaborated ahead.

To sum up my perception of intellectual capital, and in particular its possible measurement and reporting, it is possible to consider intellectual capital as the ‘knowledge’ phase in accounting; If we have so far taken *raw financial data* [22] pp.77, the signals, and put them *in-formation* in order to *inform* in the accounting reports, the knowledge of the firm- mostly tacit- was created in the mind of the reader, be it an accountant, investor etc. using other various tacit and explicit sources to inform. The intellectual capital movement is trying to make as much of this knowledge as possible explicit; much of which arrives in qualitative data, and qualitative in-formations.

And in what is IC different from the concept of **intellectual property (IP)**? IP laws and concepts, stands as a domain of knowledge of their own; there are inherent tensions between the freedom of speech which progresses science and art, and ownership limited in time granted as brands, copyrights or patents. Such balance is threatened by dialogic knowledge, as the IP intervention point is at the knowledge-creator.

## 6. A tense relationship- knowledge management versus intellectual capital

“It is about intellectual capital;” “The basic driver behind knowledge management is the premise that, just as an organization producing capital goods would not allow its tangible assets to be under-utilised or unmanaged, an organization producing information and knowledge should not let its intellectual assets be under-utilised or unmanaged.” [15] p.19 Indeed the complexity of knowledge as a resource, hence of knowledge management and intellectual capital, prevented attempts at integration [18] or even coherent alignment. But to my understanding, the tensions that lay beneath the surface between Knowledge Management and Intellectual Capital are derived from their basically different nature in relation to the conservative production factors (Land, Capital, Labour), because intellectual capital relates to “Capital”, whilst knowledge management relates to “labour”. Yet the behaviour of IC is not the same as capital; “Intellectual capital is, even if it refers to ‘capital’, not a conventional accounting or economic term” [21] pp.10 complying with other rules (i.e. of depreciation, creation).

There’s tension between knowledge, distinguished from labour, as well. [23] note that “In a ‘post Marxist’ world, knowledge workers are once more becoming the owners of the means of production”, i.e. knowledge.

As the “ground” we build research on is *knowledge*, it is worth going into epistemology; there lies one more real foundation for this tension between these two domains, knowledge management versus intellectual capital, perhaps to a degree even between their correlating communities of practice (with similar overlap). There is an epistemological diversity amongst thinkers, in the most intrinsic approaches to the world, to knowledge, to truth and validity. And it reflects on the core, not just on the derived research methodology.

“Our knowing- even of the most unexceptional kind – is always too big, too rich, too ancient and too connected for us to be the source of it individually” [24] pp.141. Hence “Knowledge is socially constructed” (Despres, KMSS 2002).

It is that tension, derived from epistemological differences, that justifies an attempt to approach the field of intellectual capital, from a different foundation, i.e. social constructivist’s orientation, and the derived approach and methodology, in order not to neglect the real essence of value, which is interwoven with perceptions, and *is* constructed socially. Einstein reminded us that not all that can be counted- counts, and not all that counts- can be counted. Hence, value and perception might become components (or methods in the array) of the proposed methodology. Again, it is *perception* that brings realization to the potential for value of *value-ables*, reminds us of the critical duality in the definition of *value*, since the two meanings of the word reflect on the tensions, hence the connection, between them. Indeed it follows that some tension is also derived from the very essence of the term ‘measurement’ - which implicitly tries to *quantify*, the very *qualitative*.

## 7. The vision of KM, as the motivation for the research

Karl Wiig writes, “One doctrine of KM is the need to arrange our affairs to avoid rediscovering what earlier thinkers have created but maximize the reuse of valid knowledge and practices. We must adopt this tenet for our own work in KM. . . KM is not a result of people having become smarter, only more knowledgeable by building on powerful concepts inherited from prior generations.” [25] Hence, my vision of Knowledge Management is a catalyst for the creation of human knowledge, moving us up the trajectory curve in the hyperbole of human knowledge creation, improving *the way* we built on past generations of knowledge in all fields. Such a notion highlights the importance of the connection to Intellectual Capital being the incentive for the industry to invest in research and implementation of KM and IC. It brings the short and medium term benefits that organizations and management so often seek, but brings us all the long term benefits from

the blossoming of KM, knowledge, and knowledge on knowledge.

## 8. Conclusions

### *So, Is knowledge management part of intellectual capital? And if so, how?*

Exploring this question, with the incorporated epistemological tensions, taking sample and screening the ‘roots along with the soil’ might allow for the discovery of a relationship, which can then be modelled into a methodology and grounded in data.

Knowledge, and *managing* all of its elements (i.e. processes, components, forms) becomes part of the organization’s Intellectual Capital. The Intellectual Capital is then transformed through its value to the organization (a matter of perception, dependant on the eye of the beholder), into owned Intellectual Property. Hence, the research seeks to better explore knowledge management as a methodology, which moves us towards intellectual capital and property, the process becoming part of it in itself.

“The management literature highlights that executives play a role in the process of converting resources into something of value to customers ... and managerial skill in these activities is in itself a source of sustainable competitive advantage (Castanias and Helfat, 1991). It is important that future research finds suitable ways of operationalising this management role” [9]. The research results so far suggest knowledge management *is* indeed a suitable way, and managerial skill in KM and IC activities, and the activities themselves, *are* indeed another resource that is *value-able*, hence *potentially* the source of sustainable competitive advantage. However, varyingly, derived from the *perception* of different concepts inherent in KM and IC within the researched organizations, and their environment. Even the myriad of written material on measurement of IC, and measurement of KM and IC success in practice, does not promote such practice as standard, which the model of the journey this research might propose. These results afloat so far are merely the ‘intersections’, which form the roadmap on the way to such a possible methodology.

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